Wrong, yet popular: the Barral system of organ treatment

Why the basic assumptions in visceral manpulation are wrong and why we need to talk about organ activity

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It is still a riddle: What the Barral system says about organs is obviously wrong, yet it is quite popular in osteopathy. Organs avoid it, osteopaths flock towards it. The organs are scared of the Barral system: it states that organs are like joints and should move around all the time. If the kidneys listen to such talk they run for their lives, because they like nothing more than lying in their own fat bed, warm and stable. The kidneys and the other organs seem to know what osteopathy does not know: the Barral system can hurt. The success of the Barral system can only be understood in sociological or psychological terms; clinically it is not working for the organs and conceptually it is confusing. Scientific progress is stuck if we stick to a system that does not allow clinical falsification, conceptual reflection or creative development.

Faulty assumptions

There are five faulty assumptions in the original layout of "Visceral Manipulation" by Barral and Mercier (Barral and Mercier 1982/1988). All five have major repercussions when sustained over a long period and built upon. You can build on wrong assumptions, but progress and development is blocked. Unfortunately, the Barral community did not outgrow these early mishaps.

The five assumption are cornerstones of the system. They are not sound and the house is about to collapse. All five need to be removed in order to build a new and more promising building of organ treatment in Osteopathy.

The five assumptions, I will look at in this text, are:

1. Identification of motion with function
2. Extrapolation of the importance of motion from the musculoskeletal system to the organs
3. Spatial motions are called intrinsic (motility)
4. Organs move around axes
5. Axes are projected back into embryological development

Identification of motion and function is a problem

The Barral system identifies motion with function. This identification itself is a problem; the lack of differentiation regarding the functional benefit of different organ motions is a another problem**.** For the last 30 years I worked on the functional meaning of different organ motions, keeping in mind that motion is not the most important quality

(Helsmoortel, Hirth and Levin 2010). At the same time, a few colleagues and I started developing a new approach that is not built around the concept of function/dysfunction as motion. We had to go back and look at what the textbooks say about organ physiology. We found something very interesting: they talk about activity, not function. Organs live in states of activity, this is what physiology and pathophysiology is about. The physiology of the organs knows states of activity and a rhythmic change between normal resting activity and normal hyperactivity due to the challenges of life (physiological stress). Understanding activity can also lead to a clinically useful interpretation of palpaple qualities in pathophysiology and diseases, for example in fixed hyperactivity and - what is even more important – in loss of activity (hypoactivity and exhaustion).

Reducing function to motion is not even true for the joints. They also need to mediate dynamic and stable properties. In 30 years of research I did not come across one physiological argument why kidneys need to move up and down (spatially). Organs move, of course, but there is zero evidence that spatial motion (for example mobility) is of any importance for what is going on "in" the kidneys, their countless physiological functions. The opposite is true, understanding the character of the kidneys tells us: they need nothing more than warmth and stability for their inner activity **(Levin 2020**). Hyper-mobile kidneys are a real problem, hypo-mobile usually not.

First of all, organs are mobile and stable in form and position; both qualities are important. Secondly, the focus on motion is to narrow. If we look at the different tissues - for example in the gut: muscle, mucosa, enteric nerves, blood vessels and connective tissue - there is an array of tissue qualities we will be able to connect to in palpation. Just to name a few: volume changes due to changes in content, muscle tension, swelling of the mucosa, motility due to pacemaker cells and the enteric nervous system, and most importantly the stability of all tissues together as form and deformability, i.e. elasticity. It is absolutely impossible to reduce these palpable qualities to motion.

Extrapolations from the musculoskeletal system to the organs

The Barral system assumes that organs are like joints and therefore movement is important. This is not at all true. Organs are not focused on motion like the musculoskeletal system. Stability in shape and position are much more important for many organs.

The titles of the early books were a warning sign: "Visceral Manipulation", not "Visceral Osteopathy". This is witness to the fact that some of the authors were physical or manual therapists used to working with joints and muscles. Organs do not need "visceral manipulation", they need an approach that is in keeping with their way of expressing states of activity. Pushing concepts from another body system onto the organs did not serve them well. One of the most striking omissions in the Barral system was the shear absence of the activity of the different tissues in the organs. Some of the first publications

hardly mentioned the mucosa layer, the defining tissue of the gut. Approximately 80% of the small intestine is made up of the mucosa, yet the mechanical properties of this tissue is not considered. A treatment of the small intestine without paying tribute to the qualities of the mucosa is meaningless or iatrogenic.

This lack of interest in organ tissues and their mechanical properties was due to the extrapolation from the musculoskeletal system. The focus was put on the somatic structures that connect the organ with its environment (Weischenk 1982, Finet and Williams 1992, Kuchera and Kuchera 1994, Patriquin 2003). These are somatic in nature and not visceral. The Barral system does not look at the inner architecture and inner activity of the organ. This is quite obvious if one looks at the publications and concepts and watches teachers and practitioners at work. They all stay on the outside of the organ, in palpation and in their clinical concepts. Therefore, It is all about movement in space and the fascia-connections. Those connections are an important aspect, but not the organ itself. The tissues treated in the Barral system are the fascia of the peritoneum that connect the organ and the organs to the body wall.

Some honest colleagues therefore, used the term "viscero-fascial treatment". It should be noted, that this still assumes we have an impact on the organ by treating its environment. This is only partly true as a lot of inner organ activity is auto-regulated and not dependent on those impulses. The literature on auto-regulation and autonomy is in stark contrast to the emphasis on the environment. I studied auto-regulation in biology before studying Osteopathy and naturally had a hard time following the exclusive focus on extrinsic regulation.

Because the Barral system puts emphasis on movement, false conclusions have arisen. Lack of motion or the presence of resistance or tension is presented as an indication for treatment. This is, clinically speaking, a disaster. Not all resistance is bad; resistance is a good challenge to build up strength and a stimulus for the development of stability. Tension per se is good and the job of a clinical osteopath is to find out if there is normal rested tension or a normal increase of tension due to demand. Only loss of tension or an increase in tension, that can not be regulated, is a problem.

The other conclusions people used is evenly false and creates clinical problems: More movement is more function, less movement is diminished function. Such statements completely bypass the fact that some organ motions have nothing to do with function; some are a sign of compensation (Helsmoortel, Hirth and Levin 2010). To increase compensation without knowing what it might trigger, creates confusion and drama in the patients, not healing.

Especially if it comes to the treatment of infants things can get really out of hand. Babies are born without neck stability. They need 6 months of hard work to develop a stable neck. If the osteopathic treatment of infants only focuses on mobility and loosening up restriction. it might be useless or harmful (iatrogenic). Useless because a baby with a

hypermobil neck well soon develop another blockade to create stability; iatrogenic if we are unable to integrate the underlying problem (=instability) into our treatment approach.

Confusing intrinsic and spatial motion

The Barral system from the beginning confused intrinsic and spatial motion. The pictures and teachers show spatial movement and refer to them as motility (= intrinsic movement). The rotation of the stomach and small intestine around an axis are presented as motility. This is wrong. since motility is defined clearly in physiology: a movement in the organ as a whole (no spatial displacement) and the driving force and rhythm (pacemaker) is in the organ. Gastric motility is the rhythmic contraction-decontraction of the stomach itself, not a rotation around an axis. The motility of the small intestine is its rhythmic contraction for mixing and transporting food, formerly called peristalsis. Likewise, motility of the heart is the inner contraction of the heart in the systolic-diastolic activity. Motility in the renal pelvis and ureter is called uro-dynamics while motility of blood vessels is vasomotion.

Do Organs move around axes?

This is one of the most striking assumptions, since it is so easy to prove it wrong. Movements around axes are extremely rare in real life biology; not in machines or in lab experiments. But usually, those who do those experiments know that outside the controlled lab conditions things work differently. Just by changing the way we palpate an organ - using two hands instead of one - we were able to percieve thee-dimensional changes in form and volume. Using two hands like a fan on the small intestine will not produce a rotation but a spreading of the fan during deep inhalation. Two hands around the lung will not produce a rotation (ribs rotate, lungs not) but an uneven expansion (= elastic deformation and volume change) of the lung depending on the level of inhalation.

In a three-dimensional space filled with organs, like the peritoneal or thoracic cavity, movement of organs around axes are a totally abnormality. Imagine a three-dimensional organ like the lung rotating around an vertical axes. This is virtually impossible as nothing in the three-dimensional architecture of the lung and the flow of air would allow such a movement; and every breath would pull on the vessels and fascia to the heart. We would expect those vessels to develop longitudinal muscle fibers like the ones in the lower lungs who respond to the large stretch of deep inspiration.

The assumption that healthy organs move around axes led to a mix-up of health and disease. If organs move around axes, it is due to changes in the tissue quality in or around the organ. In healthy physiology motions occur mainly in the realm of deformation, within the elastic properties of tissues. This is why I focussed quite some time on studying organ elasticity, their ability to allow for volumetric deformation while building up the response, i.e. the intrinsic force that restores form. Elasticity, does not lead to uni-directional motion

around an axe. Elasticity, like gravitation since Einstein, is a force without an arrow. It is a field, a three-dimensional orientation of forces in the organ.
In motility, organs follow their inner architecture, which is three-dimensional and not organized around axes. If an alignment of motility around an axis occurs, it is the result of altered tissue activity in the organ (inflammation, sclerosis, cancer). These changes in tissue activity lead to a disturbed elasticity and deformability of the organ, for example, in lung fibrosis or gastric ulcers.
If, on the other hand, the spatial movement of the organ is suddenly organized around an axis, it is due to changes in the elasticity of tissue in the neighborhood of the organ, - for example, the rotation of the stomach because of changes in the elasticity oft the smaller omentum.

Embryological motions and tissue memory

Those wrong assumptions have fostered false conclusions about the embryological development. The existing literature was not reviewed, the difference between development of form and development of position was not systematically applied. Major misunderstanding ensued as the Barral System speaks of axes in embryological development. Such axes were never observed and contradict the principles of growth. Growth is always three-dimensional and differential or an-isotropic (not symmetrically, different in all directions). By no means differential growth can be described as movement around an axe. The Barral system confuses position-changing growth and morphogenetic growth because it confuses spatial and intrinsic aspects of motion. The lungs grow three-dimensionally in all directions like a tree. It is possible to see a movement in this growth, but certainly it is not a movement about an axis. The lung movement during respiration is also a three-dimensional deformation of the lung following its inner architecture, - a movement around 3 million constantly changing axes, which is why the concept of a movement around an axis is not helpful.
There is no need for a mystical explanation, like we are dealing with some form of unknown tissue memory all the way back from embryology. Morphogenetic growth results in form, this is the stuff of memory (Lieberman-Meffert 1969*)*. And form is used or activated by the inner workings of the organ (motility). This is what morphologist already knew 100 years ago, this is what we see in physiological motility or lung mobility. And this is what we can sometimes even feel in a bi-manual palpation.

An osteopathic approach based in physiology: Treating states of activity

An osteopathic approach to organ treatment based in physiology is possible and should at least contain (Levin 2018 and 2019):
- palpabe mechaniccal properties: elasticity, volume, motion, form and position
- states of activity in health and disease:

- holistic concepts: development, embodyment, therapeutic relationship

1. Organs show different states of activity. They are expressed in many ways, also in mechanical properties, that are easy to palpate and can be used clinically. These qualities are: elasticity, volume changes, motion, form and position. Movement is only one aspect of this activity and not the most important one. Stability of shape and position (= elasticity) as well as volumetric changes are usually more important.

2. The organ movement that is worth talking about is motility, intrinsic self-mobilization of form and volume. Motility is a movement that takes place in the organ while the driving force and pacemaker activity are also located in the organ. Intrinsic movements effect the shape and volume of an organ. It is a three-dimensional contraction and expansion that knows no axes.

3. Physiological organ movements do not occur around an axis. This applies to intrinsic as well as position-changing movements. Movements around axes arise through changes in normal tissue elasticity in the organ itself or in its environment. They are a sign of altered or pathological tissue deformability (elasticity) and an indication to treat the tissues involved.

4. Growth is three-dimensional and therefore by no means about an axis. Changes in form and position must be distinguished. Position and shape are not the same. In growth, the shape of an organ arises and the resulting form is activated in physiology. Growth leads to form, which is then made dynamic by physiological activity (like motility or mobility). Form is not memory but the presence of differential growth patterns in the organs architecture.

5. The most important next step is the osteopathic exploration of the different states of activity in the organ and the rhythmic changes between resting activity and normal hyperactivity. We also need to develop an osteopathic understanding and treatment of fixed hyperactivity and hypoactivity. This may lead us to an osteopathic contribution to the mechanical aspects of pathophysiology and disease.

6. We shoudl start a serious discussiona bout holistic concepts that are able to integrate the different aspects. I am working on three possible realisations of the holistic osteopathic concept. The three possible areas are: development of stabilty in early childhood, processes of embodyment, shaping the therapeutic relationship. They might be a chance to restore a sense of holistic medicine in Osteopathy.

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