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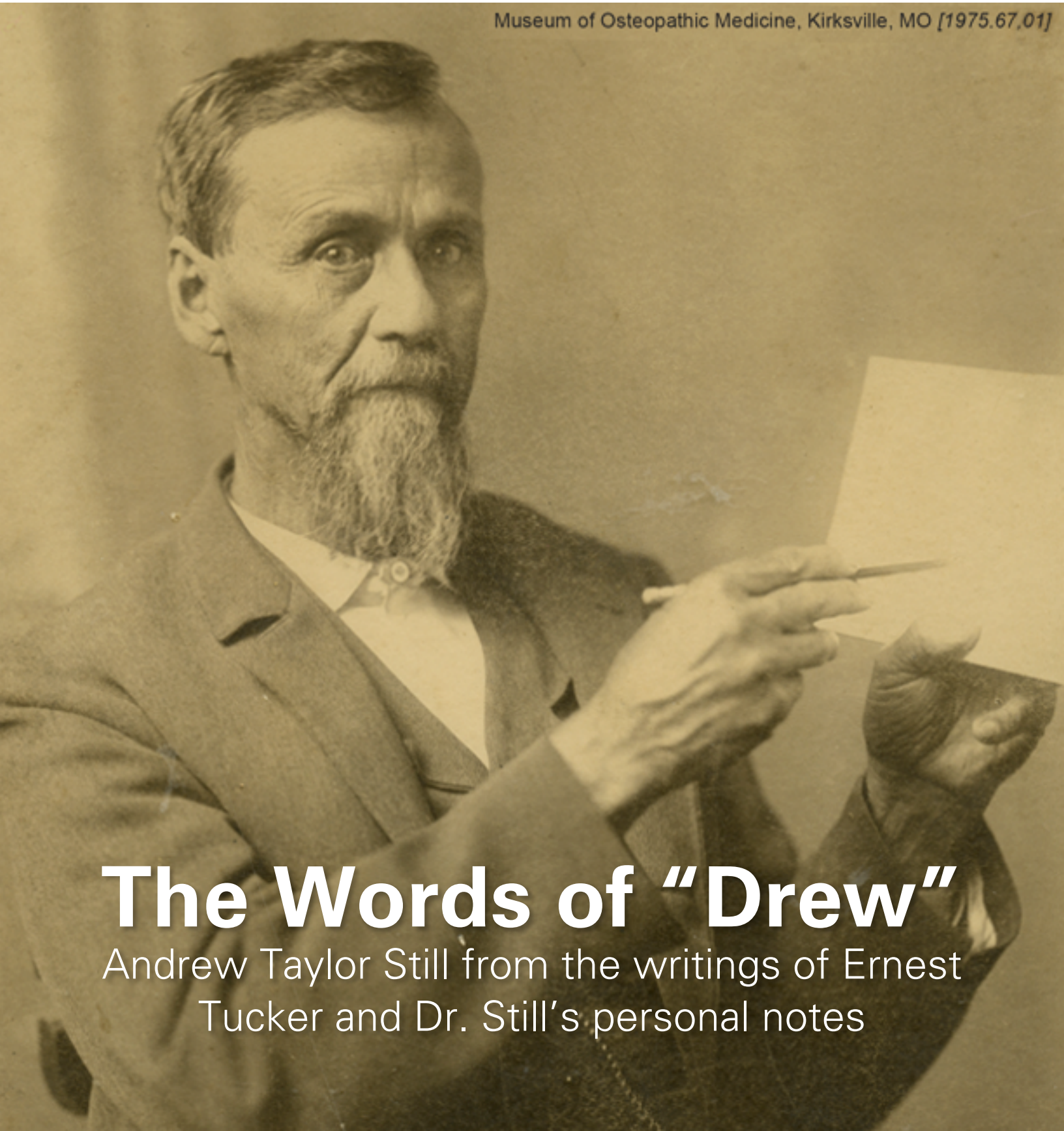

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Musculoskeletal Applications In Cranial Mechanics - Part Four

By Lee Jarvis

In the previous three articles we worked our way around the cranium from the cervicothoracic junction through to the frontal bone. In the following article we will discuss some of the mechanics and articulations of the jaw and face, as well as the impact these can have on the viscerocranium.

The jaw and face were selected for discussion because many of the important organs that we associate with the cranium are contained within, or directly pulled on, by the muscles of the jaw and face. Furthermore, numerous cranial nerves that reflex back to the cranium or control its distal effectors pass along these muscles, and are therefore influenced by the position of the jaw and face.

The jaw bone is extremely important because it has two absolutely necessary functions tied to it. The first function related to the jaw is that the mandible is the initial entry and breakdown point of food. This is because it holds half of the teeth, contains the salivary glands, and is the attachment point for the tongue. The second necessary function of the mandible: speech and communication.

From the jaw to the maxilla to the coronal suture

During the act of mastication (chewing) the two sets of teeth are pressed together (with food between), generating very strong forces on the teeth and all attached bones. The mandible holds the lower set of teeth while maxilla holds the upper set of teeth. The mandible is seen as the mobile bone during chewing with the maxilla remaining stationary; however, this does not mean the maxilla is immobile. The maxilla articulates with numerous bones but for the purposes of this article we will focus on its superior articulation. The maxilla forms a portion of the orbits along with its superior articulation: the frontal bone.

According to Pandula (2011), the average maximum masticatory force on the molar teeth of the adult is roughly 76 pounds of pressure in the female and 116 pounds of pressure in the male. At the lower end of this range, 76 pounds of pressure is still significantly more force than the vast majority of osteopathic manual therapy practitioners place on the skull for purposes of articulation. The muscles of mastication will apply these sometimes 100+ pound forces to the skull countless times on a daily basis (especially if you enjoy well-cooked red meat) through the mandible to the maxilla and into the frontal bone.

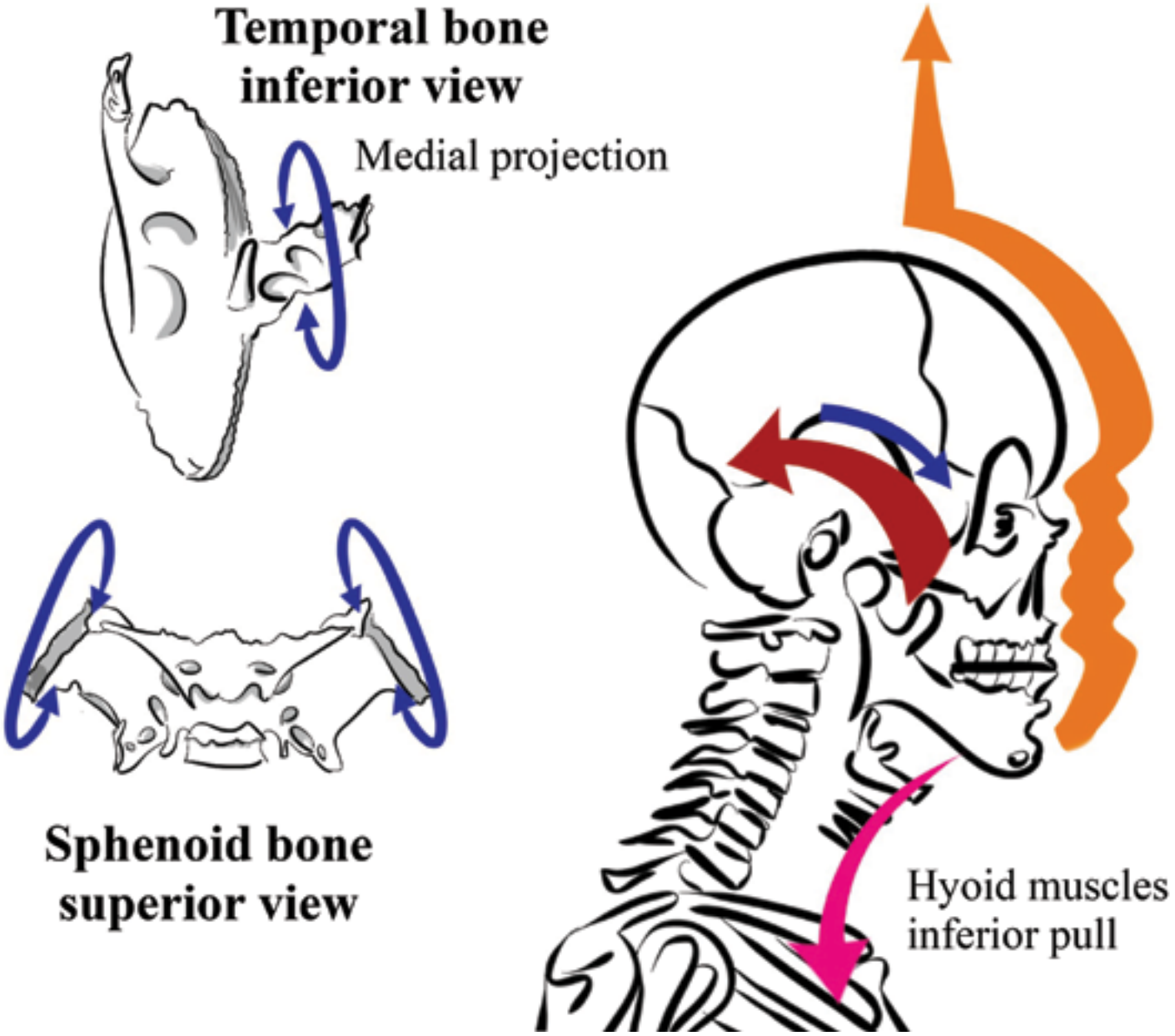
The upward compressive forces of the mandible pass through the maxilla into the frontal and ethmoid bones through a projection called the "frontal process." In essence, the frontal bone encases the ethmoid at its inferior portion, thereby contributing to its articulation with the sphenoid. This mandible, in other words, is applying a vertical force to the frontal bone in the coronal plane during the action of mastication. The frontal bone articulates with the two parietal bones forming the coronal suture, which is a fibrous joint situated in the coronal plane along the length of the posterior frontal and anterior parts of the parietal bones. Upon mastication, the force transferred into the frontal bone can create an upward motion, and the frontal can raise higher relative to the parietal, essentially shearing the coronal suture. When observing the coronal suture one will note that it has, at its most superior portion, interlocking bony projections that will not allow for lateral shearing. However, superior shearing in the coronal plane is accommodated.

This motion of the frontal bone can easily be felt by palpating the most superior part of the coronal suture with several fingers on the frontal and parietal bones. The most superior part of the coronal suture has no muscles of mastication attached to it, so when the jaw is clenched the tension change in the suture can only be coming from the suture itself and the shifting of bones.

Mandible to temporal bone through the temporalis

The mandible articulates with the temporal bone through the temporomandibular joint, and also through a very strong muscular attachment called the temporalis muscle. The temporalis is very wide at its origin and considerably smaller at its insertion. This shows again the strength of the jaw; when a very large muscle acts on a single point it is being concentrated on that point. The temporalis muscle is only one of four muscles (four sets of two), but purely based on size, it is capable of generating a large portion of the total masticatory force.

The articulations of the temporal bone are bevelled around its anterior, posterior, and superior articulations. Because of the orientation of the temporalis muscle and the bevelled edges of the temporalis bone we would expect that; provided the temporal bone had no other fixations, it would glide in all directions quite easily. However, there does exist a natural fixed point/axis of rotation for the temporal bone on the inferior side. On the inferior side of the temporal bone there is a projection that runs from lateral to medial and meets up with the sphenoid and occipital bones, forming the foramen lacerum. This projection creates an axis of rotation in the temporal bone in the transverse plane and limits the motion of the bone to the sagittal plane. When the mandible is fixed in chewing, and the temporalis muscle contracts, we would expect that the temporal bone would be drawn anteriorly and inferiorly at the anterior portion (superiorly and anteriorly at the posterior). This shift in the position of the temporal bone would influence the squamosal (temporal-parieto) suture as well as the foramen lacerum.



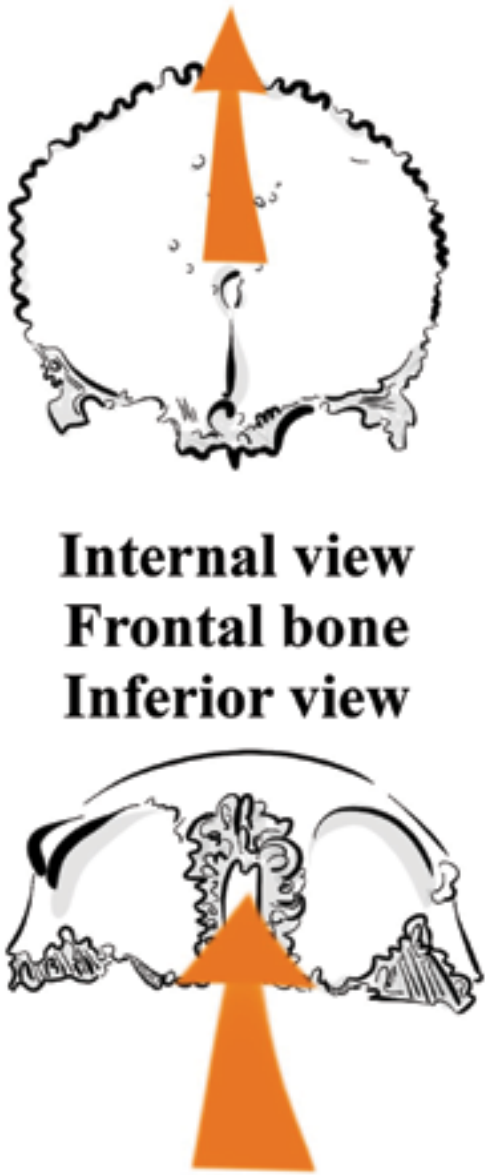
This movement in the skull is difficult to palpate, unfortunately, as the squamosal suture is completely covered by the temporalis muscle, and the foramen lacerum is impossible to palpate without surgery in a living person.

Mandible to sphenoid though the pterygoids

The sphenoid bone has running through it a large number of cranial nerves (2, 3, 4, 5, 6, and portions of 7), as well as blood supplies to the major organs of the cranium and face. There is no doubt in the author's mind that the sphenoid bone with these passing vessels is of major anatomic, physiologic, and osteopathic significance. That being said, the sphenoid cannot be responsible for guiding the cranial mechanics based on its articulations.

The sphenoid bone at its most lateral portions articulates with the zygoma, frontal, parietal, and temporal bones. These lateral articulations are fibrous joints and the interfacing bones all have a bevelled edge. This bevelled edge, much like around the temporal bone, allows for gliding motions to occur as one surface can easily slide over the other. The bones that the sphenoid attaches to laterally connect to other bones at sutures (the coronal and zygomaticotemporal for example) that are thicker and made of interlocking projections. Because these bones interlock, this would mean that the sphenoid is the more mobile bone in the skull and therefore more likely to be "pushed around" by the other bones in changing cranial pressures.

The sphenoid also articulates posteriorly in the midline with the occipital bone at the sphenobasilar synchondrosis which as the name states is secondary cartilaginous joint (a synchondrosis). This joint is comprised of the two relatively flat surfaces of the sphenoid and occipital bone and has cartilage spanning



between them. A cartilaginous joint is capable of some movement however according to Powell and Brodie (2005) the sphenobasilar synchondrosis is typically fused and immobile by 11 to 14 years of age. This would mean that though the sphenoid would have the capacity to move at its lateral articulations but it can only move along with the occipital bone which itself is attached firmly to the cervical spine through atlanto-occipital membranes and ligaments. The sphenoid therefore does not guide the mechanics of the cranium but is a reflection of them and the occipital-atlanto joint.

The pterygoids attach from the inner surface of the mandible to the pterygoid plates of the sphenoid. Upon fixation of the jaw and contraction of the pterygoids, we can expect the sphenoid to be diverted laterally and inferiorly based on the orientation of these muscles.

Sternum to mandible through the hyoid muscles

With all being said about the power of the mandible, it should be known that the mandible does not simply float off the cranium. There is pull on the mandible by a lower point in the body. The mandible is attached at its inferior margin by several of the suprahyoid muscles and these muscles themselves attach inferiorly to the hyoid bone. The suprahyoid muscles are said mainly to raise the hyoid bone up when swallowing. Although this is essentially the only function for the stylohyoid and posterior digastric (because they do not attach to the mandible), the anterior digastric, geniohyoid, and mylohyoid muscles attach directly to the inferior portion of the mandible; therefore, these latter bones are capable of pulling the jaw downward when the hyoid is fixed. Much of the opening action of the mandible is passive via relaxation of the masticating muscles and the pull gravity (that is, the jaw falls down when opening). However, it is possible to forcibly open the jaw against resistance; thus, there must be muscles capable of fixing the hyoid from its inferior side.

The inferior surface of the hyoid bone is attached to the sternum inferiorly by the infrahyoid muscles. One infrahyoid muscle in particular attaches from the inferior surface of the hyoid bone to the manubrium of the sternum: the sternohyoid. The other infrahyoid muscles can be said to contribute to pulling inferiorly on the hyoid, especially the sternothyroid through tracheal connection. When the jaw is firmly fixed in place and one attempts to open it, one will notice that mylohyoid, geniohyoid, sternohyoid, and sternothyroid muscles in particular contract to create the lowering of the mandible. Because the mandible has a significant attachment to the cranium and the sternum, we should expect that if the sternum is lesioned, the jaw and cranium are lesioned as well.

Conclusion

In the four articles that make up this series, it may seem like the author is considering only the cervical myofascial lesion as causative to cranial articular change. However, muscles are generators of force through contraction; they are also pathways along which forces emanating from other areas of the body can pull through. Therefore, at the opposite end of every abovementioned muscle is a potential cranial lesion living inside a non-cranial structure. Your head is as much your trunk as your trunk is your pelvis.

The fact that all muscular attachments are pulled upon in a contraction means that the mobility of the cranial bones, though slight as they may be, are in fact still significant to the rest of the body on a musculoskeletal level. Just as the cranial bones cannot be properly articulated when the rest of the body is in lesion, the body cannot be properly articulated when the cranium is in lesion.

The preceding explanations were hardly comprehensive enough to address the multitude of interconnections and structural relationships that could be drawn from osteopathic assessment and treatment in the cranium. It is the hope of the author that the discussion of applied anatomy related to the sternum, neck, face, and cranium in these last four articles have made it clear that Osteopathy in the cranial field cannot simply be limited to the cranium, and must be seen as another part of the whole.

References

Pandula, Varun. *Junior Dentist*. ***N.p., 26 Dec. 2011. Web. 1 Nov. 2015.***

Powell, Thomas V., and Allan G. Brodie. "Closure of the spheno-occipital synchondrosis." *The anatomical record* ***(2005). Web. 2 Nov. 2015.***

G. Tortora, B. Derrickson (2011). *Principles of Anatomy and Physiology*. ***Wiley.***

The Words of "Drew" -- Andrew Taylor Still from the writings of Ernest Tucker and Dr. Still's personal notes

By Jason Haxton

Ernest Tucker was a student of osteopathy; he graduated and became a faculty member at the founding school in Kirksville. It was during the 17-year mentoring friendship with Dr. A.T. Still that Tucker wrote down a series of conversations about a variety of topics. Here are highlights of Tucker's observations and honest conversations with Dr. A.T. Still from the unpublished manuscripts. Items in quotations are A.T. Still's exact words, according to Tucker.

Dr. Ernest Tucker tells us that: Andrew Taylor Still's language is quite unique; a bit quaint; with over-tones of the Scriptures; a bit laborious at times.

"I have spent thirty years of my life reading and following rules and remedies used for curing [by the allopaths], and I learned in sorrow that it is useless to listen to their claims. I quote no authorities but God and experience."

Often it is difficult, not to be amused to the point of quite missing the intensity of inquiry, the wistful courage of it. But, if we will let ourselves respond to his feeling, we will realize an absoluteness of courage; we will realize the intellectual honesty also just about [as] absolute, certainly so in intent; and how deeply he has sunk himself into his problem.

We may even realize why he keeps the negative side of the picture before him because against it—the clues he did happen to find stand out.

Small they may have been, against any other background scarcely visible; and in other circumstances might have passed unregarded as indeed they were, and still are except where he has driven them home; but under the circumstances they loomed large; partly because they were the only clues that offered. Here is a reference about his discovery of osteopathy from an accident to a woman while slaughtering a hog.

A crooked rib; out from under the snout of a hog. But Still "pulled that bone" and out stepped a genie.

He straightened a defect, and out stepped a great principle of disease causation. These small clues proved to be the keys that fitted the keyhole to a new world of therapy. That was not yet apparent, at the time, except possibly to the intuitive genius of Still. Nevertheless he hammered it home. "A very large truth can come through a very small key-hole. How big is a germ?"

One gets the effect, somehow, of a much scratched up ground when there has been a wrestling match. Difficulties do arise when a simple idea that has wide bearings tries to squeeze itself through language, or even to filter its way through a single human brain.

Still apparently recognized, perhaps felt, this difficulty; for he tried always to get across the inside view, the right approach, the angle of origin (which is the angle of logic); and the reverse of the traditional objective view which sees nothing!

"I dislike to write, and only do so when I think my productions will go into the hands of kindhearted geniuses who read not to find quotations" (referring to the typical medical text of the day or those who look at grammar) "but to go with the soul of the subject that is being explored, for its merits; to weigh all truth and help to bring its uses to the front for the good of men".

"Thus to obtain results we must blend ourselves with and travel in harmony with nature's truths".

Or, in effect we must be that "bone".

"My idea has been to drive a system for exploration for causes of disease (italics Tucker's, Research and Practice, Dr. A.T. Still, p. 65).

The real meat of these books, however ornamented by philosophy, the real moral strength of them, is his patient thoroughness of search through the body for its disorders.

His books are fighting books. Behind the blows is a mind, and behind the mind is a motive, an intuition, a philosophy, inspiring the blows. That is what we want to get.

The real subconscious gravamen of his animadversions (criticisms) seems to deal with the method rather than the material, the philosophy or the lack of it rather than the acts. But, since neither the method nor the philosophy has changed much since then, his protests still apply. And that too, that lack of change, is something worth an effort to understand.

Still's protests are along two lines, both psychologic—that is delating to the psychology of the practice. I shall try to put them both in language that I think A.T. Still might have used: *"What does nature sees when it looks at collarbone? A key? A clavicle? No what it sees is a link, a spring link, between the arm and trunk."*

"What does life see when it looks at a bone? An "os" (latin for bone)? No, it sees a function of pressure resistance. An ulna is a hinge bone a radius is a pivot bone; that is the kind of thing that life sees. Does life think in Latin? No! Do we? Not so well! Does not the foreign language wrap up things in names so that we do not think about them at all?"

Of course I am no Still; but perhaps l get his feeling in my language.

Now of course there is need for names, a constant need for new names, in advancing science; for names; and there are the great Latin and Greek reservoirs, ready for the purpose. And there is the wonderful chance to make a system out of it—which we have done, very well too. My own contribution to this is that there are hidden effects from these; and these effects accumulate; and the end result is we are strangers to ourselves, and separated from an understanding of ourselves by a conceptual barrier that is hard to by-pass; an iron curtain of alien-ness.

The other protest has to do with the philosophy. That same alien-ness afflicts it. Familiar with the alien-ness, we easily accept; accepted practices that are completely alien in themselves. We think of those regulations under compulsion as curative. They do undoubtedly have their value; but—As A.T. Still might have said: "We make a key [drug] that will fit into a particular lock of the body; and what does it do? The key is dead, the body is alive. The living body cannot tolerate the dead key.

It either struggles violently against it (is stimulated) or it is knocked out and made helpless by it (is inhibited). We can make it either stop or go—that is what it looks like from the outside. But what is it like, seen on the inside? [1]

What now follows are A.T. Still's written words

"We the human race, have created all words used by men of all races. Some words are very expressive—easily remembered and to the point; other words are harsh in sound, hard to pronounce and hard to remember. Still… the habit of their use has been kept up with the idea that such words will help the speaker to be considered wise. He is an ass.

Words are such sounds as men select to label thoughts, a thing or action may be called by a short or long word.

Words are mental magnets used to attract and instruct the person to whom addressed "White" would not change to "Black" by calling it "Black".

Objects, not words. Subjects not chosen phrases. Brains not blanks.

A single word mean but little when taken alone.

It generally means an object, being, principal action, compound association, existence, or subject. We say Bible, Dictionary, History, News, Philosophy, Animal, Government, School, War. Such names are only a system of labels that men put on packages or of mental compounds.

The name only draws our attention to the fact that a new subject appears before our mental telescope for our acquaintance. A new planet that appears to the observer.

Without a name, [a thing] is just as valuable as those previously seen, studied and named: North, South, East & West, are only arbitrary names. We would be no wiser to be able to call them unless we could tell what E. N. W. S. meant as labels. But as soon as we learn that South is a point on the Earth. North is another point and at a different place we begin to know some part of the labels being different in name. So we see there is but little force in a name until we have studied the all of the subject to which the name as told you that a new subject has asked your attention.

All names are misnomers and alone can be nothing else.

We learn but little by names. Further than their historical value, which is good only to know the past methods whether successes or failures. The history of successful experiments and how performed do encourage to farther experimenting for greater and better results.

Books on subjects of philosophy must be couched in good plain English, not the flowery but the solid words. He who would take the time to or wishes to know why you think as you have asserted, is not the man to fancy words, such men are generally mental dwarfs—lovers of display is his god. While he who loves great thinking seeks your thoughts proven by demonstration. He cares but little for the words used, he wants knowledge and will listen, love and assist you. He fancies your will, ability and your success that your thoughts and work have given to the world. He sees that you deal in worthy facts and that he has been well entertained and his time has been well entertained and will kindly ask you to visit and exchange opinions, because he has found you to be a reality. A child of thought. And, worthy to be the guest of the sober man whose mind soars to the farthest star and is in his highest ideas of heaven when his cup is being filled with truth from the throne of God. The humble to the humble abode of the poorest, mortal of earth, wisdoms he want and is his greatest feast by day and by night—from everlasting to Amen.

When we read a book and learn what was in the mind of the writer we carry with us an active or sluggish impression of the author. If he says but little and tells much that will benefit us by its show of genius we feel proud that we have read the products of mental progress, but when we take up and read a book of many words who's only effect to tire our mental legs, grieve our minds with tears of pity for the bigot who's ignorance never had a wret [writing] large enough to let in a ray of light even strong enough to let him see that he was an ass colt". [2]

1 E.E. Tucker Papers [1997.04.119]
Title: "Still as Author." Hand-numbered pages 70 – 75.
Charles E. Still Sr., D.O. and Charles E. Jr., D.O. Collection©
Museum of Osteopathic Medicine and International Center for Osteopathic History.

2 Collection Name: Andrew Taylor Still Papers—handwritten notes [2009.10.172]
Title: "WE the human race have created all words used by men of all races." Museum of Osteopathic Medicine and International Center for Osteopathic History.

Why Are You Chasing that Rhythm?

By Samuel Jarman

There seems to be a fair amount of discussion in Osteopathy revolving around cranial rhythms, sacral rhythms, cerebro-spinal rhythms, long or short tides, and other rhythms that are claimed to require highly developed and sensitive palpation skills. It will be suggested that there is a large amount of disagreement in those discussions and a lack of firm proof with respect to the actual existence of any of those rhythms as they are commonly described. One challenge is that the descriptions are based on clinical experiences and language as commonly used; however, this language is not useful in relaying experiential sensations. That being said, chasing a rhythm requires filtering out all kinds of stimuli and relies on the possibility of the rhythm being able to appropriately stimulate a sensory nerve at a frequency that will translate to a palpatory experience. In essence, there are a lot of variables for the Operator to get a handle on. With the need to filter out so many stimuli and "tune in," there is a requirement of time and concentration not consistently available or reproducible. For an Operator who has the heart to heal and the hands to do the work, the large amounts of intently focused concentration required to find a rhythm is taxing. This means that Operators become too exhausted to be able to treat many patients.

Another common word attached to rhythms in Osteopathy is "inherent." The use of the word "inherent" suggests that the rhythms or tides being discussed are present in a patient no matter what the case. If the rhythm is interrupted, then it must relate to other areas that are interrupted in the patient. If you are reading this article, it is fair to assume you are involved in the Osteopathic profession, and to further assume that you believe the Osteopathic Lesion (i.e., Somatic Dysfunction) has a major role in the health of a patient. If the Osteopathic Lesion is characterized by a lack of dynamic function in a palpable anatomical structure, then that is something that can be proven and agreed upon. The sensation of a rhythm or a tide does not seem to be something that can be agreed upon or proven at the moment. If we truly regard a rhythm as "inherent" and the Osteopathic Lesion as a lack of dynamic function in an anatomical structure, then more valuable work may be done on the palpable side of the Lesion. This argument refers back to a quotation from Dr. Still in Philosophy and Mechanical Principles of Osteopathy when he says:

"It matters very little to man where mind, matter, and motion came from, the one place or the other. They are all in his make-up, and he is interested in keeping them all healthy. If he is a doctor, he is interested in quick cures, because his living depends on his success. The doctor does not have to furnish his patients mind, matter, or motion. His work is to keep the body adjusted so it can supply itself with brain and muscle; then mind

and motion will appear and keep the laboratory full of the choicest chemicals and free from disease. Healthy organs and food are what keeps a man healthy. The doctor can aid in keeping the organs in place. This he can do if he knows the forms and functionings of the different parts of the body. If not, he is of but little use or benefit to the sick."

Take the time to study the above quote. Not read. Study. Pay attention to everything said by Dr. Still's words. There is nothing unclear about what is stated above: know the forms and functions of the different parts of the body and keep them properly adjusted so that they are able to do what they are built to do. If they are properly adjusted, then any rhythm contained within them will take care of itself.

There is no clinical efficacy to be found in chasing rhythms. There is also a high likelihood that the general impact of a treatment that chases rhythm, mechanical or not, will be very low. The patient deserves to be treated efficiently and successfully. The Operator should also figure out how to be as successful as possible in as short a time as possible in order to keep their practice running.

If you are placing large amounts of clinical time on "inherent" rhythms, then that is your right as a professional. If you are placing large amounts of clinical time on "inherent" rhythms, then it is the right of your patients to judge your work based on efficacy. Patients respond well to changes that get results, and those tend to happen on the palpable side of the Osteopathic Lesion. Clinical success is harder to come by for Operators that chase "inherent" rhythms.

Why I Come Back to the CAO

By Sheryl Crotta, M. OMSc

Completion of the CAO Master of Osteopathic Manipulative Sciences (MOMSc.) program is a monumental accomplishment. Every student aches to get to the end of this grueling program. The osteopathic carrot dangles for 4-5 tough years.

Finally, upon graduation of the CAO program, you are granted the privilege to render osteopathic treatment professionally to your patients that have entrusted you with their health. Entering into this profession makes you a very fortunate individual as you are in a profession that is extremely rewarding, and you are now a powerful health professional that can do so much good for so many. Truly amazing!

So you are ready to go and start your private professional practice? When I set out into the world after graduation, I knew almost immediately I wanted more. I knew I needed to stay connected and to be a part of the CAO learning community. I had just left, and I wanted back in! I soon discovered there is no one who can truly understand you as an osteopathic practitioner or give you the opportunity to spread your osteopathic wings. It can be a lonely life in your office.

In August of 2011, after my final paper was presented, I was set to graduate. I was finally finished, only to realize I was merely at the beginning of my osteopathic career. My teacher training began in September 2011.

The CAO teacher training program offered the opportunity to develop and grow professionally and personally. As you all know, growth and development only occurs with exquisite discomfort. But it is the best thing for you and your development.

Development also takes time. Time to attend many, many modules, to watch, to assist and to work on whatever needs to be done. And after all that, it's time to go for a swim in deep water. It's time to start to teach.

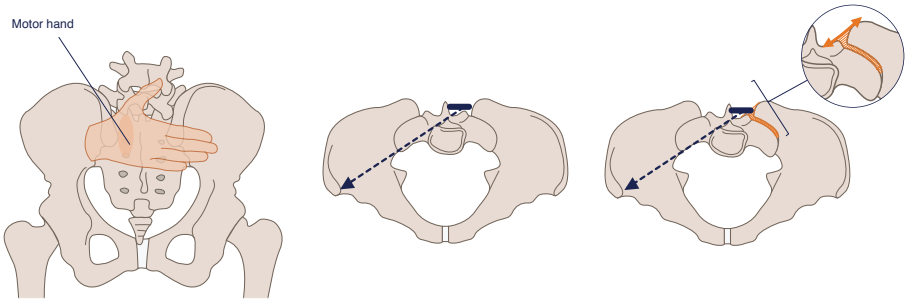
Incredibly, after a long while, you start to discover you know a thing or two. You start to hear your own voice as you speak to students, and you hear confidence and strength in yourself. It is amazing to realize YOU CAN DO IT. As you teach, you discover that your students are your teachers, humbling you constantly.

The process of learning how to explain concepts and principles of Osteopathy is challenging enough. However, to very smart, eager, committed students, it is yet another incredibly challenging but important learning opportunity.

Learning Osteopathy is a daunting task, and probably will be one of the most difficult undertakings you will ever experience. Teaching affirms your understanding of Osteopathy—and will let you know your weaknesses. Teaching at the CAO allows you to develop osteopathically and personally for the rest of your life.

General **Osteopathic** Treatment

Robert Johnston



Landmarking
Place the thenar eminence on the lateral aspect of the sacrum. There is full hand contact.

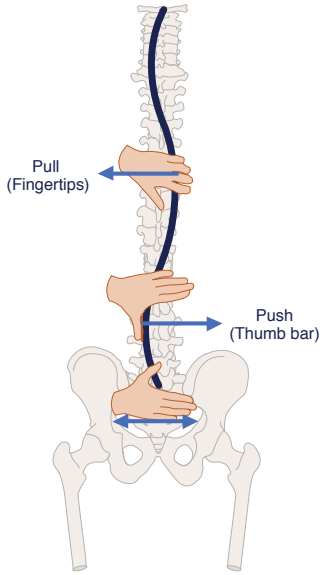
Direction of Force
Using a steady, rhythmic pulse, the operator creates a rocking motion from his body that transfers through the arm and hand to the sacrum. The force is applied towards the ASIS on the contralateral side.

Effect
A separational strain is induced between the sacrum and the innominate at the sacroiliac joint.

The two schematics presented here are excerpted directly from the 2nd Edition of Robert Johnston's

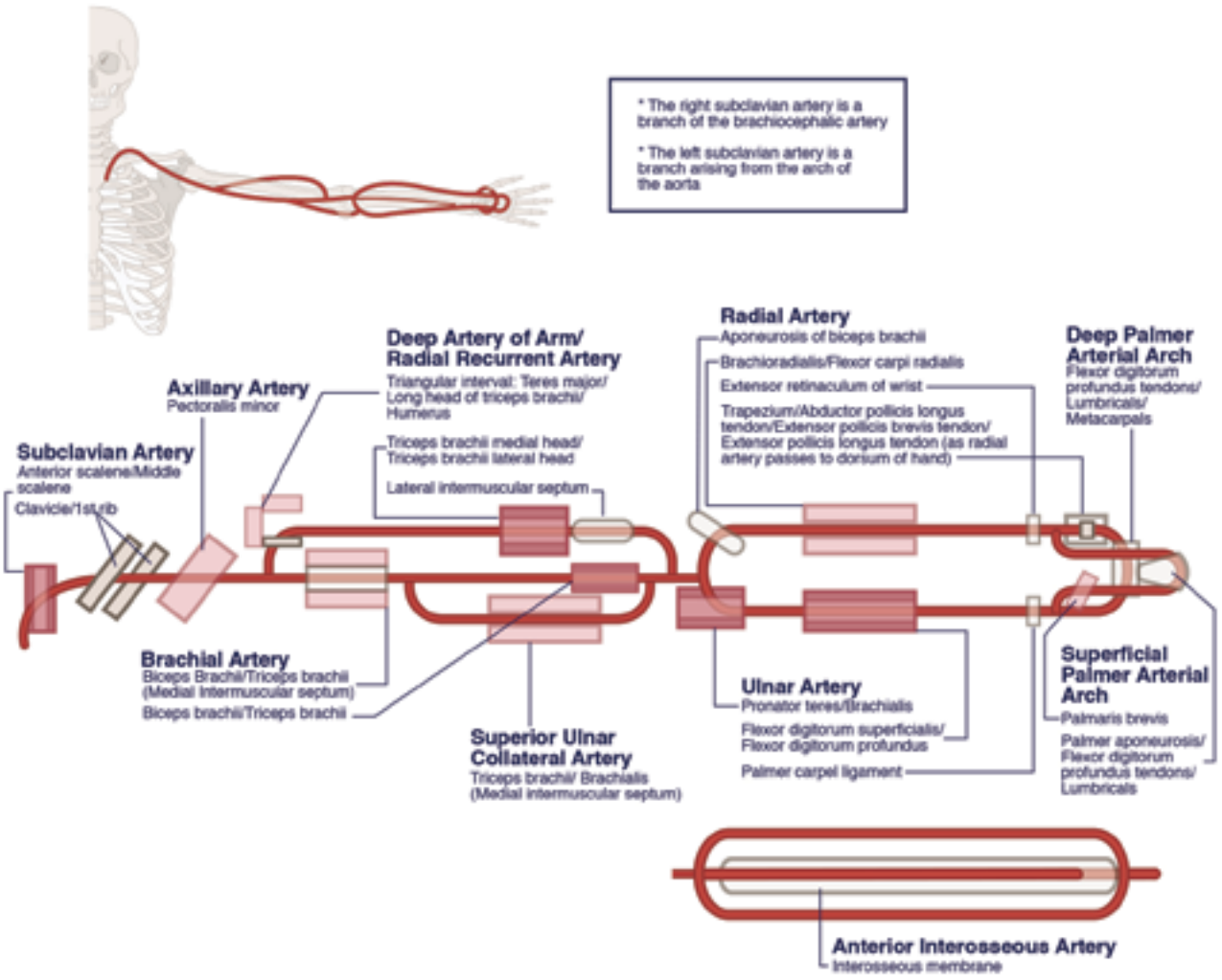
General Osteopathic Treatment.

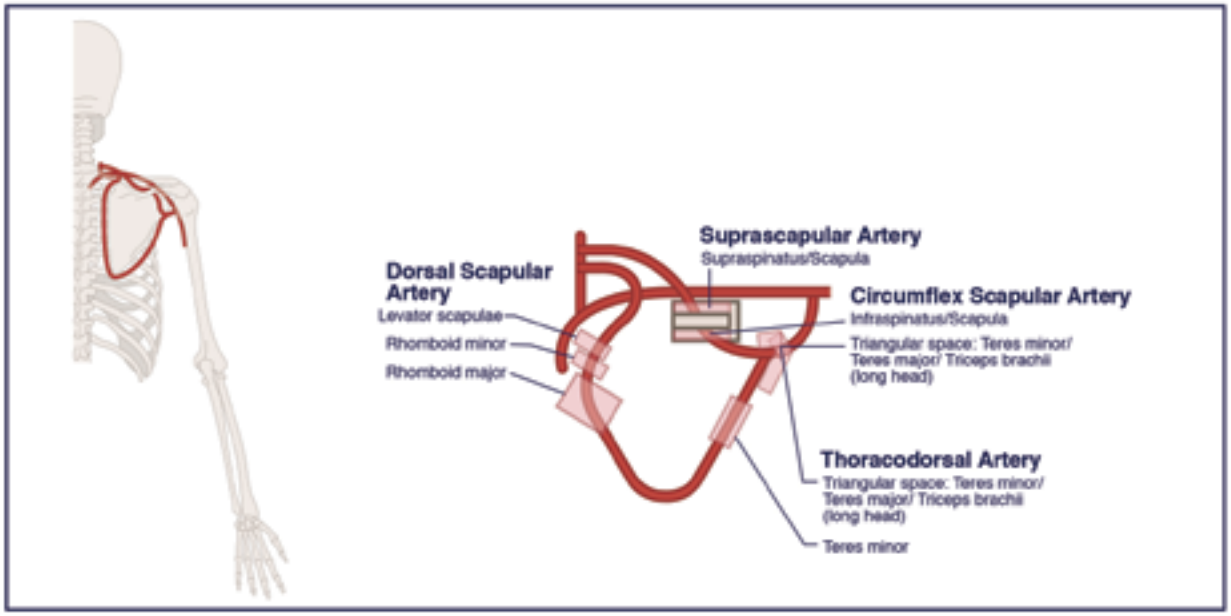
As part of the revisions and additions, new schematics have been created to supplement the connections between an Operator and a patient through anatomy and mechanical principles. Enjoy these schematics as a preview of what is contained within the 2nd Edition.



Application of Two Motor Hands
The operator places a fixed point in areas where restricted motion is palpated. With the movement of oscillation, the operator aims to direct the force of movement to the fixed point. The operator can guide the vertebral segment by adding a push with their thumb or a pull with their fingertips in order to induce a convexity or concavity.

Using the motor hand placed on the sacrum, the operator may apply their force towards the direct or indirect barrier.


* The right subclavian artery is a branch of the brachiocephalic artery
* The left subclavian artery is a branch arising from the arch of the aorta
Subclavian Artery
Anterior scalene/Middle scalene
Clavicle/1st rib
Axillary Artery
Pectoralis minor
Deep Artery of Arm/ Radial Recurrent Artery
Triangular interval: Teres major/ Long head of triceps brachii/ Humerus
Triceps brachii medial head/ Triceps brachii lateral head
Lateral intermuscular septum
Radial Artery
Aponeurosis of biceps brachii
Brachioradialis/Flexor carpi radialis
Extensor retinaculum of wrist
Trapezium/Abductor pollicis longus tendon/Extensor pollicis brevis tendon/ Extensor pollicis longus tendon (as radial artery passes to dorsum of hand)
Deep Palmer Arterial Arch
Flexor digitorum profundus tendons/ Lumbricals/ Metacarpals
Brachial Artery
Biceps Brachii/Triceps brachii (Medial Intermuscular septum)
Biceps brachii/Triceps brachii
Superior Ulnar Collateral Artery
Triceps brachii/ Brachialis (Medial intermuscular septum)
Ulnar Artery
Pronator teres/Brachialis
Flexor digitorum superficialis/ Flexor digitorum profundus
Palmer carpel ligament
Superficial Palmer Arterial Arch
Palmaris brevis
Palmer aponeurosis/ Flexor digitorum profundus tendons/ Lumbricals
Anterior Interosseous Artery
Interosseous membrane


Suprascapular Artery
Supraspinatus/Scapula
Dorsal Scapular Artery
Levator scapulae
Rhomboid minor
Rhomboid major
Circumflex Scapular Artery
Infraspinatus/Scapula
Triangular space: Teres minor/ Teres major/ Triceps brachii (long head)
Thoracodorsal Artery
Triangular space: Teres minor/ Teres major/ Triceps brachii (long head)
Teres minor

Intention by Robert Johnston

Excerpt from his new book *Class Notes*

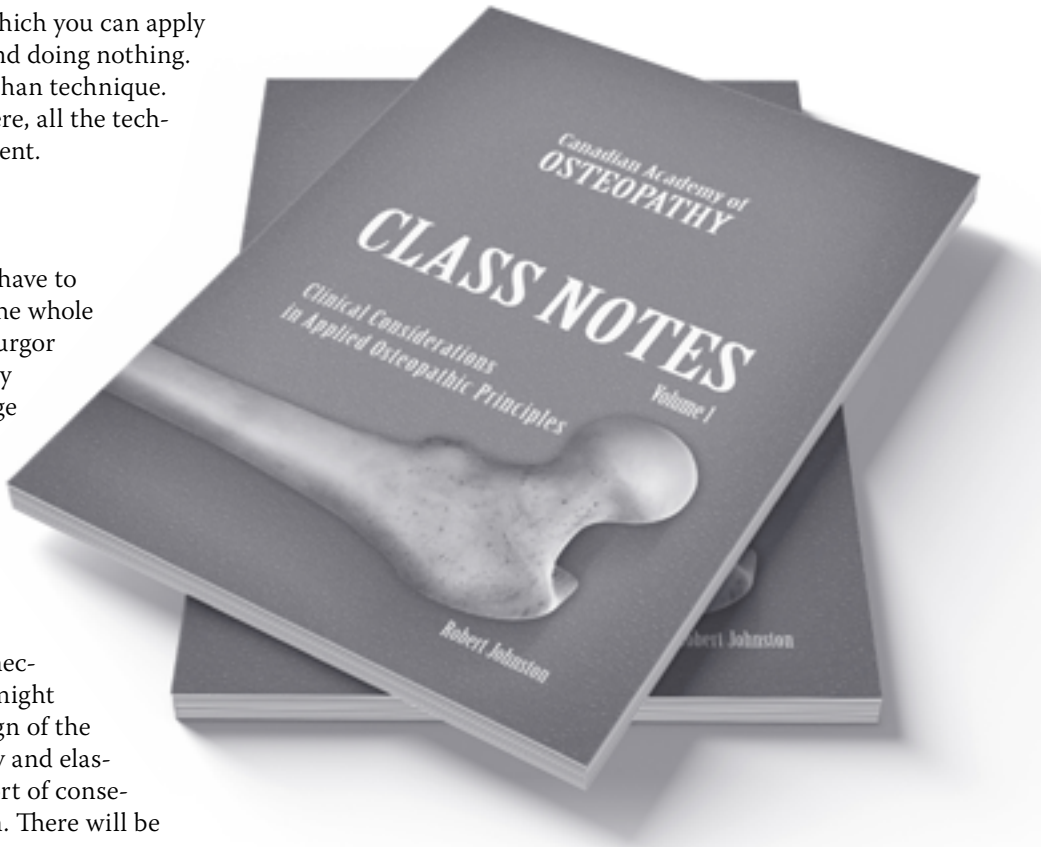
Generally, Osteopathic theory says to work from the spine back out into the rib. I can argue or make a point for using the rib to affect the spine, as a lever. That's not wrong in principle because the objective is still spinal adjustment. Principally I would agree with that. You are still working from central to peripheral. Working soft tissue before hard tissue is really a global, local, focal thing. When I'm doing a turn on the table, or a walk away, I'm distal to the spine but the intention is to effect the spine. So please make the mental change immediately. It's the intention of what you are doing, not just where you put your hands. My intent is to adjust the base from the shoulder. That's the intention. That's my thought process, my methodology. You don't necessarily need your hands on the pelvis to affect the pelvis. The lat attaches to the pelvis, you can use that lat line to influence the pelvis any way I like. There are many ways I can create a force that is really meant to hit the pelvis without having my hands on the pelvis. Adjusting the vertebral column anywhere along the line can remove tension on the dura mater including adjustment of the cranium or the sacrum. Does that make sense? If that concept doesn't make sense in any way then Osteopathy in the cranial field makes no sense whatsoever. You can adjust the cranium to affect sacrum both neurologically and mechanically, it's the same concept. If we don't adhere to those principles then the body is not a dynamic unit of function. It's the intent, the methodology, the understanding. You need to have principles but you also need a context in which to place them. You need understanding from which you can apply them or they just sit out there in nowhere land doing nothing. That's why treatment is far more important than technique. Within a treatment, all the principles are there, all the techniques are there. It's all packaged in a treatment.

Obstruction and Consequence

So thoracic mobility is very interesting. You have to think 3D to really get your head around it. The whole concept and theory of fluid mechanics and turgor pressure pressing from the cavity out are very interesting. Then you have the idea of the cage acting like a spring and the challenges of having an uneven load on the spring. For proper function of the thoracic region, the elastic tissue needs to be elastic or it begins to act like a bone and that's not good. If the costo-chondral margins begin ossifying and become less elastic we have a problem. What kind of pressure is being unnecessarily placed on the heart and lung? How might that relate into a pathology? If the basic design of the thoracic region is designed to create mobility and elasticity in the cage then there must be some sort of consequence to the loss or reduction of that action. There will be some consequence to that perhaps sooner or later. The way that shows up and how long it takes for it to show up will depend on the constitution and vitality of the patient. The ability to say there will be some consequence is a reasonable thing to say, anything above and beyond that is currently supposition. There is a good reason why I don't bring up long winded stories and making absolute claims. Right now there is no accurate way of measuring the effect and outcomes of treatment. We know the design of the thoracic region is to allow for elasticity and mobility. If there is loss of that function then there will be changes in pressure gradients and that will have an effect on the movement of blood as well as the function of the lungs as both need specific pressure gradients to work appropriately. If you lose the mechanical function anywhere then there is a consequence physiologically.

The science person will say "prove that". I can prove that empirically but I don't have 100 million dollars. Through clinical experience I can say that every time I see a patient with a heart problem the thoracic cage is non-compliant. The ribs are forward, backward, twisted, or some combination of all three. All of the patients I see with heart problems show me thoracic cages that are just a mangled mess. What does that do to surfactant? What does that do to the lung itself?

I love the simplicity of Still's works because he thought about them. It's an obstruction. That obstruction has a consequence.



Lessons from South of the Border: Use Your Whole Hand

By Samuel Jarman

On the weekend of September 13 – 14, 2015, Dr. Charlie Beck presented a lecture to CICO members on cranial sutures. There was a wonderful assortment of presentations, accompanied by in-depth anatomy and hands-on table work.

As with any other CICO event, it is important to identify the underlying principles that apply to any situation or any area of the body. The most important information that came through consistently was that Operators should pay attention to their whole hand. Any time Operators place their hand on a patient, they are contacting a broad range of anatomy from which sensory information is attained—information that is detected from every part of the hand. Therefore, Operators need to pay close attention to palmar (and even dorsal) sensations.

Key to the idea of paying attention to the hand is the Operator's understanding of the full span of anatomy that their hand is contacting. When Operators know all pieces they are touching, they can shift their attention around their hand as needed without moving it. When scanning the whole hand for information, Operators can choose where to focus their contact to make an adjustment, as well as where to move their hand as required.

The area of focus does not need to be at the fingertips; as stated above, it can be anywhere on the hand. If this principle is applied, it will help any Operator move from diagnosis to treatment seamlessly because the hand may move far less. An added benefit: a hand that moves less is more calming to the patient.

Instead of focusing on the specific content of Dr. Beck's wonderful lecture on cranial sutures, it would be beneficial to take the underlying idea of paying attention to your whole hand and apply that to all areas of the body through diagnosis and treatment.

GIFTS **ABOUND**

By Katie Hubbard,
MBA, A.T. Still University

On Sept. 30, outside the doors of the Museum of Osteopathic Medicine, ATSU staff joined with more than 50 visitors from the Canadian Academy of Osteopathy (CAO) to celebrate a relationship dedicated to preserving osteopathic history and tradition. The CAO, which financially supports ATSU and the museum annually, is a school based in Hamilton, Ontario, that provides its students with a principles-based classical osteopathy education.

On behalf of ATSU, Kirksville College of Osteopathic Medicine Dean Margaret Wilson, DO, '82, welcomed guests and thanked them for their generous support of the University and the profession. She then presented CAO Principal Robert Johnston, M OMSc, with the Honored Patron Award for his outstanding service to ATSU and philanthropic support of its programs. Johnston, who continually supports the University, has also encouraged others, such as the Ontario Osteopathic Association and the CAO's Student Government, to give to ATSU.

> ***"My compass has been Dr. Still and Kirksville," said Johnston. "This profession means everything to me."***

While the giving award was the focus of the gathering, both the CAO and ATSU had more gifts in store for each other. Upon receiving his award on behalf of the CAO, Johnston in turn gave an additional $10,000 to the museum, promoting the continued preservation of historic artifacts and spirit of A.T. Still, DO. Because of ATSU and the CAO's shared love of history, Museum Director Jason Haxton, MA, gave the final gift by presenting Johnston and the CAO with a chair handcrafted by Dr. Still himself.

Image: Haxton and Johnston

> ***"Giving is a part of the osteopathic tradition and history," Johnston said. "The more you give, the more you get back."***

Museum Director Jason Haxton presents Robert Johnston and the CAO with a chair handcrafted by Dr. Still.

Lessons from South of the Border: Focus on the Patient

By Samuel Jarman

On the weekend of August 22nd and 23rd, 2015, Dr. Kelly Halma presented a lecture on indirect methods to CICO members. Dr. Halma works in the OMM department at the Kirksville College of Osteopathic Medicine.

There was a very important message that Dr. Halma repeated to those in attendance: always put your patient before your pride. Regardless of the technical tool used, regardless of the system that an Operator is working within, and regardless of the experience and credentials of the individual, the patient's safety and well-being are primary. Patients approach treatment with a problem, and the Operator who is working with them takes on the responsibility of helping those patients by addressing the problem. The aim of osteopathic care is to advance the state of health in the patient, and not the prestige or renown of the Operator.

Dr. Halma also provided another message that was useful in a clinical context. During the early part of his career, Dr. Halma was working with an experienced colleague that told him "It is not your job to heal the patient; it is your job to deliver the best treatment you are able to, and then it is up to the patient to do the healing." This message reinforces the concept that the body has self-healing and self-regulatory mechanisms.
This message also echoes the osteopathic axiom of "find it, fix it, and leave it alone."

If we compare the two messages mentioned above, it can be said that the progress of the patient is dependent on the Operator to provide the best treatment they can offer, but that the pride or ego of the Operator can hinder that treatment.

Through quite a bit of clinical experience, Dr. Halma was able to make clear that the patient is primary in the practice of Osteopathic Manual Therapy. Because they are the administrators of treatment, Operators are important and need to care for themselves; however, the delivery of that treatment requires that patients receive care that sparks their self-healing capacities.

Going Home

Back to the Roots of Osteopathy

Kirksville Missouri

By Natalie Kipling

Kirksville, Missouri. If you mentioned these two words to me four years ago they would have no meaning. Today, these two words have changed my life forever. This past September I was blessed with the opportunity to visit Kirksville, the birth place of Osteopathy. The majority of my graduating class at the CAO decided to make the pilgrimage to the MECCA of Osteopathy, to where it all began. Without a doubt, it surpassed my expectations. Honestly, it was the trip of a lifetime and the perfect way to celebrate the completion of four years of education at the CAO. Not only did I climb the CAO mountain; I reached the summit in Kirksville.

If a common thread can be identified throughout the entire trip, it is that A.T. Still's spirit is alive in Kirksville. The trip had so many amazing moments that were woven together seamlessly, thanks to our host Jason Haxton. For those of you who don't know Jason, he is a historian and director of the Museum of Osteopathic Medicine at ATSU (Andrew Taylor Still University). He truly has a gift of making stories come alive. Jason made our experience so special right from the moment we set foot in Kirksville, to the moment he shared farewell hugs before we boarded our bus back to Canada.

After a long journey from Hamilton to Kirksville (a fifteen-hour bus ride), we spent our first evening outdoors enjoying a picnic dinner at Blanche's farm (the daughter if A.T. Still), and embracing nature as Still did almost religiously. As Still says, "The Osteopath who succeeds best does so because he looks to Nature for knowledge and obeys her teachings…" (*Osteopathy Research and Practice*).

The very next day we traveled to ASTU, which is rich in history and artifacts.

We explored the Museum of Osteopathic Medicine and touched the walls of the Still family home and the original school house. We continued our journey through campus and ended up at the cemetery, walking along a cobblestone path that led to the gravesite of A.T. Still and his family. At the gravesite, small memento stones were placed by visitors as gestures of gratitude and commemoration. We continued our journey to the town square, to the court house, and to the original practicing office of A.T. Still atop Charlie Chinn's Hardware Store. There was something truly magical about walking the streets of Kirksville.

Our next day we were able to take in the campus and appreciate the scale of osteopathic education offered by Andrew Taylor Still University. We observed the massive Osteopathic Manual Manipulation lab and Ultrasound lab, which is so large the instructor is video recorded and projected while demonstrating the manipulation technique. In the afternoon we toured Macon and visited the Hildreth Sanitarium, an absolutely stunning work of architecture. Dr. Hildreth was gifted the Sanitarium by A.T. Still as a facility for mental health patients. Doctor Still had a vision of improving the quality of life for these individuals; part of that vision was to create an inviting environment, offer nutritious meals, and provide daily physical activity. Patients also received osteopathic treatment three times per week.

That evening we were invited into a local Amish home where we were embraced with open arms. We were humbled by this family and their simple, hardworking way of life, and were overjoyed to administer osteopathic therapy to the men, women and children of the household. It was wonderful to give back and offer our services, just as A.T. Still used to do.

Our very last day was so special for the CAO and Rob Johnson. The university Dean, Margaret Wilson, honored Rob for his contributions to Osteopathy with the Honored Patron Donor Award. The museum also thanked Rob for his generosity by giving him some very special gifts: a chair that was hand-crafted by A.T. Still himself, and a painting called the *Healing Touch*.

We were all truly touched by the hospitality of everyone at the university. The spirit of A.T. Still is alive and well in Kirksville. All of us who made the journey were lucky enough to take a piece of it home in our minds and hearts.


GOING HOME
KIRKSVILLE
2015
Pilgrimage to the founding Campus of
OSTEOPATHY
September
27th to 30th

MEMORIES of Missouri

By Baljeet Soor

During the last week of September, 2015, 52 students and staff had the privilege of touring the grounds where Osteopathy found its roots. As a new graduate of the Canadian Academy of Osteopathy, I took in every bit of history pervading the trip to Kirksville, Missouri. It's not just a cliché when they say, "You can't really know where you're going, until you know where you have been." Over the past 4 years, I have listened to countless stories and lectures of this almost mythical place where it all began, and of all that occurred in the time of A.T. Still. Yet being there in person—literally walking in the footsteps of the early Osteopaths and their humble beginnings—was no comparison to merely hearing about it.

As we arrived in Kirksville, we were greeted with warm smiles and welcoming gestures. I immediately felt at home, as if I have been there a million times before. After settling into the quaint surroundings, Jason Haxton, our guide, whisked the students away to a beautiful setting called Thousand Hills State Park, formerly Blanche Still's farm. This was an enchanting start to a memorable trip. We munched on pizza and listened

to Jason's captivating stories of Osteopathy's origins while taking in a view overlooking clear waters, a lunar eclipse ornamenting the scene. What a magical night, to say the least.

Visiting the Museum of Osteopathic Medicine was such a memorable experience. Being able to see all the different components of history that occurred during that time was remarkable. I think it is important for Osteopathic practitioners to physically see the history of Osteopathy; it helped me understand what the people in those times had to overcome and where they left the torch for future generations to carry. It is something everyone in this profession should do at least once. The most unforgettable part of the museum trip was seeing A.T. Still's first home. The essence of Still's character and his origins were suffused in everything we saw—some things that books can only begin to describe. It was humbling to see what was going on around A.T. Still during his lifetime and how he embraced his passion, no matter what anyone else thought about it. He was truly a man of courage.

Walking down the streets of Kirksville felt like I had stepped onto a set of a Western film. I loved the original building structures, the simple restaurants, the local shops, and of course the central part of town: the local Courthouse. The students were able to enter the courtroom, sit in the original fold-down wooden chairs, and learn some of the history of the Courthouse from the presiding Judge. Just outside the Courthouse is a statue of A.T. Still, which monumentalizes his contributions to the town and the field of alternative healthcare as we know it today.

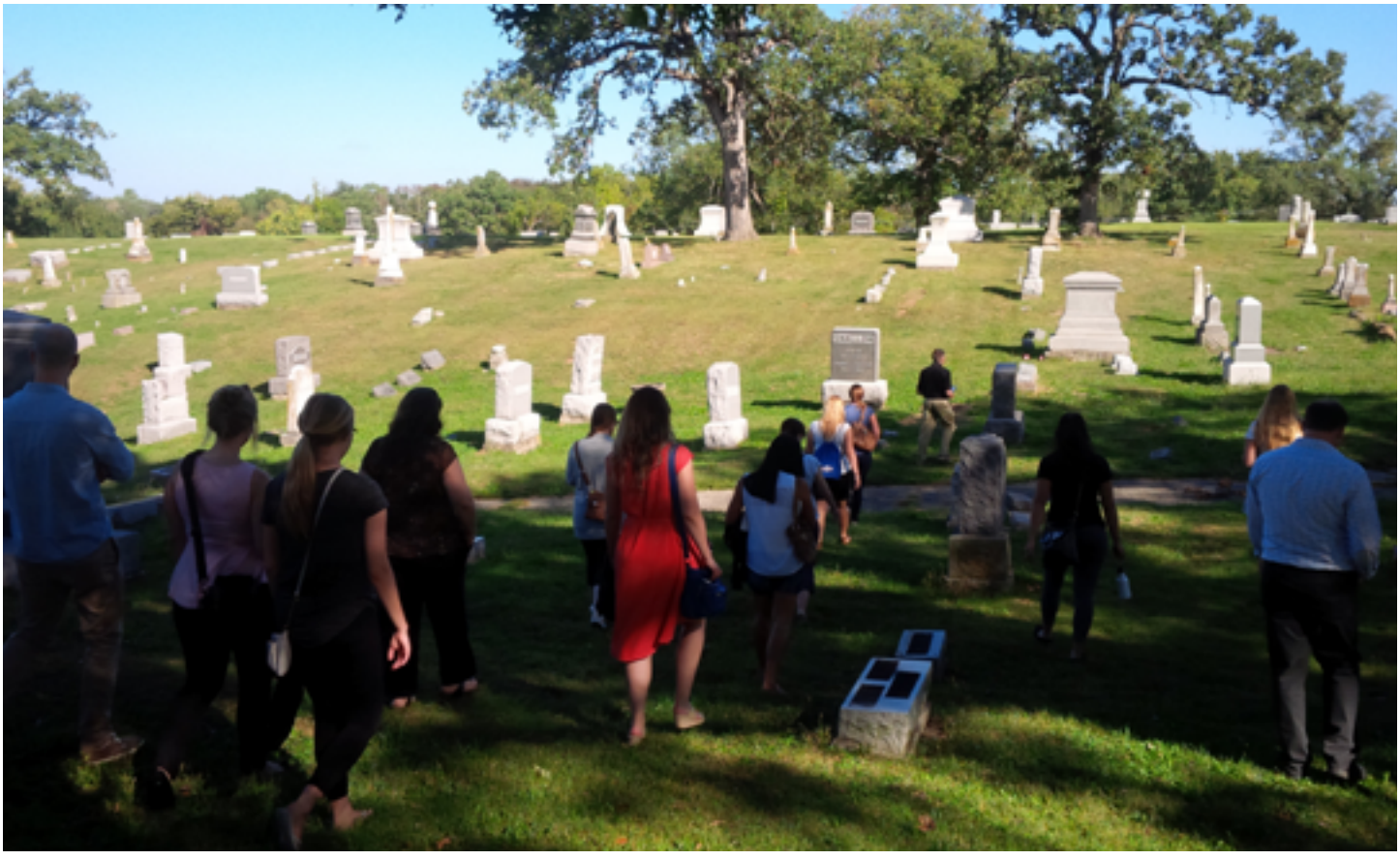
Other highlights of the trip included visiting the A.T. Still University, where we sat in on a few OMM classes, operated ultrasound machines, and interacted with students in the Human Patient Simulation Centre. We even had the opportunity to assess pulses on one the University's latest models, a simulated pregnant patient. The ATSU is a beautiful facility, surrounded by green hills, trees and an herb garden outside. We had some fun sampling herbs, such as Boneset (how fitting!). Jason Haxton explained how these herbs were used—and are still used—to assist in many common ailments of Still's and today's time. The students and staff at the University were so welcoming, and I had a great time coasting the hallways and the gift store. Many of us came home sporting some ATSU attire to remind us of our time there.

Thanks to our wonderful tour guide Jason, we had the opportunity to visit the gravesites of A.T. Still and his family. The cemetery is situated on beautiful green rolling hills alongside a cobblestone pathway, and overlooks what used to be A.T. Still's property. As we paid our respects at the tombstones of Still and his family, I felt a great deal of gratitude. If it weren't for A.T. Still's passion and persistence, none of us would be walking down this path in life.

The trip was not complete without visiting an Amish community just outside of Kirksville. I had never been to an Amish community and wasn't sure what to expect. However, as soon as we arrived, we were greeted by some amazingly quiet and well-behaved dogs outside the home. The homes we were invited into were just as warm, and the families were very welcoming. Students had the privilege of treating the men, women and children of the household. All of the people we met were so wonderful and made us feel right at home. Working with this community was a great opportunity—and an awesome way to end the trip.

As I leave the nest and start my journey in this profession, I find myself thankful that I had the chance to end my school years with this trip. I can appreciate all the wonderful details of Kirksville and Macon more now than I would have in my first year at CAO. Not only was it educational and introspective, but I also had a terrific time hanging out with classmates who have been through the last 4 years at CAO with me. No one else will understand how important it is to have fellow practitioners who know what you have been through and have the same passion for Osteopathy as you do. We, at the CAO, share the love for Osteopathy and what it stands for.

I would like to end this article by thanking the Canadian Academy of Osteopathy for giving the students the opportunity to go to Kirksville. Not to mention that the trip was guided by the person who knows more about A.T. Still than anyone else today. Thank you to Jaxon Haxton and everyone that assisted in making our trip so memorable.

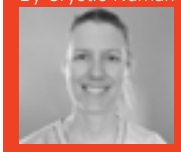


Understanding A. T. Still

Better through His Biblical References

A.T. Still's religious background is often referenced throughout his autobiography. As the son of preacher, who also did some circuit riding himself, he was well-versed in the Bible, and often alluded to stories or verses to make his point in his* Autobiography *(1897).

By Crystle Numan



Crystle Numan is a second-year student at the Canadian Academy of Osteopathy. She grew up hearing the stories of the Bible and is still an active participant in her church in downtown Hamilton. When not studying or practicing Osteopathy, she may be found with her husband and three-year-old daughter on the Hamilton Bay, sailing their sailboat.

Joshua

One recurring story—and a name mentioned more than once—is that of Joshua (chapters 11, 19 and 27). Joshua, named in both Deuteronomy and his eponymous book, was chosen by Moses to be his successor after Moses was told he would not lead his people, the Israelites, into the Promised Land. While Moses has liberated the Israelites from slavery in Egypt and led them across the desert, the task of conquering the land of Canaan (the Promised Land) and setting up there would be left to Joshua.

Since Still names his son Joshua (his son being an anthropomorphized "Osteopathy"—see chapter 11), perhaps Still was placing himself in the role of Moses, called by God to liberate people from the slavery to medicine and drugs. Yet Still could only begin this task, and had to leave it to a successor—Osteopathy—entreating us to remain true to its purpose.

In chapter 11, Still tells Joshua, his "son," to "command the sun and moon of death to stand." During one of Israel's battles against their enemies in Canaan, Joshua asked for the sun and moon to stand still so he could have time to completely destroy his enemies during daylight, when he could see them (Joshua 10:12-14). Later on in his autobiography, Dr. Still has complete faith Joshua (Osteopathy) "would soon command the suns and moons to stand" (chapter 27).

Throughout the rest of chapter 11, Still lists enemy after enemy whom Joshua fights and destroys. The first chapters of the Book of Joshua comprises a list of all the tribes conquered by Joshua to clear out the land for the Israelites.

Still asks of us a strong response to Osteopathy in chapter 19: "Choose this day whom you will serve." This is a direct quote from the end of the book of Joshua, when an elderly Joshua, after re-telling the people of Israel everything God had done for them, asks them to choose whether to keep all the commandments of God or whether they would not.

Interestingly, the people of Israel responded affirmatively: "The Lord our God we will serve, and him we will obey" (Joshua 24:24); yet the very next book of the Bible, Judges, lists *ad nauseam* the next generation of Israelites not following the commandments and turning to other gods. In some ways, it seems that Osteopathy's history followed a similar course once Dr. Still passed away. Throughout the rest of the story of Israel, the people continually turn away from God—who perpetually offers them forgiveness and another chance—until a new Saviour is born: Jesus, who is actually a variant of Joshua.

Jesus

Dr. Still used a few references to Jesus, yet these almost seemed hyperbolic, and were a bit humorous to read. They did not, in other words, help to build his argument. He likened his own birth to Jesus's in chapter 30. There was a special star in the sky and a visit by Magi (wise men) from the East in the Jesus nativity story (Matthew 2). Still spoke of his own birth by saying, "there was something strange appeared about three miles west of Jonesboro. The wise men of the East and the women of the West were called together." In chapter 26, Still claims that one of Jesus's miracles of healing was osteopathic: "When Christ restored the withered arm, He knew how to articulate the clavicle with the acromian process, freeing the subclavian artery and veins to perform their functions" (Matt 12:9-14 and Mark 3:1-6). These somewhat notorious comparisons, in which Still likens himself to messianic figures, are quite interesting.

Paul

In chapter 9, Dr. Still further likens himself to the Apostle Paul, who was known for reasoning with people to convert them to followers of Jesus Christ. Dr. Still then likened Macon to Athens, where Paul had preached. Athens was a city full of people who discuss new ideas, and Paul found they even had a shrine to "The Unknown God" so that they wouldn't offend any deity they might have missed. Paul called them ignorant of the thing they are worshipping—but that he, Paul, will now tell them about this God. In the end of his debate with them, some sneered at Paul, but a few became converts. Paul then carried on to Corinth, where a large church was initiated, and where he was the recipient of two large letters that became two books of the Bible.

In the same way, much of Macon was against Dr. Still: some had even said he was from the devil and, like others at that time, looked for any drug or poison to cure them, even if they did not understand it. There were a few in Macon who believed in what Still was doing, and he was later welcomed back. But initially

they pushed him out, and from there he went on to Kirksville, where he stayed and built his practice and later the ASO. Dr. Still said of Macon: "They weep and mourn because they did not know a truth from a lie" (chapter 9).

Lazarus

In chapter 19, Dr. Still likens Osteopaths to the parable of Lazarus, whereby the profession receives only the crumbs the medical world would give them: the incurable cases.

Jesus told a parable about a poor man named Lazarus, who longed to eat only the crumbs that would fall from the rich man's table. After both men died, the poor man was with Abraham (and therefore God), and the rich man was in the place of the dead. In torment, the rich man first requests that Lazarus dip his finger in some cool water to relieve the torment of the flames. This alleviation is denied, with the retort "remember that during your lifetime you had everything you wanted, and Lazarus had nothing. So now he is here being comforted, and you are in anguish" (Luke 16:25). Then the rich man asks that the poor man be allowed to return to the land of the living to warn his five brothers, so they too will not end up where he is. This request also is denied, saying they wouldn't even be persuaded by someone who rose from the dead.

There is much more in Jesus's parable than the portion Dr. Still references, but perhaps some of this story was in his mind when making mention of Lazarus.

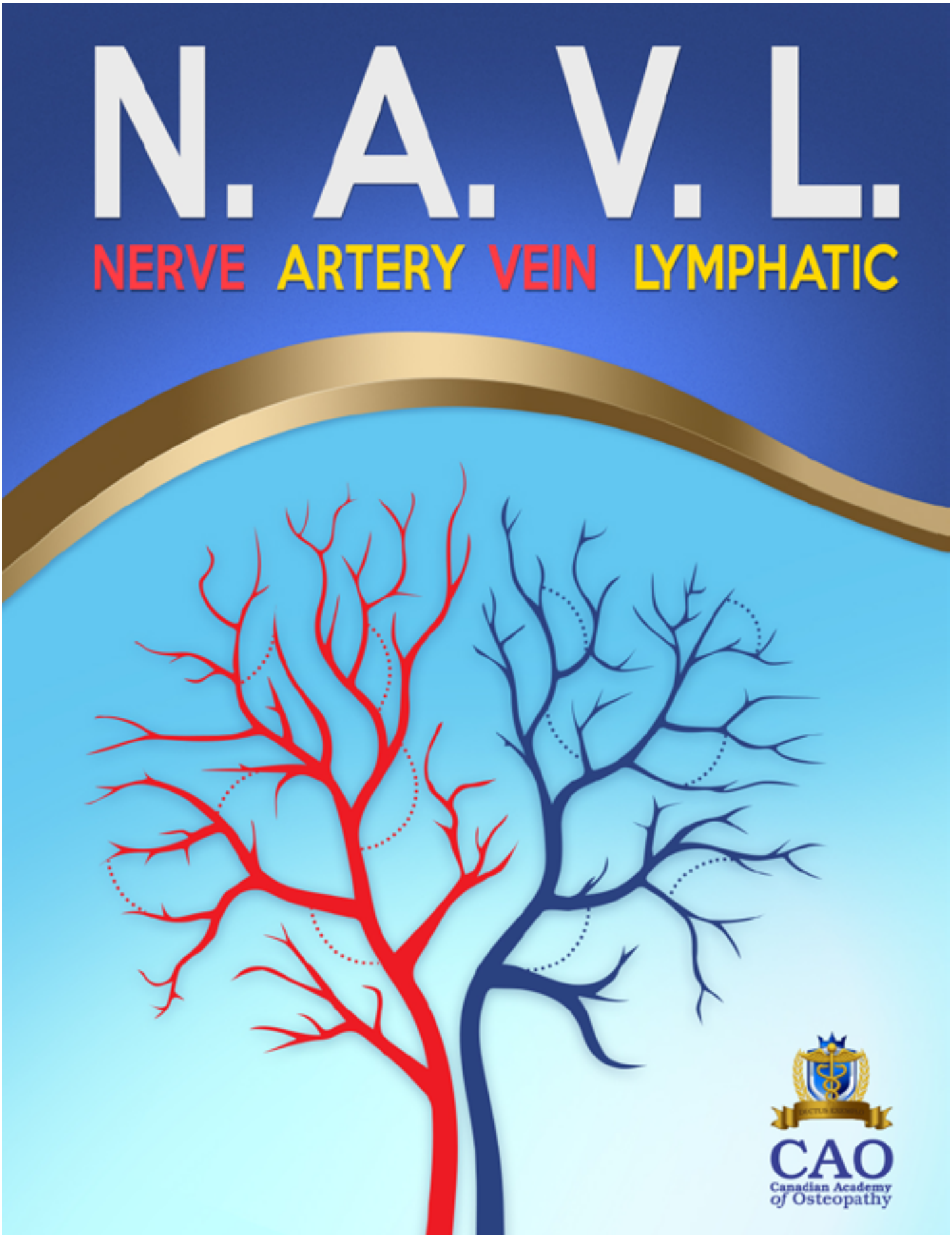
Threading It Together

Still certainly seems to craft his words carefully, and each of these Biblical references would have been understood by his contemporaries to have deeper meaning. To better understand what Dr. Still was saying, it helps to be familiar with the background to his references.

At the end of chapter 25, Still entreats Osteopaths to "Let your light so shine before men" (*Autobiography*) "…in such a way that they may see your good works, and glorify your Father who is in heaven" (Matthew 5:16). Still then closes that chapter with adding "One science" to what was an early statement of faith or creed of the Christian church: "There is one Lord, one faith, one baptism, one God and Father of all, who is over all, in all, and living through all" (Ephesians 4:5). It comes directly after the Apostle Paul is encouraging the church to remain unified, which is still relevant for our context today as Osteopaths.

All Scripture passages are taken from the New Living Translation, Tyndale House Publishers Inc. (1996).

All chapter references take from *Autobiography of A. T. Still*, Andrew Taylor Still, D.O., (1897), accessed online at http://www.mcmillinmedia.com/eamt/files/still3/st3cont.html.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