Visceral Motility

Which osteopathic approaches are there, and how are they implemented ?

-A qualitative study-

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1. Introduction

In osteopathic medicine, motility is an important form of movement – an important element in the interaction of structure and function. But the more than sparse osteopathic literature provides few explanations on the morphogenesis of motility. When it comes to craniosacral motility, more usually referred to as "cranial rhythmic impulse", for a long time now osteopathic medicine has been trying to find scientific explanations for this movement. Nelson (2001) examines the relationship with Traube-Hering-Mayer waves. Various investigations have also been carried out with magnetic resonance imaging to verify the movements of the cranial bones. However, in visceral terms, osteopathic endeavours are mostly restricted to mobility of the organs. Helsmoortel is one of the few osteopaths who tries to put the movement of visceral motility on a scientific footing. His book (Lehrbuch der visceralen Osteopathie, 2002, p.43-70) looks in great detail at this topic of visceral motility, which makes me very glad that he was prepared to be interviewed for my thesis. During my osteopathic training, I have heard a great deal about the various movements and rhythms in the human body. Expressions such as "long tide" and "fluid tide" have been used, but without any really understandable explanations. Rhythms have also been mentioned, talking of two to fourteen cycles per minute. But here again there were no explanations for a better understanding of these movements. Helsmoortel (2007) puts it this way: *"Osteopaths – many osteopaths are magicians, but they cannot repeat their magic. This is quite a shame* (Helsmoortel 2007, p.8, l.3). Visceral lectures talked a lot about organ motility. But this should not be confused with the form of motility described by conventional medicine, which refers to peristalsis of the gut. Embryology seems to play a crucial role in the osteopathic explanation of visceral motility. Barral (2002) writes about the embryological model: […] *the embryological model of visceral motility is based on the presumption that these movements are stored in the visceral tissue* (Barral 2002, p.6). The embryologist Blechschmidt (1978) crops up frequently in this context; he took a very biodynamic approach to embryology without being an osteopath. He writes: *Developments in position, form and structure together become clear as forming movements. When we describe them, the previously static form anatomy becomes a kinetic forming anatomy. The forming movements express invisible material movements* (Blechschmidt 1978, p.23). This is my starting point for looking at the

phenomenon of visceral motility. I want to find out about the various approaches taken by osteopaths working in visceral education, teaching physiology, teaching embryology or publishing books in the visceral area, and how these approaches are implemented. To do so, I use guideline-based interviews. I found these interviews very interesting and exciting, as some of the interviewed experts had their very own method of approaching visceral motility. I hope that this thesis can make a small contribution to obtaining greater clarity with regard to visceral motility within osteopathy. This of course will not clarify the question as to the scientific principles and causes of visceral motility movement, but this study can collect and reproduce the various opinions and approaches. It aims to provide a basis for further discussion, because as the study shows, there is no general agreement on the notion of visceral motility in osteopathy. In addition, it will be fundamentally important for us osteopaths to take a scientific and critical look at areas such as embryology, biotensegrity, vasomotion and physiology in order to reach a better understanding of our work in future and to intensify scientific dialogue, both within osteopathy and even more in the context with other scientific disciplines.

2 Theoretic principles of the study

Section 2, theoretic principles of the study, elaborates the theoretic understanding of the study. It lists and explains aspects relevant for the study. Firstly it tries to define motility and visceral motility, as these notions form the basis of the study. Motility is then set in relation to mobility and motricity. As this study is dealing with visceral motility, the interview partners have referred mainly to the gastrointestinal tract. In explaining visceral motility, osteopathic literature refers to embryological development movements, so that this section looks at the embryological development in the gut. Embryology also plays an important role in the various approaches to motility taken by the interview partners. The study discusses different levels of working with visceral motility, namely a mechanical, functional and emotional level, and this is also taken into consideration in this section. To begin with, the descriptive macroscopic part of embryology is discussed, followed by Blechschmidt's biodynamic concept. He describes metabolic fields as the basis for these embryological development movements. The physiological aspects named by the interview partners in the morphogenesis of the visceral motility movement will also be discussed in this section in order to obtain a better understanding of visceral motility. These aspects include tensegrity, the cells of Cajal, vasomotion and Pischinger's system of ground regulation. The last part of this section looks at the emotional aspect. It is important to explain these terms for a better understanding of the statements made by the interview partners.

2.1 Definitions of motility, mobility, motricity and motoric

The following section explains motility, mobility, motricity and motoric in greater detail in order to understand visceral motility better. This will be explained by a brief digression in physiology, which, following Höppner (2007), is where the term comes from.

According to the German Wikipedia website (http://de.wikipedia.org, 2007), **motility** refers to the ability to move or mobility. The German website (2007) also says that the expression is used in physiology, on the one hand for the movement of cells and on the other hand for peristalsis in the gut. As far as motricity is concerned, this word cannot be found in most common dictionaries: it is a translation from the French word motricité and

means motoric. The German dictionary Duden (2007) describes **motoric** as follows: *1. All coordinated movements of the human body, actively controlled by the brain. 2. The doctrine of the functions of the movements of the human body and its organs. 3. The totality of [uniform, regular] movements.* Pschyrembel (1998) says the following about motoric: *motoricity, motor functions; totality of movements controlled by the CNS, cf. pyramidal tract, motility*. Pschyrembel (1998) says the following about **mobility:** *mobility; arbitrary control of movements […] cf. motility.* The corresponding entry in Duden (2007) states: *1. Intellectual mobility. 2. Mobility of individuals or groups within society.*

As far as **motility** is concerned, Pschyrembel (1998) says: *motility; ability to move, more precisely referring to organs which move as a reflex or under vegetative control (e.g. peristalsis); cf. mobility, motoric.*

Duden (2007) explains **motility** as follows: *1. Totality of unconsciously controlled movements of the human body and its organs; antonym motoric. 2. (Biol.) ability to move of organisms and cell organelles.*

These different definitions indicates that all three terms have at least one common overlap and cannot be completely distinguished from each other. According to these definitions, movement of the diaphragm, which is both arbitrary and unconscious, can be referred to as a form of motoric, a form of mobility and also as a form of motility, depending on how it is viewed. A better understanding of the notion of motility entails looking at physiology which is where the term comes from. According to Höppner (2007): *Motility is a notion belonging to physiology […] it is a physiological term (p.1, l.34, 35.).*

Physiology uses visceral motility as a synonym for peristalsis. Linke (2005) divides motility into two phases:

- **Digestive (postprandial) phase**. This phase mixes the ingested food and coordinates its aboral transport (peristalsis).
- **Interdigestive phase.** The interdigestive phase follows on from the digestive phase. Klinke (2005) describes this task as combining materials which cannot be digested into particles larger than 2 mm and transporting them. It is also referred to as "sweeping", and again takes place by peristalsis. These migrating contractions are also referred to as the migrating motor complex (MMC).

In this context, Klinke (2005) argues that this intrinsic motility comes from membrane potential fluctuations in the smooth muscle cells. To this end there are pacemaker regions showing spontaneous membrane potential fluctuations. Klinke (2005) says that these propagate to the smooth muscle cells via gab junctions, and that the interstitial cells of Cajal are responsible for these potential fluctuations. Klinke (2005) then continues as follows: *These "silent" electric waves […] have a frequency of approx. 3 – 10 min. and are referred to as slow waves* (Klinke, 2005, p.414).

Barral (2002) defines visceral motility as palpable movements which reflect the embryological development. To summarize we see that there exist several definitions of motility and visceral motility. One definition based on physiology, one according to Duden (2007) in a narrower sense as a unconsciously controlled movement of the human body and its organs. And according to Barral (2002) and Liem (2005) a embryological definition. To get a better understanding of the approaches of the interview partners it is necessary, looking at the embryological development.

2.2 Embryology

As already mentioned in the introduction, osteopathic argumentation as to the morphogenesis of visceral motility is based primarily on embryological development. Liem et al. (2005) describe that the origin of this intrinsic movement phenomenon and its movement axes is presumed to lie in embryonic development. This section looks at the embryological principles for a better understanding of visceral motility and a better understanding of the statements of the interview partners.

2.2.1 Development of the primitive gut

The embryological development of the gut and its glands is discussed in this chapter, but only looking at the aspects relevant to this thesis. Embryology divides the primitive gut into various sections (see below). This has an influence on the later fascial system and its vascularisation and innervation, and thus also on how the various approaches taken by my interview partners are implemented. The development of the primitive gut is discussed

below, as this is referred to frequently in the statements by my interview partners. Figs. 1 – 4 illustrate the fascial relative position of the organs and their vascularisation.

According to Hinrichsen (1990), the primitive gut is divided into four sections. These are the head gut, foregut, midgut and hindgut. Hinrichsen (1990) writes about the baffling basic procedure of the formation and development of the body and organs, namely morphogenesis. He writes: *The most puzzling basic procedure in the development is morphogenesis. The way the body is formed as a whole and in its parts is achieved by the embryonic cells, cell associations and tissues, and depends on many factors* (Hinrichsen, 1990, p.22). Hinrichsen (1990) sees the basis of morphogenesis as being the formation of templates. This requires an adequately large cell population. The microenvironment with local metabolic varieties also plays a crucial role. Sandler (2002) also argues along these lines. He also makes reference to an organism and its environment. According to Sandler (2002), without its environment, no organism can survive, whatever its size. The organism undergoes a constant exchange with its environment. Sandler comments on this exchange as follows: *[…] we cannot think of any organism, down to the smallest microbe, that lives without having to think of an environment within which it must be in an ever-ongoing interaction. Thus, if we begin with life, we begin not with the living organism itself, but with a "system"- the organism and its environment. But if we begin with a system - the organism always within an ever-ongoing exchange with its surround - we are thinking of process, a continuing process with many levels of complexity occurring together* (Sandler, 2002, p.14).

For the gut to develop, Rohen (2006) and Lütjen (2006) see the need for an intraembryonic cavity (coelom) lined by the peritoneum. According to Moore (1993) and Persaud (1993), this happens in the fourth week by formation of the front and rear gut bud as the embryo unfolds from the germ disk. As said before, according to Hinrichsen (1990), the gut system can be divided into four sections: head gut, foregut, midgut and hindgut. The further development of the head gut will not be looked at explicitly here, but only at the formation of the liver and pancreas. Here Hinrichsen (1990) speaks of the point of origin of the liver and gall bladder bud, at the fork between the twin aorta arches. According to Hinrichsen (1990), this is also where the dorsal pancreas emerges. Hinrichsen (1990) then refers to the oesophagus, stomach and upper part of the duodenum, saying: *The area between the origin*

of the thyroid and the origin of the liver and pancreas can thus be defined as the section of the foregut from which the pharynx, oesophagus, stomach and upper duodenum arise (Hinrichsen K.V. 1990, p.517).

2.2.1.1 The foregut

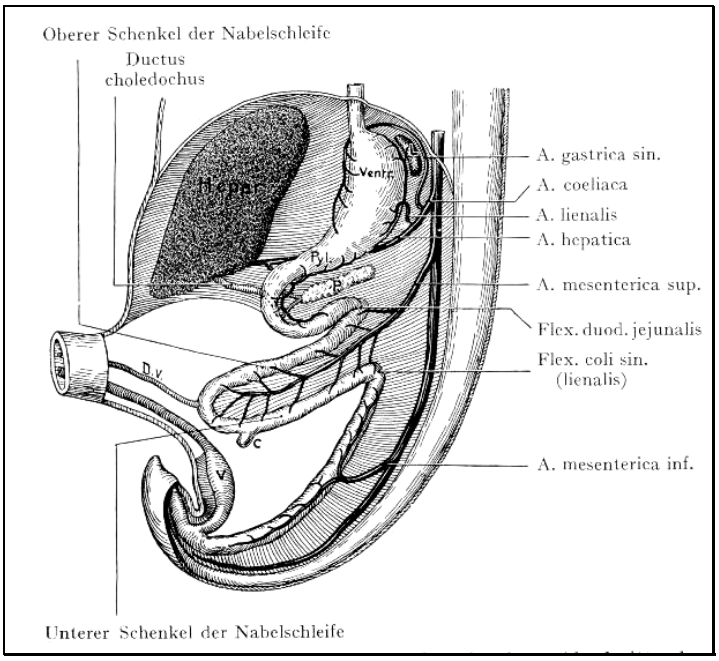

Fig. 1 Corning (1931)

The following section looks at the development of the foregut below the diaphragm. According to Rohen (2006) and Lütjen (2006), this part of the gut is connected by a ventral mesogastrium to the liver and by a dorsal mesogastrium to the rear body wall, so that according to Paoletti (2001), this results in other fascial conditions than in the other sections of the gut. Some interview partners repeatedly refer to this subdivision of the primitive gut, so that it will be looked at below in greater detail. Hinrichsen (1990) says that the diaphragm develops from the septum transversum. This arises at the base of the pericardium cavity from its mesenchyma and is connected to the yolk sac. The stomach develops below the diaphragm and is already visible as a spindle-shaped sack in stage 13. According to Rohen (2006) and Lütjen (2006), the stomach is connected by a dorsal

mesogastrium to the rear body wall and by a ventral mesogastrium to the rapidly growing liver which takes up a lot of space. According to Hinrichsen (1990), the longitudinal growth of the oesophagus gives rise to the so-called rotation of the stomach. *The rotation of the stomach is initially a "descent" of the stomach. It refers not only to the position of the spindle-shaped early stomach as such. In the region of the future cardia, the stomach which is initially in a sagittal middle position descends somewhat more than in the region of the later pylorus so that the stomach assumes an almost horizontal position. At the same time, the stomach is shifted to the left from the middle position* (Hinrichsen,1990, p. 535). According to Hinrichsen (1990), the dorsal mesogastrium becomes a long fold into which the initial pancreas grows and where the spleen develops. This entire development of the stomach is only possible as the midgut shifts provisionally completely into the umbilical coelom. This is a very sketchy explanation of the in vivo processes, but there is no scope for more in-depth explanations within the framework of this thesis.

Development of the liver

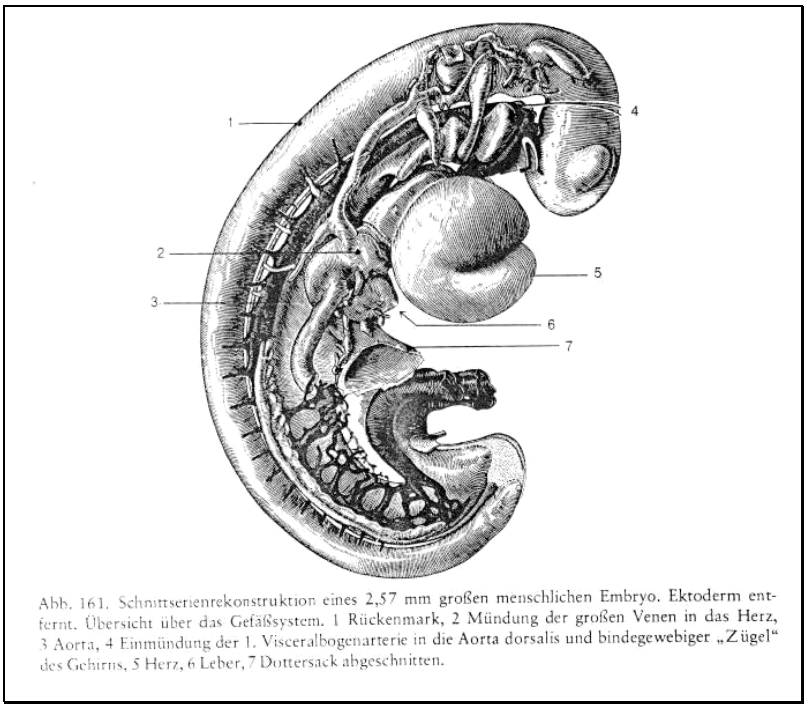

Abb. 161. Schnittserienrekonstruktion eines 2,57 mm großen menschlichen Embryo. Ektoderm entfernt. Übersicht über das Gefäßsystem. 1 Rückenmark, 2 Mündung der großen Venen in das Herz, 3 Aorta, 4 Einmündung der 1. Visceralbogenarterie in die Aorta dorsalis und bindegewebiger „Zügel" des Gehirns, 5 Herz, 6 Leber, 7 Dottersack abgeschnitten.

Fig. 2 Blechschmidt (1978)

According to Blechschmidt (1978), the liver plays a central role within the development of the abdominal situs. The rapidly growing nervous system and the resulting development stimulus for the heart in turn generates, according to Blechschmidt (1978), a strong development stimulus for the liver in the sense of haematopoiesis. Blechschmidt (1978) says that locally increased growth of the endoderm in the highly vascularised upper edge of the umbilicus results in the formation of the liver. See also Fig. 2.

According to Rohen (2006) and Lütjen (2006), the liver develops swiftly with intensive growth, thus underlining the important function in embryonic development, stating that: *Already on the 25th/26th day, development of the liver is induced from the adjoining development of the heart as a primary intraembryonic organ for haematopoiesis and thus for the entire embryonic circulatory system. In this way, the heart produces its own "supply organ" early on […]* (Rohen J., Lütjen E. 2006, p.101).

The liver is formed originally in two equally sized lobes but undergoes asynchronous development according to Rohen (2006) and Lütjen (2006) during the foetal period. The left liver lobe undergoes less growth, so that the liver shifts increasingly to the right.

2.2.1.2 The midgut

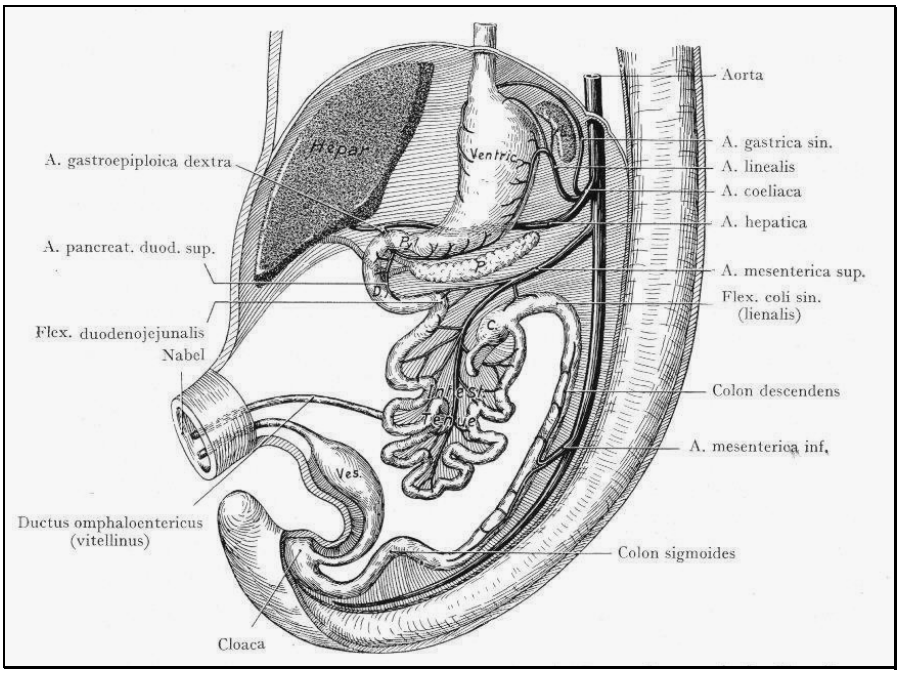

Fig. 3 Corning (1931)

From the midgut onwards there is no longer any ventral mesogastrium, as shown in Fig. 3. According to Hinrichsen (1990), the superior mesenteric artery growing into the dorsal mesogastrium forms the axis of the umbilical loop. Hinrichsen (1990) says: *And so the umbilical loop takes its mesentery with it into the umbilical coelum* (Hinrichsen 1990, p.541). According to Hinrichsen (1990), this displacement is referred to as physiological umbilical hernia. By fixing the duodenum to the rear body wall, according to Hinrichsen (1990) this causes a C-shaped curvature and at the same time a displacement to the left. With regard to these displacements of the "upper base point of the umbilical loop", which also influences the lower base point, he says: *With the displacement of the point now known as the duodenojejunal flexure (hitherto "upper base point of the umbilical loop") to the left, the lower base point of the umbilical loop is also pushed far over to the left and is now the later left colic flexure* (Hinrichsen, 1990, p.544). The unfolding of the abdominal cavity through the very strong growth of the liver according to Hinrichsen (1990) causes "loop-wise" reposition of the physiological umbilical hernia. Formation of the colon framework according to (1990) causes areas of adhesions. He says: *One area of adhesion on the top right refers to the meso of the ascending colon and parts of the mesentery, another bottom left refers to the meso of the descending colon and lower parts of the mesentery. These two areas of adhesion are separated by the mesenteric root which runs diagonally through the abdominal cavity from the duodenojejunal flexure to the ileocolic flexure* (Hinrichsen, 1990, p.546).

2.2.1.3 The hindgut

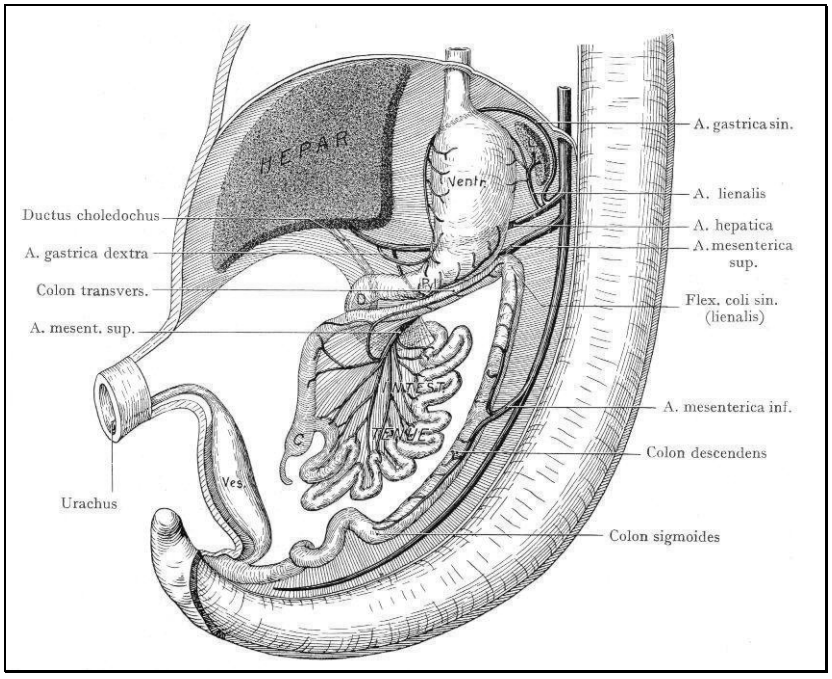

Fig. 4 Corning (1931)

The hindgut refers to the part supplied with blood from the inferior mesenteric artery. This is from about 2/3 of the transverse colon. In other words, it refers to the transverse colon, the left colic flexure, the descending colon, the sigmoid colon and the rectum. According to Hinrichsen (1990), this results in two different aspects in the development of the hindgut. On the one hand, the upper part is influenced by the intestinal rotation of the midgut. On the other hand, the other part of the hindgut remains in the median plane. The development of the one part of the hindgut is seen by Hinrichsen (1990) in the context of the lower base point of the umbilical loop. Subsequently the lower section of the hindgut is no longer included in the change in position of the intestinal rotation, so that according to Hinrichsen (1990) it retains its median position.

2.2.2 Summary

As this section has shown, an understanding of macroscopic descriptive embryology provides the basis for understanding the relative positions of the organs in the gastrointestinal tract. As described by Hinrichsen (1990), the rotation of the stomach, the rotation of the midgut with its physiological umbilical hernia, and the rotation of part of the hindgut causes a relative positioning of the organs which acts as the basis for understanding visceral, fascial treatment.

2.3 Blechschmidt's biodynamic and biokinetic concept

Section 2.3 looks at Blechschmidt's biodynamic, biokinetic concept. Blechschmidt (1974) describes metabolic fields based on these growth movements. Some interview partners refer to Blechschmidt's concept and their understanding of visceral motility is partly based on this biokinetic concept, so that Blechschmidt's work will be presented here. The "morphomechanic" aspect of embryology is a current branch of research. Gordon (2006) for example refers to the importance of these kinetic mechanisms in embryological development, describing it as follows: *Mechanics is shown to be an important, perhaps central component in the differentiation and development of embryos* (Gordon 2006, p.245). For many osteopaths, Blechschmidt's concept provides a basis for a better understanding of processes in the interaction of structure and function. However, Blechschmidt was an embryologist and not an osteopath. His research never dealt with motility. Helsmoortel (2007) also reacts to this, emphasizing it as follows: *But he himself does not describe any motility. He does not show any interest in motility. It is better to know that. If you go to Göttingen and ask Dr. Seidel for an explanation, on the contrary he will ask you the same question. He finds it interesting that we are interested in this, but it was not his (Blechschmidt's) issue.* (p.4 /36-37, p.5 /18-22).

2.3.1 About Blechschmidt

Professor Dr. Erich Blechschmidt (1904-1992) was the Director of the Institute of Anatomy at the University of Göttingen from 1942-1973. The "Blechschmidt human embryology document collection" can be found here (2002): *These are cross-sectional images for the reconstruction of human embryos produced between 1942 and 1970 and catalogued for international use at the Carnegie Institution, USA. The collection is unique in its kind. It is not reproducible because of the complicated way in which it was produced* (Blechschmidt E. 2002). He wrote more than 200 scientific articles about embryogenesis, including textbooks.

2.3.2 Differentiation in biodynamic metabolic fields

In his textbook "Human Embryology", Blechschmidt provides a very drastic description of how vital processes are expressed in motion processes, and that chemical processes also have a physical side, declaring: *If you do not want to accept that vital processes are expressed both as momentary images and motion processes, and do not want to admit that chemical processes also have a physical side, you should not look at our observations and results* (Blechschmidt 1974, p.11).

For a better understanding of the processes taking place in the embryo, it is necessary to be aware of the size of the embryo at all times. According to Moore (1996) and Persaud (1996), the intestinal tube emerges in the 4th week. Blechschmidt (1978) writes about the size of the embryo in this phase as follows: *At the start of the 4th week of development, a human embryo measuring **1.8 mm** in size already has a clearly visible head, neck and trunk region* (Blechschmidt 1978, p.35).

Blechschmidt carried out his embryo research solely on human embryos. He refers to the spatial configuration of the body which become visible as development movements when he explains: *Describing the body not as a status but in its forming means to trace its spatial changes during certain time periods as development movements* (Blechschmidt 1978, p.22). He also describes the fact that an adult organism only has recourse to the

capabilities which have formed within its development, when he says: *The forming achievements are features of the growing organism as the basis for the later achievements of the adult* (Blechschmidt 1978, p.23).

According to Blechschmidt (1978), a biodynamic metabolic field is a force field subject to a well-ordered metabolism. Consequently, metabolic fields are morphologically separable areas with spatially ordered metabolic movements, regardless of the size. He writes: *Cells and cell structures can be described just as well as a biodynamic metabolic field as for example disaggregation or compaction zones, or also completely differentiated areas, such as the lungs, the liver or the thyroid* (Blechschmidt 1978, p.23).

Blechschmidt (1974) describes early and late metabolic fields.

2.3.2.1 Early metabolic fields

Starting with fertilization via adplantation and implantation through to formation of the axial appendage, Blechschmidt (1978) describes the development of the single chamber egg in the first week after fertilization. During this time, the egg does not grow in size.

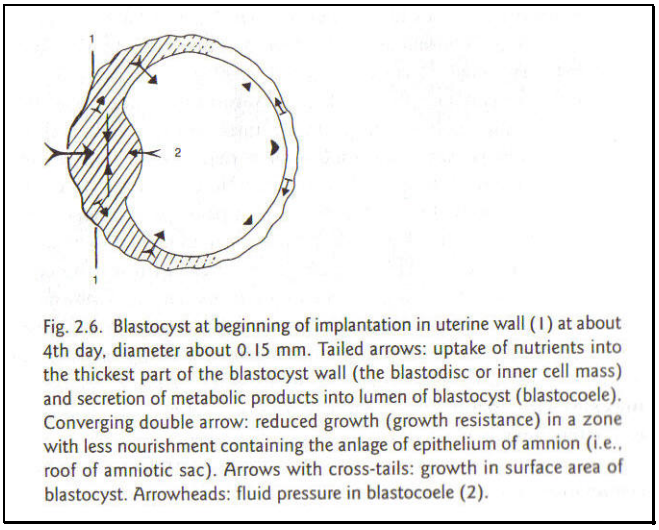

Fig. 2.6. Blastocyst at beginning of implantation in uterine wall (1) at about 4th day, diameter about 0.15 mm. Tailed arrows: uptake of nutrients into the thickest part of the blastocyst wall (the blastodisc or inner cell mass) and secretion of metabolic products into lumen of blastocyst (blastocoele). Converging double arrow: reduced growth (growth resistance) in a zone with less nourishment containing the anlage of epithelium of amnion (i.e., roof of amniotic sac). Arrows with cross-tails: growth in surface area of blastocyst. Arrowheads: fluid pressure in blastocoele (2).

Fig. 5 Blechschmidt (2004)

During the second week, the two-chamber egg begins to develop. According to Blechschmidt (1978), the egg adheres to the uterus mucosa because the cells are polarised. This brings it into contact with the metabolic field of the maternal cell structures. Maternal cells are destroyed, providing nutrients for the embryo. According to Blechschmidt (1978),

the egg is implanted at the start of the second week. The front and rear egg chambers develop.

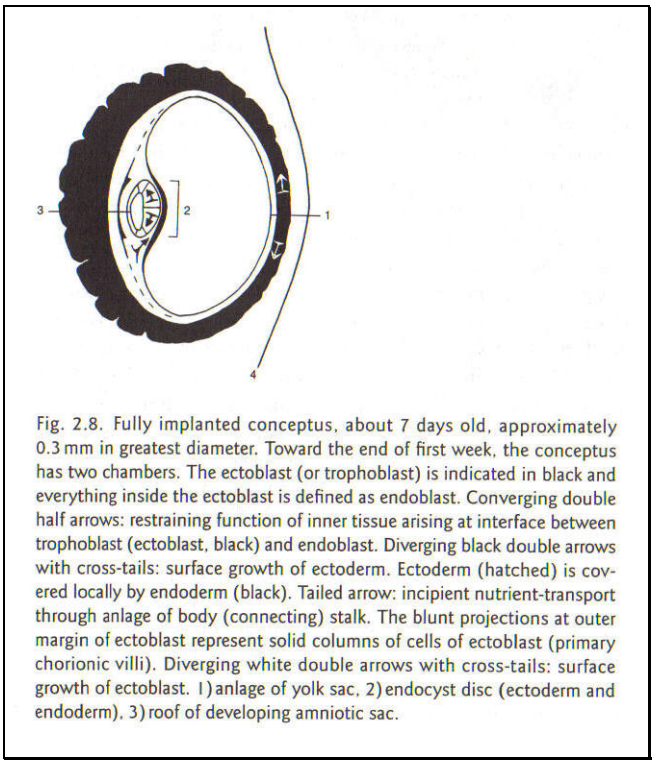

Fig. 2.8. Fully implanted conceptus, about 7 days old, approximately 0.3 mm in greatest diameter. Toward the end of first week, the conceptus has two chambers. The ectoblast (or trophoblast) is indicated in black and everything inside the ectoblast is defined as endoblast. Converging double half arrows: restraining function of inner tissue arising at interface between trophoblast (ectoblast, black) and endoblast. Diverging black double arrows with cross-tails: surface growth of ectoderm. Ectoderm (hatched) is covered locally by endoderm (black). Tailed arrow: incipient nutrient-transport through anlage of body (connecting) stalk. The blunt projections at outer margin of ectoblast represent solid columns of cells of ectoblast (primary chorionic villi). Diverging white double arrows with cross-tails: surface growth of ectoblast. 1) anlage of yolk sac, 2) endocyst disc (ectoderm and endoderm), 3) roof of developing amniotic sac.

Fig. 6 Blechschmidt (2004)

In the third week, the three-chamber egg develops. Differing growth rates between ectoblast and endoblast, according to Blechschmidt (1978), result in a loose tissue layer. The cells are subject to tensile load which flattens them, releasing fluid from the cells. This interstitial fluid ensures that the tissue develops into a honeycomb (mesoblast). After the honeycomb breaks down, the three-egg chamber or so-called chorionic cavity develops. He writes: *The gaps in the mesoblast layers communicate with each other. This permits currents of fluid along the surface of the egg, already before networks of vessels have formed […]. Nutrients flow through the body stalk of the endocyst disk between the ectoderm and endoderm. This already presages the route of the blood vessels in the body stalk* (Blechschmidt 1978, p.31).

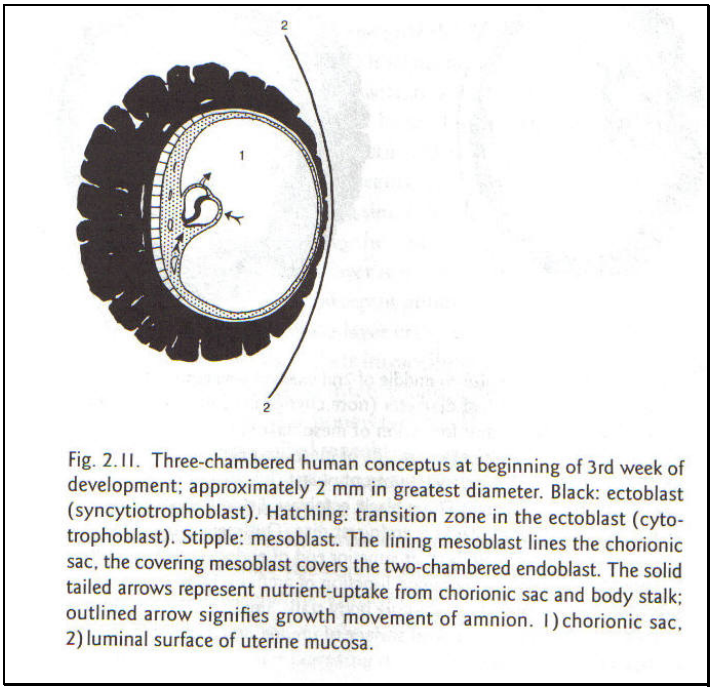

Fig. 2.11. Three-chambered human conceptus at beginning of 3rd week of development; approximately 2 mm in greatest diameter. Black: ectoblast (syncytiotrophoblast). Hatching: transition zone in the ectoblast (cytotrophoblast). Stipple: mesoblast. The lining mesoblast lines the chorionic sac, the covering mesoblast covers the two-chambered endoblast. The solid tailed arrows represent nutrient-uptake from chorionic sac and body stalk; outlined arrow signifies growth movement of amnion. 1) chorionic sac, 2) luminal surface of uterine mucosa.

Fig. 7 Blechschmidt (2004)

The faster growth of the "free" end of the endocyst disk against less growth resistance than in the body stalk area, according to Blechschmidt (1978), makes the ectoderm bulge out into the amniotic cavity and form the expansion crest. The impansion dip is formed in the trunk part of the endocyst disk. Blechschmidt (1978) further explains: *The expansion crest transforms into the impansion dip with a sharp edge (beading edge)* (Blechschmidt 1978, p.33).

The growing beading edge increasingly rolls over the impansion dip. A finger-shaped structure is formed, the axial appendage. Blechschmidt (1978) refers to the zero point or centre from which these development movements are expressed, and argues: *The tip of the axial appendage can therefore be seen as the centre or equally the zero point of the development movements of the entire endocyst disk (*Blechschmidt 1978, p.34).

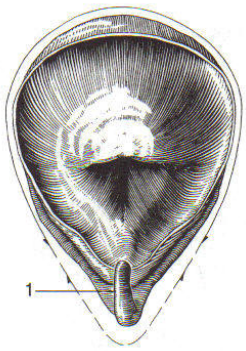

Fig. 2.12. Inner part of the conceptus represented in Fig. 2.11. Human endocyst disc 0.23 mm long viewed from dorsal aspect (i.e., looking onto surface of ectoderm) with amnion cut away. Near the center are the expansion dome (light), the rolling rim, and the impansion pit. Converging arrows: growth resistance associated with the tensing and restraining function of the mesoblast along margin of endocyst disc. 1) allantois. (Blechschmidt Embryo, Carnegie Stage 6).

Fig. 8 Blechschmidt (2004)

2.3.2.2 Late metabolic fields

To understand the late metabolic fields according to Blechschmidt, it is important to explain what he means by limiting tissue and inner tissue.

Limiting tissue is the boundary between fluid on one side and inner tissue on the other side. Inner tissue is enclosed by limiting tissue on all sides. Congestion of intercellular substrates is typical for this kind of tissue. There are two types of limiting tissue. Thick limiting tissue (surface growth is limited) and thin limiting tissue (surface growth is stimulated). One metabolic field implies another. According to Höppner, the cooperation of the fields guarantees homeostasis.

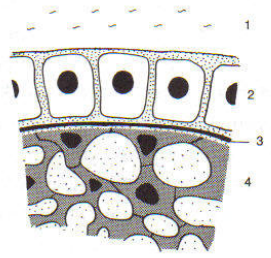

Fig. 3.1. Schematic diagram of the two basic tissues: limiting tissue and inner tissue. 1) fluid, 2) cells of limiting tissue, 3) basement membrane, 4) inner tissue. Close stipple: glycocalyx. Loose stipple: intercellular material of inner tissue.

Fig. 9 Blechschmidt (2004)

Blechschmidt (1978) describes eight late metabolic fields.

Corrosion fields

In a corrosion field, two limiting tissues are pressed against each other, so that there is no space for inner tissue. For example the anterior spinal artery. Also the kidney tubules, which are according to Blechschmidt (2004) initially blind-ended structures containing urine, gain access via corrosion fields to the pelvis of the embryonic kidney. If this corrosion process does not take place due to some pathological change, than according to Blechschmidt (2004) a so called urinary cyst will arise.

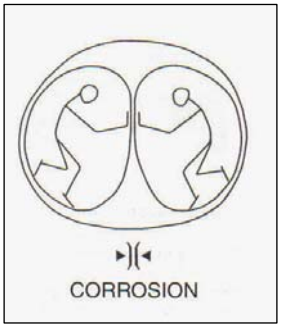

Fig. 10 Blechschmidt (2004)

Suction fields

According to Blechschmidt (1978), the two stick-figures pull apart like bellows, causing reduced pressure or suction within the bellows. They are located adjacent to a limiting tissue. All exocrine and endocrine glands develop in such suction fields. According to Blechschmidt (2004) the liver and the lung, as well as other organs, are examples of especially large suction fields.

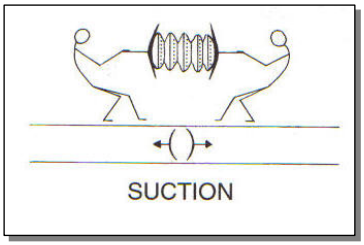

Fig. 11 Blechschmidt (2004)

Densation fields

According to Blechschmidt 1978, the two stick-figures hold a porous dish with a mixture of solids and liquids. While the liquid drips out, the solid particles sediment. In metabolic fields where the biomechanical conditions lead to a loss of liquid intercellular substance, the inner tissue shows analogous thickening. Such fields are called densation fields.

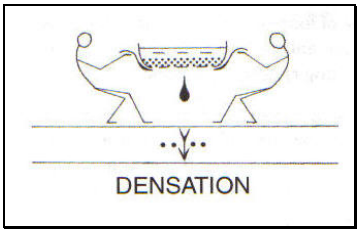

Fig. 12 Blechschmidt (2004)

Contusion fields

According to Blechschmidt (1978), the two stick-figures push a springy lattice together. The lattice shortens. The mashes become smaller and higher. The cells are pushed together in such a way that they flatten. *A metabolic field with flattened cells is termed a contusion field. Contusions fields develop wherever biomechanical compression is encountered* (Blechschmidt 2004, p.78). Example: young cartilage cells. The subsequent differentiation of a densation field may lead, according to Blechschmidt (2004) to the formation of ligaments and capsules of the joints, as well as the tendons of muscles.

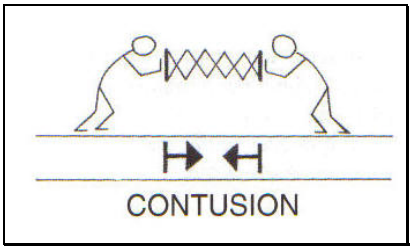

Fig. 13 Blechschmidt (2004)

Distusion fields

The figure is pressing two lattices apart with its arms. In a biomechanical context, the growing cartilage cells push themselves apart. *A metabolic field in which growing cartilage exerts a pushing function is called a distusion field* (Blechschmidt 2004, p.80).

These fields are zones of chondrocyte hypertrophy (stemming body function). Blechschmidt (2004) argues that the cartilaginous skeleton, and not the musculature, represents the first active component of the organs of movement.

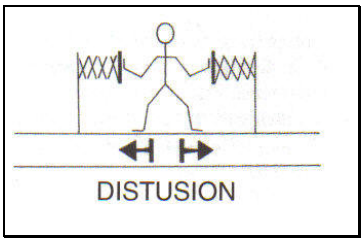

Fig. 14 Blechschmidt (2004)

Retension fields

The figures pull on a strong rope. The rope becomes taut. According to Blechschmidt (2004) the cord does not break and is scarcely deformed. *Tensed inner tissue arises in so-called retension fields* (Blechschmidt 2004, p.81). Example: The developing heel-cushion.

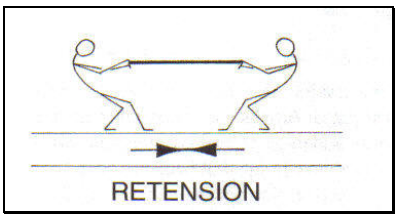

Fig. 15 Blechschmidt (2004)

Dilation fields

The figures pull apart an easily extensible structure. The structure strained by pulling yields without offering any significant resistance and becomes thinner. Blechschmidt (2004) says: *In dilation fields, the living inner tissue cells become extended and aligned in bundles (fascicles) and sheets. Such cells develop into muscle fibres* (Blechschmidt 2004, p.84)

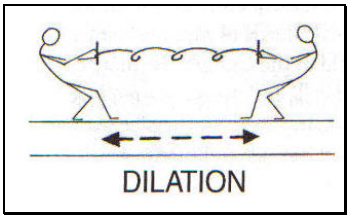

Fig. 16 Blechschmidt (2004)

Detraction fields

According to Blechschmidt (1978), the right figure pulls a hard support toward itself. The left figure tugs on a similar support, which is, according to Blechschmidt (1978), bound to the first by a medium of viscous glue. *Fields in which consolidation occurs as the result of water loss accompanying biomechanical gliding movements over a firm pushing substrate are called detraction fields. Detraction fields are regions where bone arises (ossification zones)* (Blechschmidt 2004, p.86).

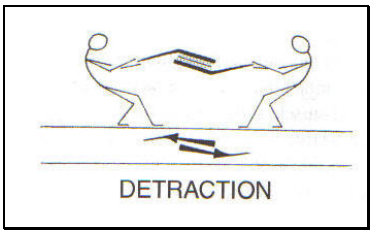

Fig. 17 Blechschmidt (2004)

So metabolic movements can be seen as a change in form, position and structure (Blechschmidt 2004).

These are the late metabolic fields within which the embryonic cells will differentiate. Finally another quotation from Blechschmidt (1982), looking at the interrelationship of function and structure in the inner organs. This principle is being featured here as it also plays a major role in osteopathic medicine. On the interrelationship of structure and function, he writes: *The (inner) structure of an organ is a function of its (outer) form, and its form is a function of its position. […] Position, form and structure should therefore not be considered in isolation. […] Already the morphogenesis of an organ is the start of its subsequent (postpartum) activity* (Blechschmidt 1982, p.57, p.62). Finally, Blechschmidt (1978) is referring to the rhythmic onset of the smooth gut muscles when he argues that: *The entire formation of the gut muscles is probably a rhythmic procedure, possibly a prerequisite for subsequent peristaltic gut activity* (Blechschmidt 1978, p.137). And so according to Blechschmidt (1978), it is important to look at these metabolic fields for a better understanding of the position, structure and function of the organs.

2.4 Tensegrity/Biotensegrity

The section on tensegrity resp. biotensegrity is being featured in the theory section of this study, as some interview partners refer to it in their motility argumentation. For example, according to Kwakmann (2007), tensegrity offers an explanation for the structure of fasciae or blood vessels. Helsmoortel's arguments (2007) also refer to torsion in the organ induced by the diaphragm. This torsion or its compression and its resiliency is to be seen according to Kwakmann (2007) in the context of the tensegrity model. Tensegrity was developed by the American architect Richard Buckminster Fuller and one of his students, Kenneth Snelson, in 1948. Tensegrity is a compound, made up of the words tensional and integrity. It refers to a structural system where structures stabilise themselves through pressure and tension. There are rigid elements (bars) which are connected by ropes. The rigid elements must not touch each other. Snelson (2007) argues that: *My art is concerned with nature in its primary aspect, the patterns of physical forces in three dimensional space* (Snelson 2007). The term tensegrity is also used in medicine and science. The orthopaedic specialist Levin coined the word biotensegrity. It applies the principles of tensegrity to the musculoskeletal system in the human body. It seeks to balance the tension between the bony and muscular structures, among others on the visco-elastic plane (Levin 2007). The pathologist Ingber applies the tensegrity model to living cells. He is interested in seeing how far the extracellular matrix (ECM) and mechanical forces control the development of tissue, stating: *My laboratory is interested in the question of how microenvironmental cues, including extracellular matrix (ECM) and mechanical forces, regulate cellular signal transduction and thereby control tissue morphogenesis"* (Ingber 1997). Below he describes the relationship of shape stability and tensegrity. This statement by Ingber (2000) graphically reflects Helsmoortel's opinion (2007) about the torsion forces of the organs. Ingber (2000) argues as follows: *The tensegrity model states that cells, tissues, and other biological structures at smaller and larger size scales in the hierarchy of life gain their shape stability and their ability to exhibit integrated mechanical behaviour through use of the structural principles of tensegrity architecture* (Ingber, p.1663).

2.5 Vasomotion

Helsmoortel (2007) describes the ability of blood vessels to change their tone as a compensation ability of the body used in its motility work. Helsmoortel (2007) argues: *There is intrinsic motility in the vessels. This is a compensation mechanism* (p.4, /17-18). This phenomenon will therefore be briefly examined in this section. According to Nilsson (2003) and Aalkjaer (2003), vasomotion describes the rhythmic contraction of blood vessels, apart from the heart beat, respiration and neuron control. The motor of this phenomenon consists on the one hand in certain calcium channels within the vessel wall and on the other hand in the rhythmic contraction of smooth muscle cells in the gastrointestinal tract. Nilsson (2003) and Aalkjaer (2003) write about the physiological role of vasomotion: *[…] vasomotion may be beneficial under certain conditions. A vessel with an oscillating diameter has higher conductance (and therefore greater flow) than a vessel with a constant diameter of the same average width. An oscillating contraction might be less costly in terms of energy usage than a constant contraction […] One of the most interesting suggestions is that vasomotion is beneficial for tissue oxygenation, especially in situations where perfusion is critically limited* (Nilsson, Aalkjaer 2003, p.84).

2.6 Interstitial cells of Cajal (ICC)

These cells of Cajal, also known as the pacemaker cells in the gut, play an important role in peristalsis (see 2.1 Definitions). In view of the fact that physiology defines visceral motility as peristalsis, as shown above, this will be looked at briefly here.

According to Sanders (2006) and Ward (2006) Ramon y Cajal described these so called cells of Cajal (ICC) more than 100 years ago. Sanders (2006) and Ward (2006) have found a range of functions of these cells of Cajal, when they say: *Having had a long-term interest in studies of ICC, we are invigorated by the range of biological function these cells appear to affect. We know that (i) ICC are pacemakers and actively propagate electrical slow waves in GI muscles[…]* (Sanders, Ward 2006, p.724).

2.7 The system of ground regulation

For Ingber (2000), ECM plays a decisive role in the morphogenesis of tissues and organs. Kaschowitz (2007) in his approach to motility also refers to ECM as it is understood by Pischinger in his system of ground regulation.

The system of ground regulation was presented by Alfred Pischinger, Professor for histology and embryology at the University of Vienna, in 1975. He describes the procedures in the interstitial space as crucial for understanding humoral-pathological approaches. *Diseases of the organs result from dysfunctions of this upstream ubiquitous system* (Draczynski, 1998, in: Das System der Grundregulation, p.12). Pischinger (1998) writes on the notion of cell that: *Strictly speaking, the notion of cell is only a morphological abstraction. In biological terms, it cannot be taken without the living environment of the cell]* (Pischinger 1998, p.17). According to Pischinger (1998), this change is palpable. Subsequently, knowledge of the kinetic chains and the dermato schema makes it easier to attribute the findings to certain organs. This is also known under the name of projection symptoms (Bergmann 1988).

2.8 The emotional aspect

As all interview partners agree that emotions can always also be involved when dealing with visceral motility and that on the other hand, the therapist with his emotions, according to the interview partners, also influences the patient, an introduction shall be provided here for a better understanding of the statements made by the interview partners. Psychosomatics is a huge area. Here only partial aspects will be named that are relevant for understanding the statements made by the interview partners, as to what extent the emotional status influences the status of the visceral organs. Several authors presume that there is a correlation here. Lindqvist (2004) argues along the lines that mental stress is a possible contributor to cardiovascular diseases such as hypertension and ischemic heart disease.

Also acute mental stress, according to Hayashi (2005), causes vascular responses in various organs. He says: *Insufficient blood flow to splanchnic organs may be associated*

with tissue damage[…], and hence a reduction in blood flow induced by chronic mental stress may lead to tissue damage (Hayashi 2005, p.215).
According to Barral (2006), organs not only react to emotions but also vice versa. Barral (2006) argues: *The brain tries to pass on these unpleasant emotions, and the organs are an ideal corresponding receptacle* (Barral 2006, p.31).

But the therapeutic relationship between therapist and client also plays an important role, as according to Paß (2007), phenomena such as transfer and counter-transfer (resonance phenomenon) can occur. According to Elzer (2004), the patient not only brings his suffering into the examination situation in a compacted state, but he also transfers conscious and unconscious expectations to the physician. The counterpart according to Elzer (2004) is counter-transfer. This is initially unconscious or conscious and is a reaction to the transfer offered by the client. We osteopaths are naturally not psychologists, but it is important to be aware of this phenomenon. According to Bettighofer (2004), transfer and counter-transfer take place as a consequence of intra-psychic and inter-personal organisation and regulation processes. This is why according to Bettighofer (2004), both the therapist and the patient endeavour to ensure that their encounter does not disturb their inner balance over and beyond a tolerable level and try to let the encounter take place so as to unsettle their wellbeing and self-respect as little as possible. Bettighofer (2004) explains*: In spite of being in need of help, and in spite of the frequent projection of magic healing expectations onto the therapist, the patient is also not ready for anything but preconsciously certainly pays attention to sustaining a certain degree of wellbeing, even if on a relatively minimum level. He avoids the risk of further traumatisation* (Bettighofer 2004, p.62).

3. Presentation of the study

The following section looks initially at the questions forming the basis of this thesis and why I have chosen a qualitative approach for my work. It explains why I chose to conduct guideline-based interviews. The interview guideline is then presented, together with the method of qualitative contents analysis.

3.1 Basic contents

This study is based on two key questions:

- Which various approaches are taken to visceral motility in osteopathy?
- How are they implemented?

3.2 The qualitative approach

In view of the fact, as already mentioned in the introduction, that there is little osteopathic literature on visceral motility, the question arises as to the accessibility of this topic. A literature study is not possible for the above mentioned reasons. A clinical study on this topic would go way beyond the means available to an osteopath, as this would entail modern Doppler sonograms and as a rule, we osteopaths generally do not have access to such equipment. Which leaves the approach of proceeding with a qualitative study on the basis of expert interviews. Hopf (2005): *Qualitative interviews play an important role in ethnographic research projects based on participating observation. They are among other things used here to ascertain expert know-how on the corresponding area of research, and to ascertain and analyse the subjective perspectives […]* (Hopf, in Flick 2005, p.350). There are various possibilities for conducting qualitative interviews. On the one hand there is the narrative interview. According to Hopf (2005), the basic element of this interview is an extemporised narrative freely developed by the interview partner, stimulated by an initial question. On the other hand there is the focussed interview. Although originally conducted as a group interview, the group interview form is not mandatory. Here Hopf argues (2005): *Focussed interviews in their original form are group interviews, but they are not tied to the group situation. By focussing on previously defined interview topics, they resemble structure or dilemma interviews. As they are based on interview guidelines, which however are used flexibly, they could also be seen as a special form of partly*

standardised interviews (Hopf, in Flick 2005, p.353). Narrative interviews do not appear to be the right approach as there is a risk of the interview partner digressing too far from the actual topic. This is why the choice is made in favour of guideline-based interviews. The guideline intends to keep the interview on a certain path while at the same time leaving the interview partners sufficient scope for their individual opinions.

3.2.1 The interview guideline – preliminary remarks

The interview guideline has been developed from various issues involved in visceral motility – on the one hand from the general experience of the interview partners in working with visceral motility and the models used for explaining visceral motility in the osteopathic context, and on the other hand from the area covering the emotional impact on visceral motility.

- **General questions on visceral motility.** This is a case of ascertaining the interview partners' experience with visceral motility, how it is implemented and defined, and how important working with visceral motility is in the osteopathic context.

- **Embryology.** In view of the fact that in the visceral motility model, osteopathy is based to a great extent on embryology explanations, this area would appear to be very important in order to develop a better understanding of visceral motility. This includes in particular Blechschmidt's concept which produces a very close correlation between function and structure, just like osteopathy.

- **Other explanation models,** such as vasomotion, cells of Cajal or biotensegrity.

- **Organs and emotions.** This correlation emerges in all forms of medicine so that it must also be looked at in the context of motility

3.2.2 Interview guideline - questions

1. Is the topic of visceral motility an important element of visceral osteopathic training?
2. Or does it tend to appear just on the fringes for the more advanced?
3. What is visceral motility for you?
4. What is the embryology explanation model for you?
5. To what extent does Professor E. Blechschmidt's embryology concept fit in here?
6. Do you know of other possible explanations? Cell motion, vasomotion, biotensegrity?
7. Does the patient's emotional status influence the motility of his/her organs?
8. Does the osteopath's emotional status influence the motility of the patient's organs?
9. Do you use visceral motility for diagnosis in your practice?
10. How, when and for whom do you use motility in your therapy?

3.2.3 Choice of interview partners

It proved easier to select the interview partners than initially expected. Apart from Jean Pierre Barral, who unfortunately could not find the time as he of course is extremely busy, the experts were all gladly willing to share their experience in this field with me. This surprised me at the beginning, but it shows that how topical and important this area of osteopathy is. All interview partners are eagerly awaiting the results of this study.
The selection was based on various criteria. On the one hand, the interview partners should be osteopaths with plenty of experience in visceral teaching, on the other hand they should have produced a number of publications in this field.

Four of the interview partners teach visceral osteopathy at various schools of osteopathy. Three of the interview partners have developed their own osteopathic concept (EVOST) respectively (mesology). One of the interview partners teaches physiology, another craniosacral osteopathy.

The interview partners come from different countries. They include Belgians, Dutchmen and Austrians. The interview partners were contacted by mail or phone and interview appointments were agreed. The interviews were held in Schlangenbad, Herrenberg, Ulm, (each in Germany), Zurzach (Switzerland), Rastatt (Germany) and Maaseik (Belgium). The average interview lasted for about 50 minutes. The last two interviews were each conducted with two interview partners at the same time for time reasons. All interviews were recorded on tape.

3.3 Data acquisition

3.3.1 The transcription

The data collected in this way have to be brought into a permanently accessible form for qualitative analysis of the data. To this end, the spoken word is transcribed into the written form. Kowal (2005) and O'Connell (2005): *Transcription refers to the graphic representation of various behavioural aspects of persons taking part in a conversation (e.g. interview[…]).* (Kowal, O'Connell, in Flick 2005, p.438).
Here the aim is to put the expressed word order onto paper as precisely as possible, to reveal the uniqueness of the interview.
The pages of the transcribed interviews are numbered. Each interview begins with page 1. The lines on each page are also numbered and again begin with 1.
Number of pages of all interviews: 80
Number of words of all interviews: 33,861

3.3.2 Analysis of guideline interviews

After completing the transcription of the interviews, the next step consists in analysing the transcriptions. The contents of the transcribed interviews are allocated to certain categories, resulting partly from the guideline and partly from the interviews themselves.

This can take part in various ways. Schmidt (2005): *The evaluation techniques chosen for guideline interviews as part of a study depend on the objective, the questions and the methodical approach […].* (Schmidt, in Flick 2005, p.447).
The guiding principle is the exchange between material and theoretical understanding.
This exchange process begins already in looking at literature. Experience and observation of the research field also play a major role here. It is also important for the guideline to give consideration to topics which have not been deliberated and which crop up in the material.

3.3.3 Qualitative analysis of the contents

The systematic processing of communication material is the reason for carrying out a qualitative analysis of the contents. In this study, this will consist of a structuring analysis of contents. Mayring (2005) argues that: *Structuring analysis of contents filters out certain aspects from the material, establishes a cross-section through the material on the basis of previously stipulated order criteria or evaluates the material according to certain criteria.* (Mayring, in Flick 2005, p.473.) The interviews are analyzed on the basis of the questions posed in the guideline and allocated to certain criteria arising from the guideline and from the statements made by the interview partners. Later on they will be put in relation to each other.

4. Presentation of the study results

4.1 Definition of visceral motility

As already shown in the theory section of the study, there are various interpretations of visceral motility. According to Stone (1996), visceral motility is a cyclic movement of the inner organs which is related to the movements taking place during embryological development. When asked to define visceral motility, the interview partners answered as follows.

4.1.1 Luc Fieuw:

To define visceral motility, Fieuw (2007) argues that for him visceral motility is the motion when all other mechanisms are excluded. In that sense he explains: *"Visceral motility for me is the movement that I feel when all other mechanisms are excluded. And here I mostly mean the secondary respiratory mechanism. What I then feel is a motility movement. I experience this in practice when the patient remains in apnoea and I place my hand on the organ, that a movement is still taking place. We call this movement motility, and this is the inner vitality, the inner force of the organ"* (p.1/38-43).

4.1.2 Patrick van Dun:

Van Dun (2007) has never looked in any greater depth at the question of motility and answers: *"Only what I have learnt, in other words motility is what we feel of the past, the movements which were expressed in embryology and can now still be felt, as a kind of memory, a recollection of the mobility. An embryological movement which still continues to settle, eventually even when you are an adult"* (p.2/1-5).

4.1.3 Gerald Kaschowitz:

Kaschowitz (2007) explains that the motility concept he learnt at school no longer plays a role for him. He explains: *"Visceral motility in an extended definition is for me a central part of my teaching, because I believe that motility [...] is a quite essential instrument for coordinating the treatment process to the patient. I just feel it is important that it is not reduced to a certain scheme of movements resulting again more in a mechanical picture of the movement. For me it is not a movement but an overall notion of how the body runs vital self-organization, and affects all movement components for me which are intrinsic in the tissue, in the organ, let's say that emerge of their own accord in the tissue"* (p.1/24-27, p.2/14-16, p.2/31-34).

4.1.4 Rob Muts:

Muts (2007) argues along the lines of the function and embryonic movements expressed as motility, when he argues: *"Motility for me is the expression of function. An intrinsic movement of cells and in this case, cells of organs. In defined paths, but individually adapted. There is a certain direction because every organ can only move in its own embryonic movement. Embryology, physiology, anatomy, they build up the understanding that there is a motility"* (p.1/22-23, p.1/27, p.1/33, p.1/35-36, p.2/13-14).

4.1.5 Jerome Helsmoortel:

In his book, Helsmoortel (2007) describes various forms of motility. On the one hand, he describes a motility whose motor is outside the organ, and on the other hand a motility whose motor is actually in the organ itself.
In answer to my question, he replies: *"On the one hand there is an inner (intrinsic) motility, a volumetric mobility which is also described scientifically. Now also frequently in the context of newly emerged pacemakers in the gastrointestinal tract, which have been described for a long time. This is physiological"* (p.2/27-30, p.2/32). In response to my question on the differentiation between intrinsic and extrinsic motility, he explains that in

intrinsic motility, the motor is in the organ, and outside it for extrinsic motility. He argues that: *"Intrinsic means that the motor is in the organ, these are the pacemakers. Extrinsic means that the motor is outside the organ. When outside the organ, it does not belong to the organ. That is the important thing. Which is why it is not a normal feature but a compensation mechanism. This external motor consists of the vessels that use their own pacemaker to retain their form. You could say it is an intrinsic motility in the vessels serving a neighbour. This is a compensation mechanism"* (p.4/10-18).

4.1.6 Rob Kwakmann:

Kwakmann (2007) bases his definition of visceral motility on Helsmoortel's model and compares the visceral motility with motricity and mobility. He argues as follows: *"If you presume that there are movements in space, then my muscle contractions make it more of a motricity. So I move in space because of my muscles. Mobility, which Jerome Helsmoortel finally also defines on the basis of diaphragm movements with the motor of the movement in the organ itself or in the structures themselves, that is what I call motility. For me, motility is actually the least filtered expression of the patient, which is closest to the original expression"* (p.2/13-17, p.2/22-23).

4.1.7 Max Girardin:

Girardin (2007) refers to the physiological definition of motility and explains that there is no point of referring to motility, mobility and motricity in osteopathy, explaining that: *"Motility, I don't know whether that exists in German, but as far as I know, motility is English and is merely a synonym for peristalsis. So it makes absolutely no sense to talk of mobility, motility and motricity in osteopathy, certainly not for the viscerals"* (p.1/14-17, p.1/24-26).

4.1.8 Jean-Paul Höppner:

Höppner (2007) also refers to the physiological meaning of motility. When asked for a definition, he explains: *"Physiological, not embryological. Motility is a notion that belongs to physiology, not embryology. It is a physiological notion, let's not confuse the apples and pears"* (p.1/13, p.1/34-35).

4.1.9 Summary

The statements by the various interview partners reveal great differences in the corresponding definitions for the notion of visceral motility. While ruling out the respiratory movement of the diaphragm, Fieuw speaks of a vitality movement. Van Dun refers to the tissue recollection as a kind of memory. Kaschowitz speaks of vital self-organization. Muts says it is more an expression of function. Helsmoortel divides motility into extrinsic and intrinsic motility, with Kwakmann also subscribing to this view. Girardin and Höppner refer motility to the classical definition of physiology as adopted in conventional medicine. *"History describes motility in classical conventional medicine at the end of the 19th century"* (Helsmoortel J., 2007, p.1/33-34).

4.2 The different approaches in the context of visceral motility

Section 4.2, the different approaches in the context of visceral motility, looks at the different approaches taken by the interview partners. The various approaches are elaborated and named. This classification is arbitrary and makes no claim to being complete, as it only reproduces the opinions of the interview partners. Nor is any attempt made at qualitative evaluation. This arbitrary classification can also always only reflect a partial aspect of the interview partner's work. I hope that I have reproduced the opinions of the interview partners correctly and that the statements are not taken too far out of context.

4.2.1 The embryological, fascial approach

The embryological, fascial approach is a rather mechanical approach. This approach works to a great extent with visceral motility via the fascial system.

4.2.1.1 Fieuw:

Fieuw uses this approach to a considerable extent. He works a great deal with motility in the visceral area. For Fieuw (2007) visceral motility is s quite elementary aspect, when he argues: *"It is a quite elementary, fundamental and principle aspect, because motility for me is also of primary importance. My experience shows that it is often easier to obtain a correction on the level of motility […]"* (p.1/29-31). I call this approach embryological, fascial, because in the interview, Fieuw refers frequently to the embryological development movements and makes the connection between the fascial system of the viscera on the one hand and the membranes of the craniosacral system on the other. He is referring to it as a kind of reciprocal tension membrane, when he explains: *"The organ has a suspension system. The suspension systems are peritoneal structures – the meso, omentum, fascia and ligaments. And these peritoneal structures are in continuity with the diaphragms. That means for me that the diaphragms are the extra-cranial continuity of the intra-cranial.* Fieuw (2007) sees the suspension structures of an organ as being like the sails of a boat. According to Fieuw (2007) the organ needs a reciprocal tension. He explains: *"That means when the reciprocal tension is present on these suspension structures, then my organ can have a good multi-directional expression, which I then call motility. I can then see that the motility movement is actually the same as the embryological development, that the small intestine does a counterclockwise/clockwise movement, a physiological hernia, an involution is present here. The stomach moves in a medial, caudal direction and at the same time, the spleen moves upwards. This is also the embryological movement, and then they come back. It is a flowing movement"* (p.2/36-46, 49-51). For Fieuw (2007), working with motility is a kind of integration which combines the various aspects of osteopathy, when he says: *"When working on the motility level I can best reach the three items we are tempted to call pillars of osteopathy"* (p.8/49-51).

4.2.1.2 Van Dun:

Van Dun, whom I also list under this approach, works with visceral motility more along diagnostic lines, before or after a mobility correction to assess the expression of a structure. Van Dun (2007) is testing how the expression is, the vitality of what he has just done. Although he challenges the embryological approach, his argumentation can be said to be closest to this when he expresses himself as follows: *"This movement, these rotations which occur in an embryological context, why should they not be materialised in structures? The fact that motility is there, that certain movements, even embryological movements are memorised in structures, perhaps I can relate well to that"* (p.4/20-21, p.5/26-27). But he is even more interested in the question as to the materialization of such embryological movements. He wonders: *"The question is, the question which concerns me a bit more: how does this memory of movement work, and finally, is it a memory of movement after all? For the embryological phase finished long ago. So how does it work, this settling in structures?* (p.3/29-32). Altogether he works more with mobility on the visceral level when he says: *"[…] I do think that I work more in the direction of mobility and that the 'fine tuning' then comes later, […] firstly I work via mobility"* (p.6/48-49).

4.2.2 The vitalistic, functional approach

I call this the vitalistic, functional approach because these two adjectives best reflect how I understand the approaches by Kaschowitz and Muts. This approach refers more to the metabolism. Kaschowitz (2007) and Muts (2007) with their visceral motility approach try to treat on this more profound level. The focus is therefore less on the mechanical aspect of visceral motility and more on the vitalistic, functional.

4.2.2.1 Kaschowitz:

For Kaschowitz (2007), this approach is the central element for entering into the dialogue process with the patient. It is important for him that the expression of self-regulation is not

reduced to a mechanistic model. He provides the following explanation: *"Motility is actually the central element of the process. For me it is just important that it is not reduced to a certain scheme from movements which would result in a more mechanistic picture of the movement. This is the central point for me"* (p.3/31-32, p.2/14-16). With reference to the embryological explanation model of visceral motility, his arguments also move away from the mechanical model through to a biodynamic, metabolism-geared explanation approach. Not in terms of directing movements or rhythms, but as an expression of metabolic processes, in the extended meaning of ground regulation. He says: *"I see problems with the embryological development history [...] in that it directs the movement direction too much in the imagination. That means it is a scheme which results from this, or yes, yes, I fear that with regard to the embryological development of the structures, too strong ideas emerge as to how motility is expressed. I feel it is dangerous to use it as an explanation model, as the sole explanation model for motility. I think that in terms of this mechanical aspect, the history of the embryological origins is justified in being mentioned, but I would not overdo it in using it as an explanation model for motility*. In the view of Kaschowitz (2007), Blechschmidt's metabolic fields rather reflect the dynamic in self-regulation. He argues: "*In this case as development process of the structure, where structures are formed via cell movements, via fluid flows, via boundary layers or dynamic boundary layers"* (p.3/40-44, p.4/8-9, p.4/24-31). Kaschowitz uses motility as a stylistic device to enter into the dialogue process between patient and osteopath.

4.2.2.2 Muts:

Muts is also attributed to the vitalistic, functional approach, because in the interview he frequently spoke out against an analytical approach in osteopathy, explaining: *"And actually, osteopathy and certainly visceral osteopathy has nothing to do with an analytical system with 'mechanika'"* (p.4/5-6). For Muts (2007), motility is an expression of function (see definition). Function for him is vitality, and vitality entails the ability to adapt to the environment. In this context he argues about adaptation to the environment, in the sens of Sandler(?), when he explains: *"Function can be translated as vitality. […] Function is an expression of the fact that I can adapt to my environment. That is a cell, a tissue, it is two tissues together, it is an organ, it is all organs together, it is an organism"* (p.8/2-6). In his

approach, words such as hierarchy or evolution also play a certain role, both in phylogenetic and also in ontogenetic terms. Given that according to Muts (2007), the visceral system develops very early on, this also includes a certain status in the organism. Here he explains: *"For me it is the sequence of what is there first, and that is an ectodermal and an endodermal system. In other words, a cranium and a viscera. In evolution, the viscera is there first. The viscera determine my head and certainly the rest of my body"* (p.6/38-41). However, for Muts this vitality or function is not expressed along the lines of special rhythms and phases. According to Muts (2007), there are 1,000 rhythms in the body – respiratory rhythm, heart rhythm, etc. These are to be understood rather as a didactic model, when he argues: *"If I place my hand somewhere and feel something, then I feel live tissue. I can analyze it in various rhythms, but I can only feel the rhythms that I know. It is always not enough. I don't know enough. I don't understand life* (p.10/6-9). *Nor can you define what a healthy rhythm is"* (p.10/26). On the two phases frequently used in osteopathy, Muts (2007) says: *"I don't know two phases. The earth rotates and I can say I'll call the one part day and the other part night. Then I have two phases. Actually the earth rotates. I see motility in the same way. I don't have two phases. I have a movement. And this movement is three-dimensional"* (p.9/26-29).

4.2.3 The extrinsic/intrinsic approach, or visceral motility as compensation

This approach was developed by Helsmoortel et al. (2002). As already mentioned in the definition section, it divides visceral motility into a form of extrinsic motility emerging outside the organ and a form of intrinsic motility emerging inside the organ itself.

4.2.3.1 Helsmoortel:

According to Helsmoortel (2007), extrinsic motility is not normality but compensation in the sense of vasomotion, because it stops, when treated correctly. He explains this as follows: *"But this spatial mobility combined with motility is not normality. Not at all. And*

the proof that this is not normality is that it stops when it is treated correctly. Science has verified, as described for example by Hering at the end of 1900, that the motility phenomena actually only occurred when there was a resistance on the vessels., at least with view to most test patients in conventional medicine. So this is a compensation mechanism to support the structures where there is resistance on the nutritional level" (p.2/17-19, p.2/22-27). According to Helsmoortel (2002), this mechanism results from the sagging of the organ induced by a loss of tension. This causes a mechanical pressure or tensile strain on the vessels. They in turn try to bring the sagged organ back to its original position by increasing the blood vessel tone. If the vascular system manages to restabilise the organ, according to Helsmoortel (2002) this extrinsic motility movement stops. Intrinsic motility according to Helsmoortel (2002) is a movement originating in the organ. This movement is based on various causes. On the one hand, Helsmoortel (2007) describes intrinsic motility as volumetric motility along the lines of torsion activity. This is seen in a strong relationship with embryological volume growth. On the other hand, in the genesis of this intrinsic motility he also refers to the function of the pacemaker cells (the cells of Cajal). This activity is also referred to as the migrating motor complex (MMC). In this context, he explains it in form of a torsion activity. In the sense of tensegrity, when he argues: *"In the osteopathic concept, I see a volumetric motility expressed by the dualism of the organs which is expressed in the form of torsion activity. Torsion activity is an inner compensation possibility for the organ, precisely because of the dualism, where part A can complement or compensate part B. In this sense there is a torsion which causes a torsion axis and torsion torques which are to be seen in relation to the emergence of the pacemaker cells, which themselves are of mechanical origin. Mesodermal and not ectodermal. They have nothing to do with let's say a neurological control"* (p.3/6-13). Helsmoortel (2007) also speaks of a relational motility when an organ moving in space impacts on its neighbourhood. He explains: *"From now on, when we speak of let's say extrinsic motility in the foregut, then by definition extrinsic motility is a spatial movement. As soon as the organ has moved in space, it impacts on the neighbourhood. And that also induces a possible motility in the neighbourhood. Then there is what is called relational motility. The body uses it all the time"* (p.14/13-17).

4.2.3.2 Kwakmann:

Kwakmann (2007) is also attributed to this approach, as he repeatedly refers to Helsmoortel. He is also principally of the opinion that there is extrinsic and intrinsic motility. But he tends to take a more functional approach when he says: *"For me, motility is actually the least filtered expression of the patient, which is closest to the original expression"* (p.2/22-23). He also refers to the embryological growth movement which is important for the genesis of the motility movement. So he makes the difference between embryonic development and embryonic growth, when he explains: *"I think that one important subject will never be characterised in embryology, and that is growth. Which moves Jerome Helsmoortel e.g. very much in this A-B direction, i.e. this dualism in every organ. This cannot be explained by embryology, right? But it can be explained by growth. There are so many factors which actually play an important role in growth and this is often forgotten. And I think that here there are many more possibilities for explaining motility than in embryology on its own"* (p.4/47-48, p.5/6-8, 11-13). Kwakmann also refers to the two phases expansion and retraction. He makes a connection between the terminology used by Blechschmidt (limiting tissue and inner tissue) and these two phases when he explains: *"Expansion as fluid element in the body and retraction as fascial element in the body. And it is the altercation between the two which in the end gives structure to a tissue. It gives structure to a limiting tissue and to an inner tissue. The one fills with water and the other drains the water and has another structure. And depending on the form in which pressure or tension is exerted, this results in further processes. But these are only the consequences of this primary development - expansion and retraction"* (p.7/6-12). Another important aspect for Kwakmann is the chronology of development. Every structure also takes on a function for the organism as a whole. Furthermore, organ systems develop in a correlation. He says: *"And I believe that the organ systems, or the organs as such, take on a function not only for themselves but also very clearly for the whole body. And I think it is this chronological principle which comes, functionally, to functional maturity at the same time, and which retains its functional context for life"* (p.10/17-18, 30-32).

4.2.4 The osteopathic approach by Girardin and Höppner

The osteopaths **Girardin** and **Höppner** do not fit in with these approaches. They work with their own concept according to the basic sciences and sections, called EVOST (evolutionary osteopathy).

4.2.4.1 Girardin:

When asked about special visceral teaching, Girardin (2007) replies, that there should be no special osteopathic teaching. He replies: *"I do not think that there should be any special osteopathic teaching at all. What there should be is philosophy and basic science. Anatomy with a capital A, from embryology via cytology, histology, microanatomy, macroanatomy. And macroanatomy not only from books but from sections. Sections, as in medicine. And then I'd say functional science, along the lines of physics, chemistry, biology, the theory of evolution, I would even say palaeontology and physiology. And that is all. But followed every time by a revision of philosophy of osteopathy. And palpation, an awful lot of palpation"* (p.5/14-22).

4.2.4.2 Höppner:

Höppner (2007), quoting Still, adds: *"Our students should know at least 90% of what has been written about macroanatomy before they enter our clinic rooms. Autobiography"* (Still). I do not know which page, but it can be traced (p.5/28-29, 31).

4.2.5 Summary

The approaches presented in section 4.2 provide an overview of how the interview partners deal with the topic of visceral motility. One the one hand, the more classical

embryological, fascial approach used more by Fieuw and van Dun, on the other hand the vitalistic, functional approach by Kaschowitz and Muts. Helsmoortel and Kwakmann argue more for the extrinsic/intrinsic approach, while Girardin and Höppner do not use a visceral motility approach. The next section will look at how the various approaches are implemented in practice. Here again, this can only reveal a partial aspect of the work of the interview partners.

4.3 Implementing the various approaches in practice

Section 4.3 looks at how the various approaches to visceral motility are implemented in practice, how the interview partners work with visceral motility directly with their patients.

4.3.1 Fieuw:

Fieuw (2007) uses various principles for implementation in practice. He works on the basis of the homoeopathic principle, achieving as much as possible with as possible. Synchronization of the organs is also an important principle for Fieuw. He too uses the embryological classification of the primitive original gut for his therapy, and all encased in Sutherland's principle. He says: *"*[…] *Osteopathy for me is about achieving as much as possible with as little as possible. Along the lines of classical homoeopathy. And as we're talking about the viscerals, I also give importance to synchronization between the various organs. Caecum / small intestine, small intestine / sigmoid, rectum / midgut, stomach / liver. That problems recur at times, that corrections do not persist, because asynchronization is present in the various cogwheel systems. If we presume I find a restriction, remaining with the duodenum, then in fact I do not directly correct the duodenum in terms of motility."* Fieuw (2007) explains that when working locally, he takes the power of the remaining midgut and foregut and brings the potency of the body to this point. He does not try to work where there is nothing. He continues to explain that: *"Yes and then I do a repetition test. For example another Duo 2 locally, to check if it is free or*

not. And if it has freed itself, I move away globally from my patient and take contact with the feet, head and make a judgement, an evaluation, because as I said, the reciprocal tension membrane forms the suspension structures […]. For me, Sutherland's principle really produces a nice symbiosis between mobility and motility where in the point of balance I go into the restriction, apnoea, secondary respiration, inner force, vitality. It looks easy, but it is not easy to do" (p.8/47-48, p.7/36-39, p.6/37-41, p.7/1-4, p.6./25-29).

4.3.2 Van Dun:

Van Dun (2007) works with visceral motility more in the diagnostic sense. Before and after a mobility correction. It also frequently defines the last phase in his treatment. He goes from the one to the other and says: *"Within a treatment, you go from one to the other, as you go from diagnosis to therapy and from therapy to diagnosis […].* According to van Dun (2007) it starts possibly more with mobility, and possibly a bit more with structure, but then it quickly moves on into motility and, testing what is the expression, what is the vitality from what he has just done. He proceed not purely in diagnosis but also in therapy via motility. Further he explains:" *For me personally, this is the last phase in my treatment. Perhaps the first in diagnosis, but also the last. Once I have restored mobility on all levels, […] then I go onto the motility level to feel when a patient then has good motility, then I know that the mobility is also in order"* (p.6/30-34).

4.3.3 Kaschowitz:

For Kaschowitz (2007), motility plays a major role in his treatment. He uses motility in the dialogue principle as a connection between patient and therapist. As a possibility of bringing the therapeutic processes together in one point, and not having case history, examination and therapy following on in succession. He says: *"Yes, the fact is I simply cannot conceive how I am supposed to work in consent as an osteopath without having motility acting as a guide, as an opposite, as a dialogue partner. The whole treatment*

process is conducted from a dialogue position and not on the basis of any theoretical considerations […]." For Kaschowitz (2007) this dialogue is possible because the body uses motility as a means of expression: *"and in the process to get into the mutual moment as well as possible, not getting stuck in the past of what you have learnt, and not in the future of what you want to achieve, but forming the mutual moment. And here, as a replacement for formulating objectives and as a replacement for referring to past, proven schemes, to face the moment, to take the guiding instance from the current moment, from the dialogue with the tissue. […] probably our method is not the only one, but I think that to a great extent, osteopathic medicine is defined by the constant interaction of the process of the evaluation of medical findings and the process of treatment and therapy, which in fact, in strict terms, comes together in one moment […]"* (p.10/6-13, 19-23). According to Kaschowitz (2007), the quality of own expression (motility) could be the guiding line in the treatment process.

4.3.4 Muts:

Muts (2007) uses almost exclusively visceral treatment methods on account of his patient structure. He treats many patients with chronic diseases. His approach is primarily via mobility to improve the organic contact surfaces. He works to a great extent along differential-diagnostic lines on the basis of the embryological and physiological contexts. He explains: *"Actually I work only with visceral methods. The patients that come to me are people with very chronic diseases who have had problems for a long time that are more geared to the inner organs. […] I actually always work first at mobility, because the contact surfaces of the organs, certainly peritoneal, pleural or pericardial or whatever, the contact surface has to be free first before the function, the motility, can express itself. Where this is still not the case, this is where I have to work with motility."* Muts (2007) works first towards dysfunction which flows into motility. He also refers to differential diagnosis and argues: *"I only work with differential diagnosis, i.e. I work with all things together. With great consideration of function, the embryology level, the level of expression possibilities, anatomy, in the interaction of everything I find in the body. So if I*

find a hip problem, I find a liver which has mobility and motility malfunctions, then I treat the liver with reference to the hip joint" (p.5/ 20-22, 32-34, 37-40, p.6/1-3, 5-8).

For Muts (2007), cell physiology plays an important role in his work, particularly of the connective tissue. He says: *"Yes, but physiology not on the level of organ physiology but physiology on the level of the cell. Physiology within the connective tissue"* (p.6/14-15).

Muts (2007) often refers to motility as a notion of function. When asked which parameters indicate corresponding malfunctions, he argues: *"Those are parameters which can be ascertained subjectively on the one hand, those are a patient's complaints, no matter on which level, aspect, emotional or physical (parietal) or wherever. The expression is somewhere in the body, i.e. symptoms. Secondly, you can make relatively objective findings. Thirdly, a real osteopath should examine his patient with a holistic approach and feel in his objectivity where the expression is less or scarcely present within the individual. This then gives me three indicators to say, OK, there is a malfunction"* (p.8/18,24).

4.3.5 Helsmoortel:

Based on the concept of extrinsic and intrinsic motility, Helsmoortel works with extrinsic motility as a compensation mechanism. As the body shows this compensation, according to Helsmoortel (2007), it is not capable of "freeing" itself. He frees this mechanism so that the body no longer needs this compensation and this form of motility can then no longer be palpated. Helsmoortel (2007) argues like this: *"Extrinsic motility is a compensation mechanism which the body has chosen, and I use this to achieve its objective. That means by selecting a compensation track, the body has an objective. It fails to reach its objective, otherwise it would no longer be present. So what do I do? I support the body in its objective up to the moment where it disappears. That is exactly the opposite of whatever is being done. Although everyone says you have to provoke. I call that stirring it up. It is pointless. I also never use the inspire/expire direction, that does not make sense for me. The only phase that is active is the inspiring or ascending peritoneal movement. The expiring movement is passive, not active. That has no point. That is my work, with direct success"* (p.13/37-46).

Helsmoortel (2007) also makes the connection between a mechanical dysfunction and the metabolic level. He uses an example for this purpose: *"If there is a – let us say – mechanical dysfunction, then the body tries to compensate on a metabolic level. If you then use this metabolic level, the mechanism could possibly be freed. I believe for example, what conventional medicine is currently proving, that allergic phenomena which are present in increasing quantities are in fact only triggers or hyperfunctions of blockades of two different mechanisms. Instead of an endocrine or neurological regulation, it is the immune system that reacts. It hyperfunctions for the two dysfunctioning mechanisms, and that causes an allergy"* (p.9/7-14). To assess the findings of this compensation mechanism, among others Helsmoortel uses inhibition. Helsmoortel (2007) woks along integrative lines, when he argues: *"[…] to work along relational, integrative lines, you have to put two levels in relation. Firstly, you have to obtain findings, e.g. inhibition technique. Secondly, when talking about vessels, we talk about vessel spasms, not vessel peristalsis, we do not talk about vessel statics and dynamics"* (p.14/24-25, 35-36).

4.3.6 Kwakmann:

Kwakmann (2007) refers to working with visceral motility as a kind of process where you have to push a few "curtains" to one side first in order to access this motility level. He explains: *"But in fact I think that even within a treatment; this is a process which you come to at a certain point in time when you have improved the mobility, improved the fascial mobility. Right? That is when this expression occurs. And that then, when there is a problem in the organ, or if there are problems on the static level, where you think the organs can also be partly responsible, that very often you have to push a few curtains to one side, like curtains on a stage, before the image behind them starts to play"* (p.2/31-34, p.3/12-16).

Once Kwakmann has reached this mobility improvement on a fascial level and is on the motility level, he uses the principle of amplification, i.e. he goes with the movement. Kwakmann (2007) argues like this: *"So if I am on the level of the motility movement, I go with the movement, according to the principle of amplification, […] I do not go into a fascial movement, i.e. away from the organ, but I go with the movement, amplifying the*

principle, and look at what in the end the organ or the body is doing with it. Right? Does the breathing change? The blood circulation? Is heat generated? Is an extension generated? An expansion feeling? Or a retraction feeling? According to Kwakmann (2007) are these expansion and retraction forces everywhere, every single cell has them. He argues, that the more it is subordinated in a group or partly loses its function in a group, the more directional this movement. Further he explains:" *In other words, it depends on its position with regard to its surroundings. And that then increasingly becomes its own expression. But in the end, the fact is that this expression, the normality is difficult to describe, i.e. I cannot say this and that is the motility movement of the stomach, because it can be different for one person or the other"* (p.3/27-32, p.4/22-28).

4.3.7 Summary

The ways of implementing visceral motility in practice presented here in section 4.3 also show the different approaches taken by the interview partners. Fieuw uses a more homoeopathic, synchronization-based implementation of visceral motility. Van Dun works more in diagnostic terms. For Kaschowitz it is the central guideline in the dialogue process with the patient. Muts does not use it until working with the mobility of the organs to improve the fascial contact surfaces. Helsmoortel uses compensation shown by the body to support it in its objective. Kwakmann opens various curtains by improving mobility to get to the visceral motility movement.

4.4 Emotionality in the context of visceral motility

The section on "Emotionality in the context of visceral motility" does not look at the interview partners' deliberate intention to trigger emotions in the patient. No psychosomatic-osteopathic approach is to be conveyed here. On the contrary, the interview partners are more concerned with being aware in a more psychosomatic sense that the emotional condition of a person (patient) has an influence on the function of his organ systems. This is also possible in a somatopsychic sense with a correlation existing between the soma and the psyche.

4.4.1 Van Dun:

In this context, Van Dun (2007) remarks that this emotionality is expressed on all levels, when he explains that: *"Not only on the level of motility, also on the level of mobility, also on the level of motricity, on all possible levels involved with movement. Perhaps the reverse is also valid. Every memory, every emotion is perhaps a movement in its own right. So if memory and emotion are movements and can possibly materialise in structures, yes then I also think that the structure can change and motility can change, mobility can change, depending on how one functions psychologically"* (p.4/38-45).

4.4.2 Kaschowitz:

Kaschowitz (2007) also sees the relationship of emotions and organs as a completely essential aspect, the way in which the basic perception of the personality is quite closely associated with how the tissue is expressed on the motility level. He argues: *"I think that the emotional frame of mind, the basic perception of the personality is quite closely associated with how the tissue is expressed on the motility level. […] the question whether the emotional status influences the motility of the organs is in my opinion one-sided. I see it as an interdependency. And it is the question as to whether perhaps the counterpart possibly comes closer to the truth – namely that it is the inherent expression of the tissue*

which defines our emotionality rather than emotions defining the tissue" (p.5/36-38, p.6/14-16).

4.4.3 Muts:

Muts (2007) underlines the importance of the emotions. As already mentioned, for Muts (2007) motility is an expression of physical, emotional and mental function. In his view, motility is finally also a delayed expression of emotional existence. He adds: *"[…] because actually, we release these systems. We set them moving freely. And so all substances involved with emotions are released. We now understand a bit more about Ayurveda. Chinese medicine has known it for 2000/3000 years already. Now we know it too, it is called neuroimmuno-biopsychology. But what is really important, substances that have been released change our behaviour. This is a reciprocal effect: you cannot tell whether it is psychosomatic or somatopsychic, it is a system"* (p.4/27-33, 38-40).

4.4.4 Helsmoortel:

In the interview with Helsmoortel (2007), he qualifies the psychosomatic path along more psychomental lines. But he sees the somatopsychic path as the more important one. He argues: *"I have been working for more than 20 years at what I call somatopsyche, and not psychosomatics. For me, somatopsyche means that when a structure has a certain form, it has also induced a certain behaviour. As an example here, I take someone who has an atonic stomach: a child with an atonic stomach is a child who fills his plate to overflowing, demands lots of food but cannot eat it all up"* (p.11/7-11). He continues by referring to popular sayings, such as the liver is anger and the kidneys are fear. He refers to the relationship between blood vessels and motility and argues that: *"In the context of motility, and here I take up a personal position, the fact is that the blood vessels are the motor of motility. Then the emotionality of motility has to be connected with the emotionality of the structure, blood vessel and its content. And possibly its endocrinal or neuro-regulation. Personally I am always critical when they say the liver is anger. The liver is not anger. The*

liver expresses itself sometimes this way by the need to express itself, to decompress or decongest. When they say the kidneys are fear, I can accept that through their connection to the adrenal gland which has a corresponding function, but it is not always like that" (p.1119-22, 34-36).

4.4.5 Fieuw:

Fieuw (2007) refers more to the fascial, peritoneal system. In his approach to visceral motility, he speaks of a kind of reciprocal tension membrane. With regard to emotionality too he refers to the peritoneal structures. For Fieuw (2007), an emotional problem is not expressed on the level of mobility but rather on the level of motility. He continues by referring to the suspension system and argues: *"As I see it, much psychoemotional tension is expressed essentially towards the suspension system. The box becomes too small, too confined. And I cannot get the psychoemotional or emotional release if I move the organ a bit from top to bottom, because it is fixed at the top, or from the outside to the inside, because it is fixed at the outside. I get it when I really go deep down onto the cellular level, and suddenly there it is. I do not want any emotional release but there it comes. We are not psychotherapists, we are not trained in this subject, right?"* (p.4/ 47-49, 50-55).

4.4.6 Kwakman:

When it comes to emotionality, Kwakmann (2007) refers again to chronology and the resulting functional contexts which an organ assumes for itself but also for the body. With reference to Chinese medicine, he explains: *"My viewpoint is slightly influenced by the ideas of Chinese medicine […] how I position myself in the end with regard to my surroundings. And it is quite possible that a left frontal lobe is related to the gall bladder. Or the kidneys with the paranasal sinuses. And embryology confirms that these are sequences in time; this can also be read in the principles of acupuncture and philosophy"* (p.10/16, 23-24, 35-38).

4.4.7 Summary

The statements by the interview partners reflect the close relationship of a patient's emotional condition with his visceral motility expression. Research is also looking at this topic, with studies dealing with mental stress and blood circulation.
For example, Hayashi et al. (2006) examined the circulation system and vaso-constriction of the renal artery and the superior mesenteric artery under mental stress. Carter et al. (2004) examined the circulation of the lower arm under mental stress. According to Rüegg (2007), both cortisol and the vagus nerve can inhibit immune defence in the intestinal mucosa. This means that both intestinal motility and inflammation symptoms in the gut are influenced by the vegetative nervous system, by the brain and psyche.

4.5 Interaction between therapist and patient

Section 4.4 described more the intra-personal relationships between emotional condition and motility expression. Section 4.5 looks at the interaction between therapist and patient on the basis of the statements made by the interview partners.
Interaction between therapist and patient plays an important if not central role also in osteopathy. In an interview with Ledermann (2007) published in the magazine for holistic medicine, he says: *"The most important thing in clinical practice is first and foremost your relationship with the patient, the relationship between therapist and patient. Secondly there is the patient's and your own beliefs, and thirdly, what you are actually doing to the body in concrete terms"* (Lederman 2007, p.23). Bettighofer (2004) presumes that neither therapist nor patient are in a position to recognise an independent reality discovered by them. This reality is actually only constructed by perception and its neurophysiological and learnt principles. According to Bettighofer (2004), the meeting between therapist and patient corresponds more to a situation of noncontingent reward experiments (see appendix). Bettighofer (2004) writes: *"The need to structure what has been perceived and order it according to known patterns can certainly be seen as the […] principle constant*

factor, without which orientation and behaviour adapted to the specific situation would not be possible" (Bettighofer 2004, p.25).

4.5.1 Van Dun:

Van Dun (2007) reports on the possibility of transference from the patient to the therapist and also counter-transference in the other direction. But he also sees this as a therapeutic chance when he says: *"The patient can transfer his emotions, his psyche to us as practitioners. Both in the case history, in the examination or also in the therapy. We must protect ourselves from this a bit, so that it goes in both directions. On the other hand, this can be an enrichment. You could then say you are on the same wavelength. On the same wavelength is not only physical but also psychic. So in this case it cannot be really bad, it can also be an enrichment, it can also be a means of achieving more with this patient"* (p.5/6-10, 13-15).

4.5.2 Fieuw:

Fieuw (2007) emphasises the importance of a fulcrum. He also feels it is important for the therapist to be in his own centre and to do corresponding exercises. Here again he makes the comparison with Sutherland's reciprocal principle. He says: *"[...] many do Tai Chi, Chi Gong, many things for how do I feel. If I am not at ease in my body, if I do not have both feet on the ground, I will be tired after only two patients. I will not have any more energy, any vitality, and it is important for me even as therapist that I am in my midline and that I take care of myself. The fact is, if I feel exactly the same after three or four patients in succession, then I ask myself whether it is not my own system that I am transferring to the patient. And at the end of a treatment, given that motility, energy and so on is all close at hand, that the patient remains in his energy and that I remain in mine. I do not have to take his problems with me and start suffering at night from the stress that I have released during the day. I think that is what is meant by reciprocal"* (p.5/25-36).

4.5.3 Kaschowitz:

Kaschowitz (2007) refers to several aspects. On the one hand, he talks about satisfying the "patient requirement". On the other hand, he talks about the requirement that the osteopath always has to take a neutral position. Bettighofer (2004) generally queries the possibility of neutrality along the lines of non-influence also from the therapist in an interaction between two people. According to Bettighofer (2004), even non-communication is a communicative act which is perceived and interpreted by the other person.

Kaschowitz (2007): *"Firstly, I would hope that this question or the resulting answer does not generate a pressure to have to be neutral. Not a new requirement how a therapist has to be. When we talk about treatment being a dialogue on the level of tissue, then there is a dialogue between the tissue of the patient, in the background with his emotionality and person, and with the second dialogue partner. Dialogue is between two partners, the second partner being the therapist. And no matter how the therapist is organised, he will always have an influence. So I think it is illusory not to have an influence or to avoid transferring anything. The patient comes with a demanding attitude and automatically, without having actually taken a corresponding decision, automatically you are under pressure, an inner requirement which I have to satisfy, which I have to take into account, which I now have to face up to so that I can cope with it"* (p.7/4-6, 12-17, p.8/4-7).

According to Bettighofer (2004), this "intrapsychic role play" between patient and therapist is inevitably activated. Consequently it has an inner scheme and the mechanisms used for defence and coping which, when refreshed, make the therapist feel the "urging" coming from the patient so that the therapist reacts in a typical fashion. But Bettinghofer (2004) says that they are present in any case, even if they are sometimes so subtle, familiar and scarcely noticeable.

Furthermore, Kaschowitz (2007) looks at the question of the observer in a therapeutic situation. He says: *"It begins for example already with the question. When I examine a patient, then I am the observer of the patient and obtain information. This already results in the first question, who is observing here? Who is obtaining the information? Why is he looking like that? Because through the way in which I look at the patient, I am already having an influence, an implicit influence, on what information I can obtain"* (p.7/30-35).

According to Bettighofer (2004), the observing therapist influences even the observed patient with his observation so that he himself is influenced in his own observation. In this way, both generate their transference and counter-transference feelings (2007): *"I feel it is very important to sharpen this awareness. A second aspect is self-guidance. Self-guidance in the process, the question of the role which I as therapist adopt for the patient […]"* (p.7/44-46).

4.5.4 Muts:

Muts (2007) refers more to the long-term effect a therapist has on the patient when he says: *"The emotional status as an expression of health, yes. But in the here and now, no. Absolutely not. Over a matter of weeks and months, yes absolutely. But it is delayed. The emotional status of a therapist, who, shall we say, is ill for three months, or in a phase of emotional aggression, or is depressed, does not have any influence on the patient's motility, but he is less able to feel it. Because his own system is blocked. Instead, the whole system of cellular life is delayed, thank God"* (p.5/6-11, 12-13).

4.5.5 Helsmoortel:

Helsmoortel (2007) refers to a new aspect: the therapist in a balance of power. He says: *"But the interest is often connected with a balance of power, the problem therapist / patient. We are very often in a balance of power and very often we project our own pathologies. Everyone has to hold his emotional, physical and mental level or why not include even the spiritual level in a balance. Again, this takes time, it takes humility, and I think the osteopath who does this must be an ideologist and make his life dependent on it"* (p.12/41-43, p.13/9-12).

4.5.6 Kwakmann:

Kwakmann (2007) also makes reference to the balance of power in therapy. He also sees a fulcrum as being very important. He explains: *"The therapist should certainly be aware of this person-to-person level, that at the moment when a patient comes and asks his question, that he is revealing himself on a broad scale. This gives the therapist great power. Which should be handled very carefully […] Compared to wellness, in the therapy it is always a case of the therapist assuming a point of view. He reflects what he encounters and gives an answer. Point of view means contact with both feet, contact with the couch, so that he can say he is in a stable stance. This is the first form of hygiene"* (p.11/34-37, p.12/7-10).

4.5.7 Summary

The statements and opinions of the interview partners on "interaction between patient and therapist" clearly illustrate the importance of this therapeutic relationship. The therapist should always be aware of the processes taking place on a verbal and also non-verbal level. Wührl (2005) appropriately describes it thus: *"Osteopathy as an experience demands great stress tolerance on the part of the therapist. We must be able to endure the extremely intense feelings that patients can trigger in us without succumbing to them and losing ourselves in them. This requires a special kind of attention. As we won't be deprived of the adventure osteopathy, it is necessary to reflect on the therapeutic experience. In many therapies it is natural for counter-transference and projection by the therapist to be part of the self-reflection and supervision, but in osteopathy this is more the exception than the rule. The innocence and alleged neutrality with which we project ourselves into the patient's tissue or open ourselves for projection is implausible. What if the projection becomes the projectile? Our trip through the patient's tissue should really carry critical self-reflection in its luggage. And it is inevitable that what the osteopath experiences becomes a central issue"* (Wührl 2005, p.29).

5. Summary of the study

Section 5 "Summary of the study" summarises the results of the study. The summary contains the definition of the notion of visceral motility, the various approaches taken by the interview partners with regard to visceral motility, how this is implemented in practice and the aspect of emotionality when working with visceral motility. Prevalent definitions of motility in dictionaries include the totality of unconsciously controlled movements of the human body and its organs, according to Duden (2007), and the ability to move as a reflex or under vegetative control, in the narrower sense of the organs (peristalsis), according to Pschyrembel (1998). A comparison with the currently prevalent definition of visceral motility in osteopathy according to Barral (2002) and Liem (2005), stating that the origin of this movement phenomenon is in embryonic development, reveals great differences. There are also differences in the statements made by the interview partners when it comes to defining the notion of visceral motility. Fieuw (2007) defines visceral motility as a movement which is noticeable after eliminating the breathing movement of the diaphragm (apnoea). This movement which can then be felt is three-dimensional and generally respects the movement of embryological development movement. For Fieuw (2007) this is a most elementary part of his treatment. Van Dun (2007) refers to visceral motility as a memory of the embryological past. For Kaschowitz (2007), the classic osteopathic definition plays no role in his work. Rather visceral motility is the stylistic element he uses to adapt the treatment process to the patient. Muts (2007) describes visceral motility as the expression of function. Helsmoortel (2007) describes extrinsic and intrinsic motility: extrinsic motility as compensation by the body and intrinsic motility resulting from mechanisms within the organ. Kwakmann (2007) bases his definition of visceral motility on Helsmoortel. He adds to this definition the aspect of the least filtered expression of the patient. Girardin (2007) refers in defining visceral motility to the notion of peristalsis normally used in physiology and conventional medicine. Höppner (2007) refers to the physiological definition of visceral motility. Having worked for many years with embryology in general and with Blechschmidt's concept in particular, he feels it is not legitimate to seek the definition of visceral motility in embryology. These various statements are scarcely suitable for obtaining a general osteopathic definition of visceral

motility. But all interview partners agree that there are movements of inner organs whose motor is not related to movement of the diaphragm.

The differing definitions for visceral motility by the interview partners also result in different approaches to this topic. There is a more mechanical approach to visceral motility, which can be broken down into the embryological/fascial and extrinsic/intrinsic approach. Then there is the more vitalistic, functional approach. The embryological/fascial approach is used mostly by Fieuw and van Dun. Fieuw`s approach is embryological/fascial, fluid-based, as he refers greatly to the fascial membrane system that forms a reciprocal tension system together with the cranial system. Van Dun (2007) uses visceral motility more for diagnosis before and after mobility corrections. His approach is more via mobility. The second more mechanical approach is the extrinsic/intrinsic approach as coined by Helsmoortel (2002). Kwakmann (2007) bases his approach greatly on Helsmoortel. Helsmoortel (2007) uses the mechanical level to release the metabolic level. Kwakmann (2007) works with the two phases expansion and retraction. Kwakmann (2007) also refers to the interdependency of the organs and the function of the individual organs for the overall organism. In the context of the vitalistic, functional approach, Kaschowitz (2007) argues from a highly vitalistic point of view, rejecting too mechanical an approach. For Kaschowitz (2007), motility plays the central role in entering the dialogue process with the patient and controlling this along the lines of a dialogue between two partners. Muts (2007) emphasises the non-mechanistic, non-analytical approach to visceral osteopathy. This is why Muts (2007) is also allocated to the vitalistic functional approach. He works almost exclusively on the visceral level using the chronology principle, along the lines of what develops first will also assume an important function. The interview partners Girardin and Höppner do not take a visceral motility approach. According to Girardin (2007), osteopathy in general should rely more on the basic sciences with more teaching of the principles. Anatomy and in particular organ anatomy according to Girardin (2007) should not be taught from books but in sections. This statement by Girardin (2007) is supported by Höppner (2007).

Resulting from the various approaches taken by the interview partners to visceral motility, these approaches are also implemented in different ways in practice. Fieuw (2007) uses

embryological contexts in his implementation and tries to use the power of the body in his treatment. He works with the fascial membrane system and uses the breakdown of the primitive gut, namely into a primitive foregut, midgut and hindgut, for his motility work. Van Dun (2007) works primarily with mobility corrections. Van Dun (2007) asks himself the question as to the existence of such a motility movement and to what extent it can be felt. While he is well able to imagine the existence of such a movement, he asks if we osteopaths are capable of feeling and treating it? And does this also make sense? Helsmoortel (2007) calls extrinsic motility the compensation mechanism of the body, as a reaction to the vascular system along the lines of vasomotion. By supporting the organ, Helsmoortel (2007) helps the body to reach its objective, and the motility movement stops. In working with visceral motility, Kwakmann (2007) improves mobility first so that after pushing a few "curtains" to one side, he can access this motility level. Here Kwakmann (2007) then works according to the amplification principle. He amplifies the dysfunction in the sense of indirect work. As part of vitalistic, functional implementation, Kaschowitz (2007) works with motility as the central control element for controlling the dialogue process between osteopath and patient. He works on the level of the metabolic fields as described by Blechschmidt (1978), trying to stimulate the dynamic of self-regulation, whereby structures are formed by cell movements, fluid flows and boundary layers. In doing so, Kaschowitz (2007) tries to enter into a dialogue with the tissue within motility. Muts (2007) comes out against a mechanical system in osteopathy and particularly in visceral osteopathy. According to Muts (2007), the function is an expression of vitality and the ability to adapt to the environment, from the cellular level through to the level of an organism. Muts (2007) also refers to Blechschmidt's metabolic fields, and works in a differential diagnosis manner by arguing on the basis of embryological and physiological contexts.

When it comes to emotionality, all interview partners agree that it is very easy for visceral motility work to generate emotional reactions in the patient. Fieuw (2007) is aware of the fact that the visceral treatment can easily trigger emotional processes in the patient. Van Dun (2007) can also envisage the patient's emotional situation being reflected in his visceral motility. Kaschowitz (2007) sees the emotional condition of a person and the corresponding motility expression as being interdependent. According to Muts (2007),

motility is an expression of physical, emotional and mental function so that there is a relationship between behaviour and motility. For Helsmoortel (2007), the somatopsychic path is a very important one. He sees the blood vessels as the motor of motility, which in turn can react to emotional statuses. As far as emotionality is concerned, Kwakmann (2007) refers to the chronology of embryonic development. Elements that have developed together retain their functional context. All interview partners also agree with regard to the osteopath's influence on the patient. The osteopath must make sure that he does not intervene too far in the patient's system. In this context, Fieuw (2007) speaks of the need for the therapist to observe self-hygiene so that he does not transfer his own patterns to the patient, and does not take the tensions that he has released during the day home with him at night. Van Dun (2007) sees the risk of transference and counter-transference also as a possibility for supporting the therapeutic process. In the interaction between patient and therapist, for Kaschowitz (2007) it is important not to assume the patient's requirement, and he asks the question as to the observer situation in the therapeutic process. But as far as Muts (2007) is concerned, the therapist has a more long-term influence on the patient. Helsmoortel (2007) attributes importance to the therapist's power situation, which must not be exploited. The power situation in the therapeutic process is also important for Kwakmann (2007). For him, a good fulcrum is the first form of self-hygiene.

To summarise, it becomes clear that every interview partner has to some extent his very own viewpoint of the notion of visceral motility. There are more mechanical approaches which can be broken down into the embryological/fascial and the extrinsic/intrinsic approach. Within these approaches, some interview partners tend to work more with mobility while others tend to use the motility approach more. On the other hand, there is a more vitalistic approach, the vitalistic/functional approach. But here again the interview partners differ along the lines of mobility or motility approach. Table 1 summarises the different approaches.

Tab. 1:

Approach	Motility	Mobility
Mechanical:		
• Embryological/fascial	Fieuw	van Dun
• Extr./intr. compensation	Helsmoortel	Kwakmann
Vitalistic:		
• Vitalistic/functional	Kaschowitz	Muts

6. Discussion

Section 6 "Discussion" compares and discusses the results of the study. Initially this will be based on the work by Jane Stark on Still's fascia concept, followed by a comparison of the various approaches taken by the interview partners.

6.1 Still's fascia according to Stark (2007)

Stark (2007) divides Still's notion of fascia into mechanical, vitalistic and spiritual aspects. Given that in the interviews the interview partners repeatedly refer to the principles of osteopathy and also emphasise the importance of the fascial membrane system in visceral work, it makes sense to take a closer look at Still's notion of fascia and then look at the approaches of the interview partners in this context. According to Stark (2007), Still uses the notions of fascia and membrane almost synonymously. Still writes: *"As the student of anatomy explores the subject under his knife and microscope he easily finds this membrane goes with and covers all muscles, tendons and fibres, and separates them even to the last fibre. All organs have a covering of this substance, though they may have names to suit the organs, surfaces or parts spoken of"* (Still A.T., 1899, in Stark J., 2007, p.123).

Still (1902) also refers to the connections of the membranes of the visceral organs and the spine. He explains: *"It is the connective tissue of the spine that directly connects the omentum and mesentery to the spine. … this connecting tissue is the bridge that conducts the nerve-forces to the great omentum and mesentery, generally with their lymphatic vessels"* (Still A.T., 1902, in Stark J., 2007, p.123). He underlines the importance of the fascia which can be used to explain every organ, arguing: *"We are ready to explore any organ in the thorax, abdomen, or pelvis, the lymphatics and glands of the fascia, superficial and deep, or any membrane of the body" (*Still A.T., 1902, in Stark J., 2007, p.123).

Stark (2007) compares Still's notion of fascia with a complex system. She writes: *"This idea that a complex system is open and interacts with its environment, fits particularly well with Still`s conceptualization of fascia"* (Stark J., 2007, p.128). See also Fig. 18 in the Appendix. Muts (2007) refers to complex systems within his vitalistic functional approach when he says: *"Anything that lives wants to express itself. Needs its environment. It is the outside which informs the inside and the inside which informs the outside. You cannot separate this. The system called cell that wants to survive tries to adapt to its environment"* (p.8,/50-51, S.9 /1, 5-6).

Kwakmann (2007) also refers to such a complex system with regard to positioning in relation to the environment. A complex system has feedback loops: *"loops of information that integrate the effects of the reservoirs, delays, valves, and flows. These loops could be positive or negative"* (Stark J.,2007, p.130).

"Positive feedback loops lead to indefinite expansions or explosions (a running away towards infinity) or total blocking of activities (a running towards zero)" (de Rosnay 1975, in Stark J., 2007, p.130).

"Negative feedback loops lead to adaptive behaviour, sustaining equilibrium or balance in the system. In a negative loop every variation toward a plus triggers a correction toward the minus, and vice versa. There is a tight control; the system oscillates around an ideal equilibrium that it never attains" (de Rosnay 1975, in Stark J., 2007, p.130).

According to Stark (2007), the concept of equilibrium corresponds with Still's idea of harmony. And that corresponds today with the concept of allostasis (homoeostasis).

Stark (2007) says that Still speaks of the communications network of the fascia. This includes the nerves, the heart, the arteries, the veins and the lymph system. In this context he refers to a "law of reciprocity". Still (1902) argues along the lines that all nerves depend on the arterial system when he emphasises that: *"All nerves depended wholly on the arterial system for their qualities, such as sensation, nutrition, and motion, even though by the law of reciprocity they furnished force, nutrition, and sensation to the artery itself"* (Still A.T., 1908, in Stark J., 2007, p.135).

"Fascia had much to do with feeding its own nerves" (Still A.T., 1902, in Stark J., 2007, p.135).

This context can also be taken to understand the statement by Fieuw (2007) referring to the fascial system as "reciprocal tension membrane".

Stark (2007) divides Still's statements on fascia and membranes into a mechanistic standpoint, a vitalistic standpoint and a spiritual standpoint. With regard to the mechanistic standpoint, Stark (2007) writes: *"So, from a mechanistic standpoint, Still conceptualized the fascia as having a role in the suspension of the organs and as interface to the environment, or adjacent structures"* (Stark J., 2007, p.139).

Still (1899): *"It [fascia] is the 'material man'"* (Still A.T., 1899, in Stark J.,2007, p.139).

This opinion by Stark (2007) of Still's mechanistic standpoint of the fascia can be taken to classify the statements by Fieuw (2007) on the suspension systems of the organs and their peritoneal covers, as well as the statement by Fieuw (2007) on the three-dimensional motility movement and its direct movement axis when fixing this suspension system.

As already seen, Van Dun (2007) uses motility more in the context of diagnosis before and after a mobility correction. This approach is also to be seen as a mechanistic standpoint according to Stark's classification.

Helsmoortel (2007) uses the compensation of the body along the lines of extrinsic motility. He supports the sagged organ to reduce the vasomotion reactions which take place in the fascial tissue. His focus is on the mechanical aspect of the vascular system.

According to Stark (2007) it should also be remembered that Still referred to the meso system as the sheets which gave attachments from the spine to all the viscera of the body. This system of fascia also provided the conduit for the lymphatics and blood vessels to pass from their places of origin to the suspended organs.

Kwakmann (2007), who initially improves fascial mobility to come down to the motility level, consequently takes a more mechanistic approach. It is only on arriving on the motility level that an approach becomes more vitalistic, with expansion as a fluid expression.

With regard to the vitalistic standpoint, Still writes: *"As this philosophy has chosen the fascia as a foundation on which to stand, we hope that the reader will chain his patience for a few minutes on the subject of fascia, and its relation to vitality. It stands before the philosopher as one of, if not the deepest living problems ever brought before the mind of man"* (Still A.T., 1899, in Stark J., 2007, p.149).

According to Stark (2007) in Still's complex model of the body, it is fundamental to understand that fascia not only serve other tissues, organs and systems, but are reciprocally served by those same tissues, organs and systems.

According to Still (1899), it is not the fascia but the fluids that had to be in motion.

Still (1908): *"But beyond all this lies a still greater question to solve, which is how and when to apply the chemicals of life as nature designs they shall be"* (Still A.T., 1908, in Stark J., 2007, p.141).

This quotation by Still can be seen in relation to the statement by Kaschowitz (2007): *"For me it is not a single movement but an overall expression of how the body runs vital self-organisation and affects all movement components for me which are intrinsic in the tissue, in the organ, let's say that emerge of their own accord in the tissue. Such an intrinsic movement, the way the connective tissue organises itself, influences the whole regulation process* (p.2/31-34, 36-37). According to Kaschowitz (2007), the result is the self-expression of the tissue, the ability of this tissue to warrant its self-regulation (allostasis). This is thus an expression of harmony, as expressed by Still. This is also the context for understanding what Muts (2007) means when he says: *"*[...] *secondly to understand that everything that lives flows; in other words, there is a physiology, and I feel that this knowledge is completely necessary"* (p.2/11-12). In this context, Muts (2007) also speaks of membrane transport systems. He even refers to Einstein in emphasising that: *"It is a kind of energy. Energy in matter. Yes, Einstein fits in here as well. Everything that is matter is actually energy"* (p.3 /37-38).

These statements by Still on the vitalistic aspect of the fascia and the statements by the interview partners in this context reflect the next, more deep-seated level of fascial

treatment. This focuses not on the macroscopic mechanistic aspect, but on influencing the metabolic processes behind them.
According to Stark (2007), Still was convinced that the lymphatics, and muscles, and fascia, could dilate or constrict with great force when necessary to eject substances from glands, muscles and fascia.

Still (1898): *"In the fascia is all the soothing and vital qualities of Nature"* (Still A.T., 1898, in Stark J., 2007, p.140).

Still's third standpoint with regard to fascia is a spiritual one. Still (1899): *"It [the fascia] is the dwelling place of his [sic] spiritual being. The soul of man with all streams of pure living water seems to dwell in the fascia of his body"* (Still A.T., 1899, in Stark J., 2007, p.151, 153).
According to Stark (2007), Still also describes the possibility of "wounding" the body with non-physical loads, such as e.g. emotional, social or environment-related loads.
With regard to the emotional aspect of motility, Fieuw (2007) refers also to the fascial suspension system where the box is too confined. Van Dun (2007) remarks in this context that perhaps every emotion already represents a movement that is materialised in structures, and becomes apparent in working on the fascial system.
Kaschowitz (2007) sees a close interdependency between emotionality and tissue. Here he speaks mainly of the connective tissue with its ground regulation processes. Muts (2007) talks of neuroimmuno-biophysiology when it comes to emotionality - substances which are released from the tissue and have an influence on the psyche.
Helsmoortel (2007) refers to the vascular system which he sees very closely related to emotionality, by means of endocrinal and neurological control. Kwakmann (2007) sees the relationship between organ structures and emotionality partly rooted in the chronology of morphogenesis. An organ assumes not only its own tasks but also serves the whole organism. Elements developing at the same time also have a functional relationship.
To summarise, Stark (2007) writes: *"In essence, Still's statement that 'the soul of man with all the streams of pure living water seems to dwell in the fascia of his body' reflected the triune nature of the body, the union of the body, motion and mind, or in a more poetic sense, body, mind and spirit. The terminology as Still employed it, however, must be*

clearly defined. The body, which was matter and was represented by the system of fascia, was most certainly conceived in a materialistic sense. Motion was represented by the streams of pure living water, as the vitalizing principle, primarily the lymphatics which drank from the CSF of the brain. Both systems, the fascia and lymphatics, were considered by Still to be universal in the body. Motion, in this case, was synonymous with spirit in the vitalistic sense, but it was likely not too far from a spiritual sense as well. Finally mind, which was a portion of Mind, which was God, was the uniting factor between body and motion, or body and spirit, or fascia and lymph, and was considered by Still to be the driving principle behind the human machine. The mind, in this particular quotation referred to the soul while it was still dwelling within the body, there is therefore no necessity to review it in a spiritualistic light" (Stark J., 2007, p.155).

6.2 Summary

The question arises here whether the interview partners cannot after all be put on a joint basis, in spite of the differing definition of the notion of visceral motility, in spite of the differing approaches and in spite of the differing implementation of these approaches in practice, in other words, the fascial membrane system. Still already considered the notion of the fascia from differing standpoints. Namely from a mechanical, vitalistic and spiritual standpoint. This division is also reflected more or less among the interview partners. All work with the fascial system, but on different levels. Fieuw and van Dun work more with the mechanical aspect of visceral motility. Helsmoortel and Kwakmann also work more with the mechanical aspect. Then on the other hand there is the more vitalistic, functional aspect which can be attributed more to Still's vitalistic standpoint. Each of these interview partners enjoys a good success rate with his patients using his own approach and its implementation. The greatest differences are to be found in defining the notions of mobility, motility, motricity, fascia, membrane, expression and vitality. An examination of the statements made by Jane Stark's interview partners on Still's fascia concept also reveals differences among the interview partners. As both Girardin (2007), Höppner (2007) and also van Dun (2007) state that the notion of visceral motility is a relatively new notion in

osteopathy, finally the question must be posed as to the meaning of the term visceral motility. None of the interview partners is satisfied with the term. As the notion of motility (visceral) according to Höppner (2007) has already been used for some time in the context of physiological peristalsis with conventional medicine also using this notion as a synonym, in osteopathy we should reconsider the term of visceral motility and possibly replace it.

7. Prospects

A look at the results of the study reveals great differences among the statements by the interview partners in defining the notion of visceral motility. Section 7 "Prospects" provides a brief introduction to the work of Finet, Williame, which again is put in relation to Still according to the work by Stark (2007). Finet (2000) and Williame (2000) examine visceral dynamics using X-ray pictures and ultrasound measurements. They use X-ray examinations for the gastrointestinal tract and ultrasound measurements for the dynamics of the liver, kidneys, pancreas and spleen. Finet (2000) and Williame (2000) are interested in the dynamics of the viscera under the influence of the pressure of the thoraco-abdominal diaphragm. On the basis of these scientific results, they developed an osteopathic normalisation of these organ structures. According to Finet (2000) and Williame (2000), the approach differs from other visceral treatments and is between the one direct approach which lifts the organ, and the other more indirect approach which treats the fascia on the motility level. Finet (2000) and Williame (2000) see their approach as being positioned in the middle between the two other approaches. Their standpoint is that the visceral-osteopathic normalisation is primarily a fascial treatment which should not be invasive. Still (1901) also refers to a non-invasive visceral treatment. According to Finet (2000) and Williame (2000), it is possible to perceive the functional condition of an organ within its fascial environment without deep palpation. In their opinion, the fascial structures warrant good integrity and homoeostasis of an organ. Furthermore, a good knowledge of the fascial circumstances and visceral dynamics is important. Finet (2000) and Williame (2000) also

see a reciprocal relationship with neuropsychological factors. They describe a relative deformation of the organ by the diaphragm. The organs are deformed in their typical fashion. This deformation and the resulting recoiling force function along the lines of tensegrity (see also the statements by the individual interview partners in the appendix). They speak of a "phrenic-mediastinal-vertebral-cranial chain" by emphasising: *"In summary, it is our view, based on this reasoning, that the diaphragm gains support from the base of the cranium and from the cervical, dorsal, and lumbar spines in order to achieve full costal movement. This very important phrenic-mediastinal-vertebral-cranial chain and its visceral influence deserve the full attention of the osteopath. This holistic approach seems essential when it comes to thinking of freeing the diaphragmatic function"* (Finet, Williame, 2000, p.13).

According to Finet (2000) and Williame (2000), the rhythmic dynamics of the organs (on account of the mobility of the diaphragm) are reflected in the fascial elements. When these fascial elements function well, this results in good homoeostasis. They write: *"These fascial-visceral normalisations seem to work in many ways. There is a mechanical action on the fascia and thus on its components, including cells (fibroblasts, adipocytes, macrophages,…), fibrous proteins (collagen, reticulin, elastin), and the extracellular matrix (water, macromolecules,…). These components are responsible, to various degrees, for the elasticity, plasticity, resistance, and viscosity of the fascia as well as for its physicochemical, electrical, metabolic, and neuropsychological balance"* (Finet, Williame, 2000, p.43).

Some statements by Still on visceral treatment are featured in the appendix. They provide graphic support for the opinions of Finet and Williame. It would therefore be helpful within osteopathy to take a greater look at the work by Finet and Williame, on the one hand to clarify the confusing definitions in the visceral osteopathic context, and on the other hand to be able to revert to a sound, non-invasive normalisation of the organs which above all is not based on countless techniques. Because osteopathic medicine sees itself as a health system that applies principles and not techniques. Weber argues along these lines Weber (2005): *"An osteopathy of techniques which attracts attention everywhere by huge quantities of partly redundant publications can no longer live up to this claim"* (Weber K.-H., 2005, p.29). Still (1902) also refers along these lines to how an osteopath should behave when he argues: *"An osteopath should be a clear-headed, sober, conscientious,*

truth-loving man, and never speak until he knows he has found and can demonstrate the truth he claims to know" (Still A. T., 1902, in Stark J., 2007, p.159). With reference to Still (1902), we osteopaths should enter into the discussion in order to find the truth which we believe we can feel, and have the courage to constantly query our hypotheses and possibly also replace them. Because osteopathic medicine aims to achieve global recognition, so that a constructive discussion is necessary within osteopathy to bring this form of medicine further ahead.

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9. Appendix

A complex system:

Abb. 16 Aus: Stark J. (2007): Still`s Fascia

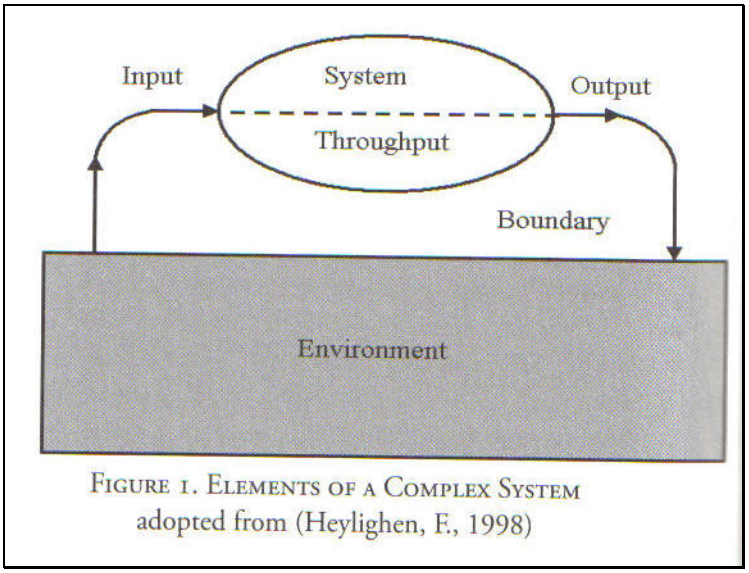

FIGURE 1. ELEMENTS OF A COMPLEX SYSTEM
adopted from (Heylighen, F., 1998)

Noncontingent reward experiments:

Bettighofer (2004) schreibt dazu:“ *Bei den sogennannten noncontingent reward experiments handelt es sich um Tests, in denen kein Zusammenhang zwischen dem Versuchsverhalten des Betreffenden und der Bewertung dieses Verhaltens seitens des Versuchsleiters besteht. Diese nicht Kontingenz, das heißt das Fehlen jeder Kausalbeziehung zwischen Leistung und Bewertung, ist der Versuchsperson aber nicht bekannt. In einem von vielen derartigen Experimenten, die der Psychologe Alex Bevelas vor Jahren an der Stanford-Universität durch führte (leider aber nicht veröffentlichte), wird der Versuchsperson eine lange Reihe von Zahlenpaaren vorgelesen (z.B. 31 und 80). nach Nennung jedes zahlen Paares hat die Versuchsperson anzugeben, ob diese bei den Zahlen zusammen passen oder nicht. Auf die nie ausbleibende, verblüffte Frage, in welchen Sinne denn diese Zahlen passen sollen, antwortet der Versuchsleiter nur, dass die Aufgabe eben im Entdecken der Regel dieses Zusammenpassens liegt. Damit wird der*

Eindruck erweckt, es handle sich um eines der üblichen Versuch und Irrtum Experimente. Die Versuchsperson beginnt also zunächst mit wahllos gegebenen passt oder passt nicht Antworten und erhält vom Versuchsleiter natürlich zunächst fast ausschließlich falsch als Bewertung der Antworten. Langsam aber bessert sich die Leistung der Versuchspersonen, und die Richtigerkennung ihrer Antworten nehmen zu. Es kommt so zu Ausbildung eine Hypothese, die sich im weiteren Verlaufe als zwar nicht vollkommen richtig, aber doch immer verlässlicher erweist. Was die Versuchsperson- wie erwähnt- nicht weiß, ist, dass zwischen ihren Antworten und den Reaktionen des Versuchsleiters keinerlei unmittelbarer Zusammenhang besteht. Der Versuchsleiter gibt die Richtigerklärungen der Antworten vielmehr auf Grund der ansteigenden Hälfte einer Gaußschen Kurve, d.h., zuerst sehr selten und dann mit immer größerer Häufigkeit. Dies aber erschafft in der Versuchsperson eine Auffassung von „Wirklichkeit" der den Zahlenpaaren zugrunde liegende Ordnung, die so hartnäckig sein kann, dass an ihr auch dann festgehalten wird, wenn der Versuchsleiter ihr schließlich erklärt, dass seine Reaktionen nicht kontingent waren. Gelegentlich nimmt die Versuchsperson sogar an, eine Regelmäßigkeit entdeckt zu haben, die dem Versuchsleiter entgangen ist. Die Versuchsperson hat also im wahren Sinne des Wortes eine Wirklichkeit erfunden, von der sie mit Recht annimmt, sie gefunden zu haben. Der Grund für diese Überzeugung liegt darin, dass das so konstruierte Bild der Wirklichkeit in die Gegebenheiten der Testsituation passt, was nur bedeutet, dass es mit diesen Gegebenheiten nicht in Widerspruch steht. Es bedeutet aber keineswegs, dass das Bild daher auch stimmt, d. h., dass es die den Zahlenpaaren (vermeintliche) zugrunde liegende Ordnung in ihrem So-Sein richtig wiedergibt. Denn welche Beziehung auch immer die Versuchsperson zwischen den Zahlen „herausfindet" kommt deswegen auch nicht im entferntesten an ein Erkennen der tatsächlichen Versuchsanordnung heran, da in dieser von Anfang an keine solche Beziehung besteht (Bettighofer S., 2004, S.25-26).

Einige Zitate Still`s zu visceraler Behandlung:

Alle Zitate sind aus (Stark J., 2007, Still`s Fascia, S. 161, 162).

- *I believe that the intelligent student will agree with me that ninety out of every hundred of the cases of renal diseases, stomach diseases and pancreatic diseases can be proven by demonstration to have their origin in the condition of the mesentery of the ascending, transverse, and descending colon, allowing it to stretch down low enough to cause the large and small intestines to be responsible for the effects above enumerated.* **[** *The large intestine settling down into the lower part of the abdomen and pelvis, producing a partial or complete obstruction of the blood- and- nerve supply of that division of the body* (Still A.T.,1902)

- *No two ore more organs can work perfectly when one is crowding on another* (Still A.T., 1902)

- *Wild force used in treating the abdomen cannot be tolerated, taught or practiced… No good can come to the patient by pulling, pushing and gouging in the sacred territory of the abdominal organs, but much harm can and does follow bruising the solar plexus from which a branch of nerves goes to each organ of the abdomen* (Still A.T., 1901).

- *The folds of the meso-caecum, meso-transversalis, and the meso-colon can generally be easily readjusted* (Still A.T., 1902).

- *I adjust the cecum [caecum] and all signs of headache and constipation disappeared right there* (Still A.T, 1902).

- *In the treatment, carefully, while in the knee- and –chest position, with a gentle pressure in the vicinity of the symphysis, give a gliding move up toward the left kidney, follow the transverse colon, raise any sagging that may be founding that division with a gentle upward move, without gouging of the fingers, and raise the whole alimentary system up toward the umbilicus* (Still A.T. 1902).

- *Keep a living picture, [a vivid mental painting of the whole arterial system], before your mind all the time, so you can see all joints, ligaments, muscles, glands, arteries, veins, lymphatics, fascia superficial and deep, all organs, how they are fed, hat they must do, and why they are expected to do a part, and what would follow in case the part was not done well and on time* (Still A.T., 1899).

Aussagen einiger Interviewpartner zum Thema Tensegrity:

Muts (2007):*" […] da spricht man von der Basiskraft von einer Zelle, oder der Basiskraft von einem Gewebe* (S.7 /38-39).

Helsmoortel (2007):*" Tensegrity besteht schon eine Weile. Ich denke es basiert auch auf eine Dreieinheit des Körpers, so es ist irgendwo mikroosteopathisch, wie es verbindet die mechanische-, metabole- und mentale Funktion. Es ist ein Erklärungsmodel in Relation was Vasomotion genannt wird. Ob es jetzt nur induziert ist von Schrittmachern im mechanischen Aspekt, oder von metabolen Einflüssen oder von mentalen Einflüssen, das ist die Zukunft. Ich arbeite mehr und mehr in diese Richtung* (S8 /29-31, 34-37).

Kwakmann (2007):*" Also ich denke die Tensegrität ist ein Basismodel wie Fascien aufgebaut sind. Wie man letztendlich mit dem Angebot an Strukurmaterial, dem Angebot, so wenig wie möglich Energie zu verbrauchen und wie an daraus die höchstmögliche Stabilität aufbauen kann oder hervorrufen kann. Ich denke das Tensegritätsmodel oder Tensegrity kann uns dabei helfen , wie ein Gefäß aufgebaut ist, wie eine Darmwand aufgebaut ist, in der Ausrichtung der Fascien. Auf jeden Fall hilfreich ist, zu verstehen warum einige Sachen so sind, warum, wenn wir einen Blutstrom durch ein Gefäß schicken, dass es sich spiraloid formt, warum letztendlich die Nahrung spiralförmig durch ein Darmrohr oder Speiseröhre durchgeht und da sowohl Information abgibt, Information bekommt und auch mechanisch dadurch beeinflusst wird* (S6 /27-36).