A Periodic Table of Functional Methods

By Jeffrey Burch, Certified Advanced Rolfer™

Functional Methods Six-Factor Model: Introduction

Andrew Taylor Still[1], the creator of osteopathy, focused his treatments on both position and mobility. Position is never static; rather everything constantly moves within appropriate range. Still recognized that body components had to be mobile before they could be moved. During Still's last years – and more strongly after him, during the first half of the twentieth century – osteopathy became focused on position, largely forgetting mobility. Then in the 1950s there was a revival of appreciation of mobility as a partner equal to position.

In 1954 osteopath Harold V. Hoover made a watershed presentation to the American Osteopathic Association (AOA) about the importance of mobility in treatment. As part of this presentation, and the subsequent publication in the AOA journal, Hoover (1956) described new treatment methods focused on tissue mobility. Hoover referred to these new methods as *functional methods*, functional in this context referring to appropriate movement in the body.

Hoover brought us back to A.T. Still's frequently repeated statement that life is motion. Since 1954, osteopaths and others in North America and in Europe have developed many different functional methods. Methods in use now include Hoover's original centralizing technique; pure unwinding; augmented unwinding; alternate interrupt; direction of effort – single dimension; direction of effort – stacked dimensions; direction of ease – single dimension; direction of ease – stacked dimensions; mixed ease and effort – stacked dimensions; oscillating in a single dimension; oscillating in stacked dimensions; first barrier stretch; first barrier glide; middle barrier technique; stepped unwinding; stack and borrow; scrubbing the walls; and numerous sub-variations and combinations of these.

As many people contributed to this proliferation of functional methods, curious things happened. These treatment methods were not universally, or even well, shared. No school teaches them all. Some schools teach as few as a single method. Belief systems grew up holding some methods to be in all situations better than others, followed by the usual human bickering between camps. My considered opinion is that each method has its uses and it is best to have as full a toolbox as possible. To this end I have collected functional treatment methods from several schools. I cannot say that I have them all, only many. Studying these several methods over time I saw ways in which they were similar and also how they differ from each other. So far I have discerned six axes of variance. Seeing these patterns of relationship opened a window akin to the early development of the periodic chart of the elements. In chemistry the known elements were mapped in their perceived relationships, and this revealed holes in the chart where more elements yet undiscovered would lie. By seeing these openings in the array of functional methods, I have developed more than a dozen new variations.

Below are descriptions of each of the six axes of variance among functional methods, followed by a description of one of Hoover's original techniques including how it relates to each of the six axes.

Six Axes of Variance Among Functional Methods

Tissue Engagement

Engagement between the client's tissue and the practitioner's hand may be initiated by either party. When tissue is in contact with a relaxed hand, inherent movement in the client's tissue will engage the practitioner's hand and pull it in a particular direction or sequence of directions. Alternatively the practitioner may initiate the engagement.

Some methods make use of tissue engagement throughout the method. Other methods use tissue engagement at some phases of treatment. The method of tissue engagement in some treatment methods changes from one phase of the treatment to another.

Force

For all functional methods the force used is small, however, some methods use less force than others. For some functional methods the amount of force used changes from one phase of a treatment to the next. For example, recoil uses moderate force in the setup phase and no force in the release.

Speed

The speed with which the hands are moved varies between functional methods. Usually, the speed is low and is sometimes, but not always, in response to inherent movement in the body. In some instances, the practitioner uses his hands to further slow the movements of the body. At the other end of the spectrum, the hands are moved as quickly as possible in the release phase of recoil.

Constraint

In some but not all functional methods, tissue is prevented from moving in certain ways. The nature and extent of constraint varies from method to method, ranging from no constraint to complete prevention of movement. For example, in pure unwinding the practitioner offers no constraint to movement, while in Hoover's centralizing technique no movement is allowed.

Directiveness

In some functional methods, the practitioner requires tissue to move in particular ways; in other methods, no specific movement is required. The nature and extent of this directiveness varies from method to method. Some methods utilize no directiveness, many methods utilize limited directiveness, and some methods use varying amounts of directiveness in different phases of the same treatment.

It is important to clarify the differences between constraint and directiveness. Constraint describes what the practitioner does not allow the tissue to do. Directiveness describes what the practitioner requires the tissue to do. In both instances the practitioner makes a demand on the tissue: one forbids action while the other is a call to action. Both may be present in the same treatment method with some things being forbidden while others are required.

Relationship to Effort Barriers

In passive range-of-motion testing, tissue is moved to a comfortable end-feel. If the

practitioner's hands are kept relaxed and tissue is moved *very slowly*, the increase in resistance to movement will be felt to be stepwise, rather than a smooth curve. A certain amount of effort is required to displace tissue the first linear or angular distance; then a distinct rise in effort is felt to achieve the next increments of change. This is called the *first barrier*. With a little further displacement, a second distinct rise of force required to produce positional change will be felt. This is called the *second barrier*. A sequence of such barriers will be felt at unequal increments until end-range is reached. At end-range, tissue failure is a possibility, producing pain and damage; do not push into this range.

Some functional methods treat at a first barrier, others treat at forces less than first barrier. Some methods utilize barriers in mid range between first barrier and end feel. Recoil is always done at barriers greater than the first and may include near end-range.

End-range is of various types. In mobility testing any tissue, whether a joint or stretch in soft tissue, there is a distinct anatomic limit beyond which healthy tissue cannot be displaced without pain and/or damage. For some joints, such as extension at the elbow, this end feel has a distinct bony feel. For other healthy joints and soft tissues, there is a gradual incremental rise of force required to produce movement. At the end, a larger increment of force is required and produces little movement. In tissue that is fibrosed, edematous, or both, the effort required to move through the range will be felt to be greater than normal. In that case, there will be a less sharp rise to end-feel, and rather a more gradual or boggy increase of effort.

If there is conscious or unconscious guarding of an area, attempts by the practitioner to produce movement will provoke active muscular contraction opposed to the practitioner's intended movement. This may or may not be accomplished by a perception of pain on the part of the client. When guarding is observed, a slower testing speed may produce movement without muscular guarding or pain; if not, the nature of the end-feel is noted and it is recognized that anatomic end-range has not been found. Exploration of and possible reduction of guarding may now become treatment goals.

The incremental rise in force required to produce movement is typical of composite substances. Imagine a piece of a pure synthetic rubber, where all molecular components are of essentially the same kind. When this is stretched or compressed, a graph of force versus displacement will be fairly smooth, usually with a substantial, nearly linear central portion. If, on the other hand, the same synthetic rubber was polymerized around a mass of Lycra fibers, the force-versus-deformation curve of the new composite material now has three distinct stretch and compression ranges: rubber, Lycra, and the surface interface between rubber and Lycra. The force-versus-deformation curve of this composite substance will show distinct steps as each aspect is engaged. Human tissue is quite complex in its composition, including connective-tissue fibers of various elasticities, as well as other components; it therefore exhibits a multistep force-deformation curve.

Centralizing (Hoover) Technique

Concept: In some techniques tissue is loaded to a first barrier. In other techniques, a load greater than first barrier is applied. In *Centralizing Technique*, tissue is stabilized to a specific position rather than to a specific barrier.

Pretest: Observe alignment in the person's body both locally and globally. Test range of motion in the area to be treated. It is vital to know the starting place both in the big picture and locally.

Therapeutic method: Test each dimension separately and note the location of the first barrier. Then stack the tissue to the geographic center between barriers in each dimension. One might think stacking tissue to a geographic center would return the tissue to the original position, but this is not the case. As an example, excursion to a first barrier may be six millimeters superior and two millimeter inferior. Within this eight-millimeter range between opposite first barriers, the geographic center is two millimeters superior from the original equilibrium point. The force required for stabilization is low since this is a sub-first-barrier technique, however absolute stillness must be maintained.

Completion and repetition: Once the geographic center his been found, stabilize the tissue at this point until a release is felt. This will be felt as a generalized spreading and softening of tissue. Often, but not always, this will be a large release. Once a release has occurred, the new resting equilibrium point will have shifted and the location of the barriers will have changed. These may be re-tested to establish a new centralizing stack. A single treatment may produce satisfactory mobility. Two or more cycles of treatment in the same area may be required to produce satisfactory mobility. It is important to be sensitive to any hint of inflammation arising and when it is present to stop, avoiding overtreatment.

Post-Test: Observe alignment and test range of motion. Point out change to client.

Application: This method may be applied to most structures. Centralizing Technique is a big hammer. It will free up almost anything. Occasionally someone becomes enamored of Centralizing Technique and makes it a mainstay of his or her practice, but this is like hitting everything with a sledgehammer whether it is a railroad spike, framing nail, finish nail, or tack. Most tissues that are currently the primary restriction can be released with other less powerful techniques. Still, it is useful to have a big hammer in the tool kit, as occasionally it is the tool of choice.

Contraindications: Never apply this method to the pancreas, spleen, eyeball, or other fragile tissue.

Six-Factor Model as Applied to Centralizing Technique

Tissue Engagement: Tissue engagement is created entirely by the practitioner's volition and action. In this treatment method, unwinding phenomena are not only not utilized, but suppressed.

Force: In the exploratory phase, first barriers are found but not exceeded. In the setup phase, the force applied is distinctly less than first barrier. At the release, application of force dissolves and contact is promptly broken by the practitioner.

Speed: Speed of movement of the practitioner's hands in the exploratory and setup phases is slow. Once the therapeutic setup is established, there is no movement of the practitioner's hands, and unwinding of the client's tissues is forbidden. As the tissues release, the practitioner's hands are removed at a moderate pace.

Constraint: Throughout this technique, tissue unwinding is opposed and forbidden by the practitioner. Once the setup phase is established, constraint is high in the sense that no tissue movement is permitted;

however, the force required to maintain this constraint is low. The release at the end is fully allowed, signaling the prompt removal of the practitioner's hands.

Directiveness: In the exploratory phase, the tissue is moved in the several cardinal or physiologic directions by the will and action of the practitioner. In the setup phase, the tissue is moved by the practitioner to a very particular location and loading. Once this loading is established, there is no further direction given to the tissue.

Relationship to Effort Barriers: In the exploratory phase, first barriers are found in three or more dimensions, however loading to those first barriers is only transient. In the setup phase, forces applied are distinctly less than first barrier. As the setup phase is maintained, precise forces unrelated to, but generally less than, first barrier are applied as needed to counter and prevent any attempt of the tissue to unwind. At the moment of release, the resistance against which the practitioner has applied load dissolves, followed promptly by the practitioner breaking contact.

Endnotes

1. I highly recommend John Lewis' new definitive biography of Still: *A.T. Still: From the Dry Bone to the Living Man*. Available at www.atstill.com.

Bibliography

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Jeffrey Burch is a Certified Advanced Rolfer living in Eugene, Oregon. He is trained to the instructor level in visceral manipulation and has trained in depth in three different directions of cranial manipulation. He offers continuing education courses for structural integrators and others. For more information see www.jeffreyburch.com or contact him at Jeffrey@jeffreyburch.com or 541-868-6928.