

Revisiting Gerda Boyesen's Theory of Psychoperistalsis

Carlien van Heel

Introduction

This article is based on my presentation at the second Biodynamic Conference in London on 16 November 2014, entitled: 'Revisiting Gerda Boyesen's Theory of Psychoperistalsis'. My understanding of Boyesen's theory of psychoperistalsis has since deepened. I have added information on current research on the gut and on the significance of psychoperistalsis in psychotherapy. The emphasis and layout of the material that was presented at the conference (parts 3 and 4) have also changed considerably.

This article has four parts. I will first put Gerda Boyesen's theory of psychoperistalsis in the context of wider research on the gut and its relationship to the brain and emotional wellbeing. In part 2, I will explain what psychoperistalsis is, why it is important in psychotherapy and describe how we apply the theory of psychoperistalsis in Biodynamic psychotherapy and massage. This material was not presented at the conference.

In part 3, I will present Boyesen's physiological and neurological understanding of psychoperistalsis. I have chosen seven principles that underpin her theory of psychoperistalsis and will link these principles to biological facts and current neurological and physiological theories that, in my opinion, support her discovery.

The seven principles are:

1. The intestines are involved in emotional processes.
2. Peristaltic movement in the intestines is not only triggered by the presence of food (migrating motor complex).
3. Emotions move in the walls of the intestines.
4. Blocked emotions create muscle and respiratory tension, a thickening of connective tissue, and stasis in the intestinal walls.
5. We can track or guide emotional processing through following psychoperistaltic sounds.
6. Peristaltic movement can release internal pressure and help release a whole repression pattern in body and mind; this allows a cleansing of body tissues.
7. When body tissues are cleared we can feel fluid streamings,¹ which contribute to a sense of well-being and vitalization.

1 Streamings – little rippling, tingling pleasure sensations within the body (Boyesen, G., 1982)

The fourth part will describe Gerda Boyesen's professional development and the steps that led to her discovery of psychoperistalsis.

Part 1 Boyesen's theory of psychoperistalsis in the context of research on the gut and its relationship to the brain and emotional well-being

There are many books and studies on how nutrition supports physical and mental wellbeing. This area has been well researched for many years by, for example, the Institute of Food Research (UK), as well as by many independent nutritionists (Chutkan, 2013).

Nowadays, there is an increasing understanding of the huge influence the gut has on the brain and its effect on emotional states. The digestive system can be seen as the largest sensory organ for picking up information about the inner state of affairs in the body and it relays this information to the brain (Enders, 2015). The surface area of our digestive system is about one hundred times greater than the area of the skin (Enders, 2015). The intestines have a huge network of neural connections, far more than any other organ in the body apart from the brain. The gut is therefore called our 'second brain' (Gershon, 1998). The intestines produce more than twenty unique hormones and ninety-five per cent of serotonin (a chemical associated with wellbeing and joy) is manufactured in the gut (Enders, 2015). The vast majority of our immune system is located in the gut.

In the last ten years there has been an increase in research into the role played by gut microbiota (gut bacteria) in behaviour and emotional wellbeing. The majority of gut bacteria live in the large intestine, where they break down left-over food, produce vitamins and train our immune system (Enders, 2015). These gut micro-organisms secrete a huge number of chemicals, including neurotransmitters that are involved with the regulation of our mood. Research shows that there is a strong possibility that the gut bacteria influence our emotions and our brain functioning; for example, certain groups of bacteria have been found in people suffering from depression and a study in 2013 showed that an intake of certain bacteria over four weeks altered the areas in the brain responsible for processing emotions and pain (Enders, 2015). The Human Microbiome Research Project was set up in 2007 to study and catalogue the trillions of gut bacteria (Enders, 2015; Smith, 2015). This is a huge and complicated task that is still ongoing. We can carry up to 2 kilos of bacteria in our intestines. One gram of faeces contains more bacteria than there are people on Earth (Enders, 2015). Some scientists now support the theory that our gut microbiota can be considered an organ (Enders, 2015; Smith, 2015).

Other recent experiments have shown that stimulating the vagus nerve at different frequencies influences whether people feel comfortable or anxious. The vagus nerve is the fastest and most important nerve connection route between the gut and the brain. In 2010, a medical procedure was approved that uses stimulation of the vagus nerve for treating depression (Enders, 2015).

Despite this current interest into how the gut influences our sense of wellbeing, I have yet to find any research that focusses on the peristaltic movement of the small intestine and its different sounds, as described by Gerda Boyesen in the 1960s.

There is an acknowledgement that there is a peristaltic movement in the intestines that is not influenced by food digestion (see 3.2). Giulia Enders describes this peristaltic movement (which she calls 'migrating motor complex') in her book, *Gut: The Inside Story of Our Body's Most Under-Rated*

Organ (2015), as a cleaning-up process: a movement created to sweep out left-over food in the digestive tract. She does not elaborate any further on this. This peristaltic movement has been observed by and has puzzled many scientists, yet remains under-investigated.

Gerda Boyesen discovered in the 1960s that there was a link between these peristaltic movements in the intestinal walls, with their different sounds and rhythms, and the release of emotions and stress. This article will present her discovery of psychoperistalsis and focus on the intestinal peristalsis and its relationship to emotional repression, release and wellbeing.

Part 2 Psychoperistalsis and its significance in psychotherapy

2.1. What is Psychoperistalsis?

Gerda Boyesen (1922–2005) was a Norwegian psychologist and physiotherapist and the founder of Biodynamic psychotherapy and Biodynamic massage. Boyesen discovered, through observing her own and her patients' processes, that the alimentary canal (the tubular passage of the digestive system) is involved in every emotion and in every stress experience. She found that, by listening to the sounds of the intestinal peristaltic movements, she could influence and stimulate the processing of these emotions, not only on a mental level, but also deep down in the tissues of the body. Boyesen felt that she had discovered the missing link between psyche and soma. Her daughter, Mona Lisa Boyesen, coined the word '**psychoperistalsis**' in 1970, to describe the role intestinal peristaltic movement plays in emotional processing.

2.2. Why is psychoperistalsis significant in psychotherapy?

- In listening to peristaltic movements in the intestines we link to the underlying vegetative processes.² These are the processes that keep us alive; they make us grow and develop and ensure that our bodies heal when injured. We are hardly aware of these inner pulsations – the neural, hormonal and chemical exchanges, the fluid movements, the food digestion, the heart beating – yet these processes are fundamental to our existence. We are slightly more conscious of our breathing and can, to some extent, influence our breath. However, breathing will happen whether we direct it or not. It can be humbling and re-assuring to feel that life goes on, no matter what we feel or think.
- In giving importance to the underlying vegetative processes and life force,³ we connect to a level of humanity that we all share, regardless of age, gender, race, skin colour, sexual orientation, religion, nationality, intelligence or wealth. Our childhood and life experiences can support or hamper this life force, but the inner design to grow and develop is in all of us.
- Intestinal peristaltic movements become active when the need for action or focus has passed. Peristaltic sounds herald and are part of the resting and integration phase, when body tissues get cleansed and the internal hormonal and chemical environment gets back to

2 Vegetative processes – Life processes that are not subject to conscious control, like heartbeat, circulation, food digestion, hormone release, metabolic processes in cells. (Stauffer, 2005) 'Vegetative' is the Germanic word used by Wilhelm Reich and it is applied in most body psychotherapy traditions. The literature written in English tends to use the term 'autonomic' processes (Heller, 2012).

3 Life force – this energy flows through us and around us and permeates all living beings. In Chinese medicine the life force is known as Qi; in Indian philosophy it is known as Prana. Wilhelm Reich called it 'Orgone energy', and in Russia it was called 'Bio-plasma energy' (Ostrander, 1973/1997).

homeostasis.⁴ Gerda Boyesen found that the cleansing of body tissues eventually brought an amazing quality of fluidity and lightness to the body, something she called ‘pleasure streamings’. Children often feel these pleasure streamings, but most adults have lost touch with this inner connection to spontaneity and aliveness. As adults we can, however, get to feel the underlying life force through our experience of streamings, once our body tissues are sufficiently cleansed. Boyesen discovered that this had far-reaching consequences. Through experiencing the streamings, we gain access to intuitive and essential levels that link us to all of humanity and beyond. She called this state the ‘Primary Personality’.⁵ Boyesen saw the reconnection to our essence⁶ and ‘Primary Personality’ as the ultimate goal of psychotherapy and of life.

Gerda Boyesen found, in the peristaltic movement of the intestinal walls, a built-in recovery system. **Psychoperistalsis is an accessible key to the whole autonomic, vegetative system.** Not only could she track peristaltic movements through the stethoscope, she discovered that, through attuned attention and touch, she could influence the movements. By finding ‘the key to opening the peristalsis’, she could stimulate the parasympathetic process of release, cleansing and integration. She came to realise the huge importance of the cleansing and integration phase in psychotherapy. Cleansing of the body tissues, by our lymph vessels and veins, allows the digestion of mental and emotional stress. Clear tissues facilitate libido⁷ flow throughout the body and these pleasure sensations are the basis of our inner sense of happiness and vitality.

Cleansing takes place after the need for action has subsided. The cleansing process is governed by the parasympathetic branch⁸ of the autonomic nervous system,⁹ which also stimulates psychoperistalsis. When we hear the peristaltic sounds, we know that cleansing is happening in

4 Homeostasis – the ability or tendency of an organism or a cell to maintain internal equilibrium by adjusting its physiological processes. The term ‘homeostasis’ was first defined by Claude Bernard in 1865.

5 Primary Personality – Boyesen’s description of a state of inner harmony and connection with libidinous pleasure streamings. A quality of being that harbours our full potential. There is an inherent joy in life and an inner moral compass. The person is in touch with the wonders of life yet also grounded in reality. It is innate in each human being (Boyesen, G., 1982).

6 Essence – the essential part, the soul of a person. That which exists prior and beyond our ego. Similar to the Primary Personality.

7 Libido – a Freudian term used to describe a force that organises all of the dynamics of the organism and pushes it to maximise its pleasure in general and sexual pleasure in particular (Heller, 2012).

8 Parasympathetic branch – the branch of the autonomic nervous system that is responsible for relaxation and digestion processes (Stauffer, 2010).

9 Autonomic nervous system – the part of the nervous system that regulates individual organ function and homeostasis and, for the most part, is not subject to voluntary control (Stauffer, 2010).

certain areas of the body. The lymph vessels and veins pick up waste products and chemical and hormonal substances. Lymph vessels and veins need movement or pulsation to be able to work adequately. For more information on the physiological processes, see part 3.

2.3. The role of psychoperistalsis in emotional processing

2.3.1. Boyesen's concept of the Emotional or Vasomotoric Cycle

Gerda Boyesen saw that each emotion goes through a cycle of arousal and winding down. Each emotion involves myriad vegetative processes. Boyesen's core concept of the **Emotional or Vasomotoric Cycle** describes an emotional impulse or response as happening on three levels: mental, physical and vegetative. The three levels of the cycle correspond to the three embryonic layers: ectoderm – mental (brain, nervous system, skin); mesoderm – physical (muscles, bones, connective tissue, blood and lymph vessels); and endoderm – vegetative (organs), from which our whole being develops. The three layers interlink and influence each other (Boadella, 1987; Blechschmidt, 2004).

An emotional impulse or response, which is mediated by hormonal and/or neural processes (Damasio, 2004, 2000), will rise up in our body and mind. Neural impulses will stimulate certain muscles to get ready for expression and extra fluid (blood) will be brought to these areas; if the emotion is allowed to be expressed or fully felt, then it will subside and leave no trace. During the winding-down process, which is governed by the parasympathetic branch of the autonomic nervous system, our lymph vessels and veins should clear out the hormones and chemicals involved in the arousal. Our vegetative and muscular systems should revert back to an optimal state of homeostasis. In order for a full return to homeostasis to happen, we might need to share the experience with a sympathetic friend or therapist so that we can fully process and integrate it. Eventually the whole experience should settle in our psyche and body. Boyesen called this our built-in '**self-regulation**'.¹⁰

If our expression or deeper acknowledgement is blocked, then the full cleansing process can't take place and the body makes a compromise. The emotional impulse gets suppressed or deadened through muscle tension, which can lead to '**muscle armouring**',¹¹ or, in some cases, muscle collapse (hypotonia). Our breathing may become limited and connective tissue thickens and encapsulates the fluid charge. Connective tissue can change consistency from fluid to fibrous if movement is restricted (see part 3). Boyesen referred to the encapsulating, clogged-up connective tissue as '**tissue armouring**'. All this occurs well below our conscious awareness.

The process of arousal and winding down is also applicable to daily stress and happens throughout the day. We may have to travel during the rush hour or our boss may have been irritated with us. Life continually makes an impact on all aspects of our being. Sleep can be an opportunity for processing

10 Self-regulation – the ability to return to a state of inner balance and homeostasis.

11 Muscle armouring – the build-up of chronic muscle tension that can lead to postural changes. A term coined by Wilhelm Reich.

the stress and cleansing the tissues. However, often our pressured lifestyles give us little time to digest and clear our daily stress.

We all have many unfinished emotional and stress cycles in us, which will have left hormonal and chemical traces in our tissues as well as giving rise to breathing and muscle constrictions. Unfinished emotional cycles are always waiting to be completed. There is an innate movement towards completion, development and growth. Repressed emotions lie dormant, in the sense that the intercellular fluid retains its charge. Boyesen called it '**energetic fluid**'. Once the right conditions are in place, this inner force of 'energetic fluid' will move towards completion of the emotional cycle. This inner movement can also be released through massage.

The more traumatic the events we have experienced, the more protective repression patterns we will have to clear. This can be a mammoth task and may not always be achievable. However, the ability to clear these patterns and re-connect with inner fluidity, and therefore with the pleasure of being alive, is, in principle, part of our self-regulation mechanism and inherent in our biology.

Psychoperistaltic movements are part of the unwinding phase of the emotional cycle. The peristaltic sounds tell us that relaxation and clearing are taking place. Psychoperistalsis is therefore a valuable indicator of parasympathetic activity. Psychoperistalsis is an important part of our internal self-regulation system.

2.3.2. Boyesen's concept of the 'vegetative tree'

Boyesen came to realise that the intestines are involved in *every* emotional cycle, in both the arousal and the winding-down processes. The intestines are involved in the vegetative pattern in the body of each emotion (see 3.1). A blocked emotion not only creates muscle armouring, changes in breathing patterns and a thickening of connective tissue (tissue armouring) (see 3.4), it also creates '**visceral armouring**', a blocking in the walls of the intestines. Boyesen saw each emotion as one comprehensive vegetative pattern with 'branches' spreading all through the body. She called this the '**vegetative tree**'.¹² Each emotion is a 'vegetative tree' and we carry many 'vegetative trees', i.e. uncompleted emotional cycles in our body.

A complex emotional pattern ('vegetative tree') can release during a good psychotherapy session or a talk with an empathetic friend. Massage or movement can liberate this pattern by loosening contracted muscles or opening blocked fluid in connective tissue. There are several ways to stimulate this full release – talking, laughing, being creative, music, dancing, sex, movement, exercise, relaxation, meditation, massage, etc. However, in order for the 'vegetative tree' pattern to completely dissolve there will have to be *intestinal peristaltic movement*, which frees the fluid stasis, related to this particular pattern, in the walls of the intestines. So when we hear peristaltic sounds,

12 Vegetative tree – Boyesen's concept of the vegetative pattern of each uncompleted emotion all through the body. This pattern will always include stasis in the walls of the intestines. Releasing this stasis can free the whole vegetative pattern of a particular emotional event, and so complete an emotional cycle.

we know that cleansing is happening, not only in the walls of the intestines but also in other areas of the body.

In Biodynamic psychotherapy we are mindful to release all three levels of the emotional cycle, so that the emotion or stress experience can move through fully and the whole 'vegetative tree', the energetic fluid stasis in body and mind, gets cleared and cleansed. In Biodynamic massage we can stimulate the psychoperistalsis more directly and can potentially unlock the unravelling of the 'vegetative tree'.

The cleansing of the body will bring relief and a feeling of vitality and, eventually, a sense of embodiment and inner connection to oneself and to life as a whole.

2.4. How we apply our understanding of psychoperistalsis in Biodynamic practice.

2.4.1. Psychoperistalsis in Biodynamic massage

The clearest demonstration of Gerda Boyesen's theory of psychoperistalsis takes place during a Biodynamic massage session. We use the different psychoperistaltic sounds to guide the massage. We listen to the sounds by placing a microphone directly on our client's lower abdomen so that the tummy rumblings will be amplified through an electronic stethoscope. We are listening, through the stethoscope, to what could be termed the 'language of the second brain' (Gershon, 1998). Practitioner and client can both hear the amplified sounds.¹³

In Biodynamic massage we are also guided by our other senses, particularly touch, as well as our energetic attunement and therapeutic presence.¹⁴ Our intention may be to give our client a sense of grounding and strength through softening or energising their muscles, or we may want to offer emotional support through our touch. Sometimes, we aim to help our clients sink into a deeper essential and universal realm.¹⁵ At these times, we may have the peristaltic sounds going on in the background but the sounds are not of prime importance. The focus on the peristaltic sounds usually returns at the end of the massage, when the person is resting on their left side. In this position the psychoperistaltic sounds tend to come more easily and the client is then able to digest the impact of the massage.

Peristaltic sounds can guide our work when we want to initiate parasympathetic activity and cleansing of the tissues. As most of us have pressured lives where we are constantly 'switched on', in

13 Old-fashioned, non-electronic stethoscopes, the ones Gerda Boyesen used, had to be placed directly in the therapist's ears.

14 Therapeutic presence – an energetic resonance with the client, based on connection with life-force energy, which generates and sustains the therapeutic process, far below interpersonal and transference levels (Southwell, 2007).

15 Essential and universal realm – a realm that is experienced as connected to soul, spirituality.

a state of sympathetic arousal,¹⁶ we can aim to ‘tip’ our clients’ vegetative system into a parasympathetic state of relaxation and integration. The cleansing of the tissues might release psychosomatic symptoms.

We can also follow the sounds in order to unlock an uncompleted emotional cycle. This may release a whole ‘vegetative tree’. The client is likely to re-experience the previously suppressed emotional arousal and, this time round, may be helped to find a satisfactory completion.

We can hear a wide variety of peristaltic sounds through the stethoscope. We don’t know what causes the variation in sounds and don’t know exactly how they relate to emotional processes. Our interpretation of the sounds is built on experience of working with the stethoscope in Biodynamic massage and on our ‘intuitive sense’. Some of the sounds seem free and flowing, while others seem rusty and stuck or reluctant and shy. There are watery sounds like babbling brooks or fast-moving rivers; dry knocking sounds or the sound of dry pebbles tumbling down; sounds of creaky old doors starting to open, roaring lions, or the sounds of whistling winds. In her article ‘Working with the stethoscope’ (1996), Clover Southwell writes about a peristaltic sound that doesn’t properly engage as ‘skidding’. We won’t follow these ‘skidding’ sounds, and will try to bring out sounds that are more connected and engaged.

Clover Southwell gives lovely descriptions of how peristaltic sounds can be used to guide a Biodynamic massage.

With practice we learn that the belly sounds come as a very specific response to what our hands are doing in the massage. For instance, we move a hand slowly down a person’s shin; at a precise moment, as our hands pass a precise spot, we hear a sound in the stethoscope, showing us that this particular spot in the body is now ready to discharge – change. Our next stroke can work precisely on the responding spot, to ‘find’ more sounds. (Southwell, 1996, p.1)

Apart from the fascination of the variety in the sounds, their precision is equally exciting. By paying attention to exactly which millimetre of the client is responding, and at exactly what depth, and to exactly what sort of touch, in which direction, we can go on an amazing energy dance with our client. When Mona Lisa Boyesen was working this way with me as a client, I used to feel perfectly ‘tuned’ by the end of a session, all harmony and sweet vibrations one week, all balanced strength and structure another week. (Southwell, 1996, p.2)

By listening to and following the peristaltic sounds, Boyesen was able to guide the therapeutic process. She discovered, through experience, that the flowing watery sounds indicated that the internal pressure in the body tissues was ripe for release. The dryer ‘knocking’ or ‘creaky old door’

16 Sympathetic arousal – arousal governed by the sympathetic branch part of the autonomic nervous system that takes over in fight-or-flight circumstances, when an immediate and effective response is required (Stauffer, 2010).

sounds would indicate that a new layer of repressed emotional process was starting to surface. As described above (2.3.1), we carry different layers of repressed or blocked emotional processes in our body. So once we have cleared one layer and the watery sounds have emptied away, we might start to hear dryer knocking sounds, indicating that a new layer of repressed emotion is now getting ready to be worked with. The opening of a new layer, of another uncompleted emotional cycle, can potentially increase the internal emotional pressure and create psychosomatic symptoms.

Boyesen found that she could either encourage harmonisation by following the watery sounds or she could choose to provoke and encourage repressed emotional material to surface by focussing on the dryer sounds. She could use the psychoperistaltic sounds in a very precise way. She was a master at unlocking uncompleted emotional processes and facilitating their completion and release. Her sessions often had a strong impact, helping a person to relive old emotional experiences in order to find a more positive outcome. Boyesen saw her clients mainly for short-term block therapy or would work with people in (training) group settings, so strong, impactful sessions were appropriate.

Boyesen would generally teach her students to work with what was ripe for release (watery sounds), the layer that was closest to consciousness, so that the client would be able to integrate and process their emotions and feel lighter and freer in their body.

Not every massage will produce psychoperistaltic sounds. Sometimes, when clients are not very connected to their body and their self-regulation is impaired, it can take a few sessions before the peristaltic sounds respond. Sometimes clients have too much stress, fear or grief in their lives and fear becoming overwhelmed by their emotions if they let go. Sometimes it takes a while before trust is established. We then offer support for as long as it takes and try to find gentle ways of encouraging release.

I combine Biodynamic psychotherapy and massage in my own practice. My clients tend to come for regular weekly sessions and have busy daily lives. Alongside a psychotherapeutic process of gaining trust, awareness and insights, I use my understanding of psychoperistalsis and massage to help encourage cleansing, reconnection with one's sense of self, and embodiment.¹⁷ Now and then the therapy or massage might unlock a suppressed emotional cycle and bring up a strong charge, which can then get worked through and integrated. However, in general, the clearing of repressed emotions or old stress patterns, the cleansing of the tissues, the releasing of psychosomatic pain and the reconnection with one's body and sense of self tend to be a gradual process.

Below is an example from a presentation given by Gerda Boyesen at a conference in Vienna in 1997. It shows how she was searching for the opening of the psychoperistalsis and how the release of the peristaltic sounds enabled the whole vegetative anxiety pattern to dissolve.

The term 'vegetotherapy'¹⁸ relates to a Biodynamic method whereby the client is encouraged to feel and follow bodily sensations and impulses that are related to repressed emotions. The client often re-experiences the repressed event and is helped to find a more fruitful outcome to the old situation. This allows a completion of the emotional cycle. Hormonal traces of the previously blocked emotion

17 Embodiment – Being and feeling in one's body, aware of one's physical and physiological sensations

18 Vegetotherapy – Wilhelm Reich's concept for his direction in body-oriented psychotherapy

can then be cleared, connective tissue becomes more fluid and pulsation resumes. Vegetotherapy mainly happens lying down on a mattress, but is also possible in a chair or standing up. It generally does not involve direct touch, but here Gerda Boyesen completes the vegetotherapy session with massage.

A young woman who had worked with me in a deep regressive vegetotherapy on a mattress had experienced being in the bath with her mother when she was one and a half years old. She had fallen into the water and almost drowned when her mother went to answer the telephone. She was rescued but the experience left her with a lot of fear, which had come up during vegetotherapy. She still had tremendous fears and anxieties as the session neared its end. I searched for psycho-peristalsis but there was none. It was difficult to find the key to open it. Finally, I found it. It turned out to be in the aura of the nose. When I worked there strong psycho-peristalsis came and she exclaimed: "Now I feel good and all my fear has gone". (Boyesen, G., 1997)

2.4.2. Psychoperistalsis in Biodynamic psychotherapy

In Biodynamic psychotherapy we don't work directly with the different psychoperistaltic sounds. However, we are aware of the three levels of the Emotional or Vasomotoric Cycle – the vegetative, muscular and mental levels – and keep in mind the concept of self-regulation and the importance of completing and digesting an emotional process or stressful event.

During sessions we are attentive to arousal and relaxation states in our client and in ourselves. We are mindful of any word, gesture or breath impulse that brings a change. We regard these subtle movements as at least as important as the content of what the client says.

We consider a session where our client feels great as a session well spent, as we are tuned in to all the vegetative processes that are going on inside. We are not just looking for problematic issues.

We aim to create a space and opportunity for our client's inner subconscious intelligence to guide the process. The Biodynamic view is that there is a life force (based on vegetative processes) that will always try to move towards healing and fulfilment of one's potential. Our job is to help the client to trust this life-force movement and align to it.

Familiarity with their own psychoperistaltic responses to their emotional states makes clients more aware of their vegetative processes and their link to an organic inner intelligence, the intelligence of their 'second brain'. (Gershon, 1998)

The clearer we are, the more we can be in touch with this inner guiding force and the more we will feel present and fulfilled in our life.

2.4.3. Psychoperistalsis as a self-regulation tool for psychotherapists

Psychotherapy sessions can be intense experiences for the psychotherapist. We are often witnessing enormous pain and struggle and this will, of course, have an impact on us. It is very important that

we have time to process and digest these experiences and having awareness of our own psychoperistalsis is a valuable tool. It helps us keep in balance. For myself, I notice that I can release mental or physical tension by opening my psychoperistalsis through relaxation, gentle stretching or self-massage.

I have dear memories of seeing Gerda Boyesen resting between sessions, stethoscope in her ears, a crime novel in her hands, listening to her own psychoperistaltic sounds. She would 'digest' the impact of the previous session, so that she could remain in touch with her libido streamings and be refreshed for her next client.

Part 3

Boyesen's physiological and neurological understanding of psychoperistalsis

Gerda Boyesen presented her work and theories in articles, but was reluctant to share her understanding of the physiology of her theories in much detail, as her findings had not been taken seriously in Norway. Her daughter, Mona Lisa Boyesen, took it upon herself to present Boyesen's physiological theories in a series of articles entitled 'Psycho-peristalsis: Parts I – VIII', and in a later series of articles 'Foundation for Biodynamic Psychology: Parts I – II'. These articles were first published in the 1970s in *Energy and Character: the Journal for Bioenergetic research*, edited by David Boadella and in the *Collected papers of Biodynamic Psychology*, Volumes 1 and 2 (1978/1980). These publications were distributed internally among the Biodynamic community.

When Gerda and Mona Lisa Boyesen presented their physiological theories on psychoperistalsis, little was known about the enteric nervous system in the intestinal walls, the vast network of connective tissue and the important role of connective tissue in metabolic processing and encapsulating the emotionally charged fluid. Since the 1970s and 1980s, huge advances have been made in neuroscience, particularly in affective neuroscience,¹⁹ which looks at the neurology of emotions and at the impact of emotional trauma on brain and neural functioning.

In part 1, I have explained that current research on the gut microbiota indicates that gut bacteria play a role in emotional wellbeing and that stimulation of the vagus nerve can influence our emotions. However, Gerda Boyesen's discovery of the link between peristaltic movements (the 'migrating motor complex') and the release of emotional repression is, as yet, unproven.

I will attempt to explain Boyesen's physiological understanding and have chosen seven principles that underpin her concept of psychoperistalsis. I will link these principles to current theories that, in my opinion, support Boyesen's explanation of the role of psychoperistalsis in emotional processing.

The seven principles are:

1. The intestines are involved in emotional processes.
2. Peristaltic movement in the intestines is not only triggered by the presence of food (migrating motor complex).
3. Emotions move in the walls of the intestines.
4. Blocked emotions create muscle and respiratory tension, a thickening of connective tissue and stasis in the intestinal walls.
5. We can track or guide emotional processing through following psychoperistaltic sounds.

19 Affective neuroscience – the neural understanding of emotions (Panksepp, 1998)

6. Peristaltic movement can release internal pressure and help release a whole repression pattern in body and mind; this allows a cleansing of body tissues.
7. When body tissues are cleared we can feel fluid streamings, which contributes to a sense of well-being and vitalisation.

3.1. The intestines are involved in emotional processes

Our digestive system, the ability to take in nutrients and expel waste products, is one of the most fundamental systems of the body. The digestive tube (endoderm layer) together with the neural tube (ectoderm layer) is the earliest of the embryonic organ developments, starting just three weeks after conception (Blechsmidt, 2004).

3.1.1. The intestines have a huge nerve supply

The intestines, more than any other organ, have a huge nerve supply, similar to the brain. The intestines are connected to the rest of the body through three nerve-supply systems:

1. The vagus nerve: a hugely important cranial nerve connecting the intestines directly to the brain stem.
2. A range of peripheral nerves that come out from the spine.
3. The enteric nervous system: a complete nervous system that can function independently from the brain, which is embedded in the lining of the intestines.

When Boyesen wrote about her theories, information about the enteric nervous system was not yet published. Michael D. Gershon, MD, author of *The Second Brain: – Your gut has a mind of its own* (1998), was one of the first people to write about the enteric nervous system as the gut's own independent nervous system.

Gershon states:

We have more nerve cells in our gut than in the entire remainder of our peripheral nervous system. The enteric nervous system is also a vast chemical warehouse within which is represented every one of the classes of neurotransmitter found in the brain. Neurotransmitters are the words nerve cells use for communicating with one another and with the cells under their control. The multiplicity of neurotransmitters in the bowel suggests that the language spoken by the cells of the enteric nervous system is rich and brain-like in its complexity. Neuroscientists, whose horizon ends at the holes in the skull, are continually amazed to find that the structure and component cells of the enteric nervous system are more akin to those of the brain than to those of any other peripheral organ. (Gershon, 1998, p. xiii)

Gershon refers here to the enteric nervous system and its vast chemical warehouse. The gut is also connected to the brain and other areas of the body through the vagus nerve and the peripheral spinal nerves. Consequently, the gut's connection to whatever is going in our body or brain is vast.

3.1.2. The intestines are our body's largest sensory organ

In *Gut: the inside story of our body's most under-rated organ*, Giulia Enders writes:

The gut has not only a remarkable system of nerves to gather this information, but also a huge surface area. That makes it the body's largest sensory organ. Our eyes, ears, nose, or skin pale by comparison. The information they gather is received by the conscious mind, and used to formulate a response to our environment. They can be seen as life's parking sensors. The gut, by contrast, is a huge matrix, sensing our inner life and working on the subconscious mind. (Enders, 2015, p.121)

In total, the surface area of our digestive system is about one hundred times greater than the area of the skin. (Enders, 2015, p.36)

Neuroscientists like Antonio Damasio (2000, 2004) have shown that emotions are, in essence, neural and hormonal communications to the brain (see 3.3.).

The huge surface area, the vast amount of neural connections and neurotransmitters in the intestines, as well as the nerves to and from the intestines, make it highly likely that the intestines are involved in everything that is going on, including emotional processes.

I will describe the vast interconnecting network of connective tissue that also connects the intestines to every part of the body in 3.6.

3.2. Peristaltic movement in the intestines is not only triggered by the presence of food (migrating motor complex)

There is evidence that there is a movement in the intestines that is not related to the breaking up of food or its movement along the lumen (the inside) of the gut. Scientists call it the '**migrating motor complex**' (Enders, 2015).

3.2.1. What creates movement in the intestines?

The peristaltic movements are created by the smooth muscles in the intestinal walls. These smooth muscles are controlled by the enteric nervous system and are also coordinated by direct cell-to-cell communication between the smooth muscle cells (Stauffer, 2010, p.123). This cell-to-cell communication may be the same or an addition to what Gershon calls inter-neuron communication in the enteric nervous system (Gershon, 1998, p.45).

There are three kinds of movements in the intestines

1. Movement of fluid from inside the small and large intestines. The breaking down of food happens in the small intestine. The blood then picks up the nutrients through the walls of the small intestine and transports them throughout the body. In the large intestine the

residual fluid is extracted in order to compact the non-digestible matter (faeces). This process is chemically mediated; no peristaltic movement is necessary.

2. Peristaltic movement that makes food move down along the lumen. Different segments contract and fluid squirts in both directions. This is what we can hear.
3. Peristaltic movement that does not need to be stimulated by the presence of food, which happens typically every hour, when relaxed. The alimentary canal has its own pulse.

(Stauffer, 2005, 2010; Gershon 1998; Cannon, 1911, Enders, 2015)

Point 3 is the movement involved in psychoperistalsis.

Enders writes:

An hour after the small intestine has digested a food item, it begins the cleaning-up process. The scientific name for this process is 'migrating motor complex'. When it kicks in, the stomach doorman is kind enough to open the gates again to allow these leftovers to be herded into the small intestine. It then moves them along with a wave powerful enough to sweep everything along with it. When observed with a camera, this looks so cute that even sober-minded scientists can't help but nickname the migrating motor complex the little 'housekeeper'.

Everyone has heard their little housekeeper at work. It is the rumbling tummy, which, contrary to popular belief, does not come mainly from the stomach, but from the small intestine. Our tummies don't rumble when we're hungry, but when there is a long enough break between meals to finally get some cleaning done. (Enders, 2015, p.83)

3.2.2. What can stimulate peristaltic waves apart from food?

In Enders' quote above (3.2.1.) scientists confirm Boyesen's theory that there are peristaltic movements that are not based on moving food along the lumen, i.e. the 'migrating motor complex'. They are, however, not fully clear about what stimulates these peristaltic waves, apart from describing it as a cleaning movement. Scientists have not (yet) made any connection between the migrating motor complex and emotional processing, in the way Gerda Boyesen did.

There are some scientists whose description of what stimulates peristaltic waves might support Boyesen's understanding.

Michael Gershon, for example, describes how the neurotransmitter serotonin stimulates peristaltic movement.

All the agreement about how serotonin starts peristaltic reflexes has been very gratifying.... Recently, moreover, serotonin's ability to initiate peristaltic reflexes has been a model that investigators are finding is applicable to other reflexes as well. (Gershon, 1998, p. 215)

Serotonin contributes to feelings of wellbeing. It is a neurotransmitter that regulates our emotional mood. Gershon's observation that serotonin release stimulates peristaltic movement makes me

wonder whether massage, which is often pleasurable for the body, can stimulate serotonin production. We already know that attuned touch can stimulate the release of oxytocin, another chemical that contributes to wellbeing (Moberg, 2011), so the same may be true for serotonin. The vast majority of serotonin is created in the intestines.

At the moment, there are more serotonin receptors in the gut than there are known functions of serotonin. Clearly, we still have no idea of what most of the enteric receptors for serotonin are doing. (Gershon, 1998, p.209)

Boyesen found support for her discovery of the link between peristaltic movements and emotional processes when she came across an article, published in *Tidsskrift Norske Laegeforen* (1964), by Professor Johannes Setekleiv, a Norwegian scientist and researcher. Setekleiv discovered that fluid distension pressure in the lining of the walls of the guts could set off the third form of peristaltic movement. Setekleiv talked about smooth-muscle cells in the lining of the gut needing to be within what he called a certain 'zone of firing' in order to produce peristaltic movements. Overextension due to too much fluid pressure would render the smooth musculature hypotonic. The hypotonia in the smooth muscles prevents the intestines from bursting under too much pressure, a very useful way of neutralising an excess of inner (emotional) pressure. The smooth muscles go slack and peristaltic contractions are no longer possible.

Seitekleiv's theory of fluid pressure in the walls of the intestines fitted beautifully with Boyesen's theory of energetic fluid, fluid stasis and visceral armouring in the alimentary canal that are all part of emotional arousal and repression, as described in 2.3. I will explain the role of connective tissue in this process in 3.6.

3.2.3. What can block peristaltic movements?

Boyesen discovered, by observing her own emotional states in relation to the peristaltic sounds, that emotional or psychic disturbances inhibited the peristaltic movements (see part 4).

Walter B. Cannon, Professor of Physiology at Harvard University, confirms this. Cannon was one of the first scientists to discover the peristaltic movements (now called 'migrating motor complex') early in the twentieth century. He used Rontgen rays to study the movements of the intestines in animals. In *The mechanical factors of digestion* (1911) he describes how emotional disturbances in the animals he researched would stop the intestinal movements:

Even slight psychic disturbances were accompanied by stoppage of peristalsis. (Cannon, 1911, p.218)

Cannon's observations support, in my opinion, Boyesen's discovery that peristaltic movements are influenced by emotional states.

3.3. Emotions move in the walls of the intestines

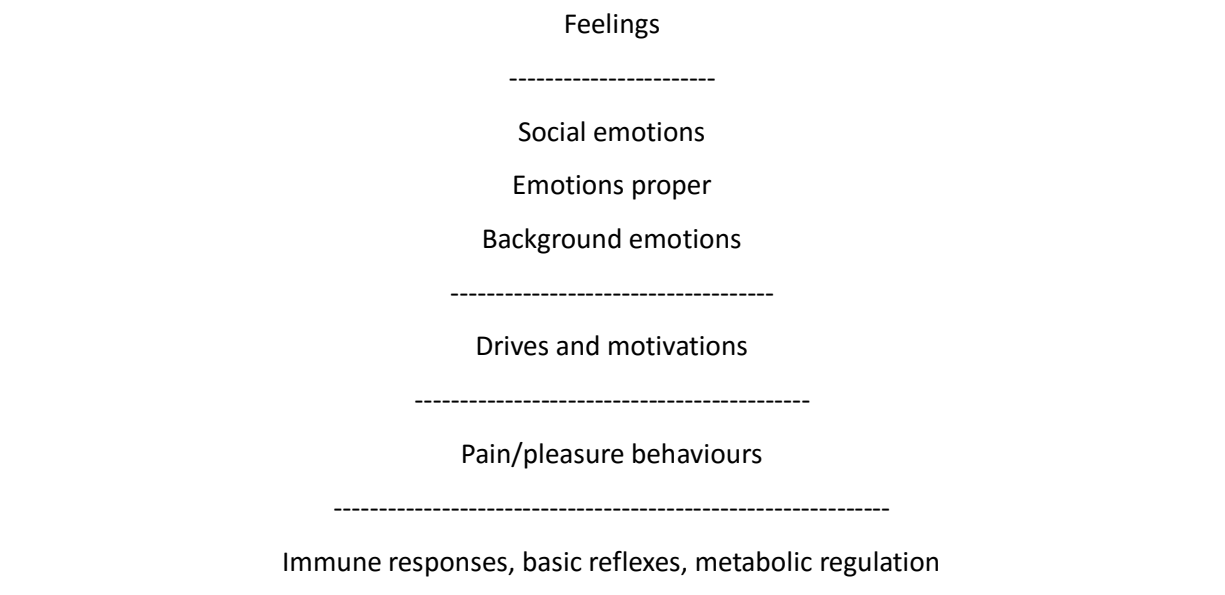
I have explained in 3.1. that the intestines are likely to be involved with everything that is going on elsewhere in the body and the brain, due to their huge nerve supply and the fact that the enteric nervous system is embedded in the walls of the intestines.

In *Looking for Spinoza* and *The Feeling of What Happens* neuroscientist Antonio Damasio describes what emotions are and where our sense of self comes from. According to Damasio, emotions are neural and hormonal communications to the brain and are part of homeostatic regulation. This is how life is organised, from simple single-cell organisms to complex organisms with brains, including humans. All forms of life are geared towards survival.

Damasio suggests that there are several levels of homeostatic regulation and each higher level incorporates the lower levels. The first level is a single-cell organism. It consumes food, creates energy for movement and growth and disposes of waste products. 'Emotions' are messages to the brain at a higher and more complex level and 'feelings' are on an even more complex level. Feelings create context around an emotion. Feelings require processing by the brain, creating a particular mapping in the cerebral cortex. This mapping and context gives us the chance to choose how to react to our initial emotional responses.

Damasio portrays the different levels of homeostatic regulation like an interconnecting 'tree'.

3.3.1. Damasio's 'tree' – levels of automated homeostatic regulation



-
- Level 5 Feelings – ability to create context around emotions
 - Level 4 Social emotions – sympathy, embarrassment, shame, guilt, pride, jealousy, envy, gratitude, admiration, indignation, contempt

	Emotions proper – fear, anger, disgust, surprise, sadness, happiness
	Background emotions – feeling good, bad, somewhere in between
Level 3	Drives and motivations – hunger, thirst, curiosity, exploration, play and sex (the libido drive is part of this level)
Level 2	Pain/pleasure behaviours – withdrawing, contraction (pain); reaching towards and expansion (pleasure)
Level 1	Every organism is geared towards survival, consuming food, creating energy for movement and growth and disposal of waste products

(Damasio, 2003, pp.32, 37, 45)

Damasio sees these neural and hormonal messages as coming from the depths of the body. He is not specific about emotions moving in the walls of the intestines, but as mentioned above (3.1.2., Enders, 2015), the intestines are our largest sensory organ, informing the brain of our subconscious inner life. As the walls of the intestines contain their own vast, independent enteric nervous system, Boyesen's idea that emotions travel up the walls of the intestines, as part of a whole emotional pattern ('vegetative tree'), seems to me very feasible.

3.4. Blocked emotions create muscle and respiratory tension, a thickening of connective tissue, and pressure in the intestinal walls

3.4.1. Muscle armouring

In *Anatomy and physiology for psychotherapists* (2010), Kathrin Stauffer gives a good description of how emotions get locked in by the muscles, in case of conflict:

The simplest way of thinking about muscles tension is to see it as embodying a conflict. Part of me wants to make a particular movement; another part of me wants to stop that movement. The muscles that would make the movement tense in the attempt, and the muscles that prevent the movement tense as well: the result is immobility in the corresponding part of the body. The great Wilhelm Reich (1933/1972) saw this as a basic mechanism of neurosis formation, because it fulfils all the requirements of a defence: It embodies the original desire as well as the inhibition, creates a layer of inactivated tissue around the tensed-up muscles, and at the same time binds large amounts of physical energy (required to hold all the tension in the muscles), which in turn decreases the anxiety provoked by the conflict. (Stauffer, 2010, p. 92)

Muscles and connective tissue are important in the process of repression. They hold back the emotional impulse. Chronic muscle tension can become muscle armouring, which can lead to postural changes in the body.

In addition, there will be a restriction in breathing (contraction of intercostal muscles and other muscles involved in breathing) in order to hold down the emotional impulse and expression. Shock will create a startle reflex pattern where the in-breath is held.

The smooth muscles in the walls of the intestines can also harden (hypertonia) or go slack (hypotonia) due to conflict or stress. This will hamper the peristaltic movements.

3.4.2. Tissue armouring: how does connective tissue get blocked?

When there is an emotional updrift or stress, the nerves sending signals to certain muscles to get ready for action are activated and the blood supply increases. The sympathetic nervous charge and hormones, like adrenaline, tighten the blood vessels to increase the blood pressure to the areas that need to be prepared for action. The extra blood supply fills the tissues around those particular muscles. If there is a conflict, expression or action will be blocked. The muscle tension can't be released (see Stauffer, above) and the hormonal fluid that has swamped the area now gets stuck too. As well as an increase in fluid pressure (energetic fluid), there are associated uncomfortable emotions that are difficult to bear. Our body therefore tries to deaden the area, so that we won't remain aware of these feelings. This blocking and deadening creates stagnation. Without pulsation or movement, the lymph vessels and veins cannot clear the area and the fluid and hormonal and chemical remnants stay stuck in the connective tissue. The connective tissue initially becomes swollen with fluid, but eventually will become more fibrous in order to bind the charge and fluid. This further hampers the cleansing action of the lymph vessels and veins (Juhan, 1987; Lee, 1985). I will describe connective tissue's ability to become fluid or fibrous in 3.6.3.

3.4.3. Visceral armouring: fluid stasis in the intestinal walls

The walls of the intestines have four layers:

1. The peritoneum is a layer of connective tissue that surrounds the outside of the guts.
2. The second layer consists of two layers of smooth muscles: the longitudinal muscles and the round muscles. Movement of these muscles is involuntary and influenced by the autonomic nervous system. They create the peristaltic movement. As described above, these smooth muscles can become hypotonic if the fluid pressure is too intense and there is a risk of the walls bursting. This lack of tonus inhibits peristaltic movement.
3. The submucosa is another layer of connective tissue in which all the arteries, the nerves of the enteric nervous systems, veins and lymph vessels are embedded.
4. The fourth layer is the lining of the guts (lumen). This is where nutrients are taken up by the blood.

(Stauffer, 2010)

The surface of the lumen has lots of folds, packing an incredible amount of surface area into a relatively small space.

The surface of the small intestine is huge. Its area is magnified by a structure in which the surface folds, folds again, and then folds once more. (Gershon, 1998, p.140)

I find it interesting that the arteries, veins, lymph vessels and enteric nerves are all embedded in the submucosa layer, which is a layer of connective tissue. I have described above (3.4.2.) how a blocked

emotion will cause (energetic) fluid stasis in the connective tissue. The area becomes stagnant and the lymph vessels and veins' cleaning job will be impeded. Connective tissue will start to encapsulate the energetic fluid so that it can contain the fluid and numb the emotional charge, which inhibits movement and pulsation even further. I imagine, therefore, that the submucosa layer in the walls of the intestines is also likely to go fibrous, encapsulating the hormonal, emotionally charged fluid.

The second layer of smooth muscles will, very likely, also be responding to emotional conflict by hardening or going slack.

3.5. We can track and guide emotional processing through following psychoperistaltic sounds

3.5.1. Tracking emotional processing in psychotherapy

In psychotherapy, we try to help clients process and assimilate emotional experiences that they previously couldn't integrate. Thanks to neuroscience, we now know that psychotherapy helps build new neural pathways and maps in the cerebral cortex (Damasio, 2000, 2004; Schore, 2003; Siegel, 2011). The re-wiring and re-mapping in the brain (neuroplasticity) helps to create a different context around feelings. The next time a painful or scary feeling gets triggered, it may not be quite so entrenched and we may have tools to handle it better. This inner change is reflected by new neural pathways and maps in one's brain, and this can be seen in brain scans. (Schore, 2003; Cozolino, 2010; Siegel, 2011)

In Biodynamic psychotherapy we don't only focus on the brain; we focus equally on changes in the body. As everything is integrated, a different mapping in the brain will influence the physiology of the body, just as changes in the body physiology will influence the brain.

3.5.2. Psychoperistalsis as a tracking device

Boyesen saw the muscles as subject to our conscious control, as they are controlled by our voluntary nervous system. We can consciously decide to move or to block a movement. The vegetative processes are controlled by our autonomic nervous system and are therefore outside our conscious control. Hence, these vegetative processes are linked to unconscious processes. Chemicals and fluids are our basic internal make up, the undercurrent that influences everything. Changes to these fluid movements, neural patterns or chemical releases will change how we feel.

Kathrin Stauffer argues in her article 'On Peristalsis':

If we want to communicate with a person's unconscious mind, one way of doing it is to communicate with their autonomic, or spontaneous, physical processes. If, as a result of such communication, the way the fluids and chemicals move around my body changes, be it ever so slightly, I will have a profoundly different felt sense of myself and of the way I respond to a situation. (Stauffer, 2005, p1.)

She continues:

So if we want to work with these deeper unconscious layers of our souls, it makes sense to devise ways of following autonomic processes in the body. We like to speak of 'tracking' a process – that is, following one or several autonomic variables (say, skin colour or temperature, intestinal activity, or heartbeat) as a means of following what is happening in the soul of the person. (Stauffer, 2005, p2.)

Stauffer describes psychoperistalsis as a useful tool for tracking our autonomic responses, i.e. our deeper unconscious layers. Psychoperistalsis is only active when it is safe, when there is no need for a flight-or-fight response. It is an indicator of parasympathetic activity.

Boyesen became aware of how peristaltic movements respond to thoughts, moods and emotions (see part 4). Peristaltic waves that help release emotional fluid stasis in the intestinal walls are therefore not just involuntary automatic processes; they are also influenced by emotional states. Boyesen discovered that she could guide a therapeutic process by following the peristaltic sounds.

Gerda Boyesen's concept of the 'vegetative tree' suggests that a change in the peristaltic movement, as an indicator of physiological changes, can potentially change other areas of the body that are related to a particular stress experience or emotional repression.

3.6. Peristaltic movement can release internal pressure and help release a whole repression pattern in body and mind

Gerda Boyesen discovered, through observing her own and her patients' processes, that by changing the fluid pressure in the walls of the intestines, through psychoperistalsis, she could unlock and unravel an emotional process. Peristaltic movement releases fluid stasis in the connective tissue of the walls of the intestines. If this fluid stasis is linked to the repression of an emotional process (vegetative tree) then releasing the stasis in the walls of the intestines can potentially release the emotional repression elsewhere. I will show below how the vegetative pattern of emotional repression (the vegetative tree) is reflected in the network of connective tissue throughout the body.

3.6.1. The various forms of connective tissue

Connective tissue can vary from fluid to strong fibres. The connective tissue fluid is produced in specialised cells called **fibroblasts**. Fibroblasts also produce the long white fibres of collagen. These tough strands give all the organs and other tissues their shape, resilience and strength. The fibres can be arranged in any kind of way. The fibres themselves are not living and have no nucleus. The fibroblasts cells can travel quickly through the whole body and play a key element in wound healing (Juhan, 1987).

In his book *Job's Body* (1987), Dean Juhan gives an excellent description of the different qualities of connective tissue.

A transparent fluid ground substance is found to one degree or another in all of the body's connective tissues, and it may be thought of as the basis for the production of all their other forms. This viscous liquid, much like raw egg whites in appearance and consistency, surrounds all the cells in the body, and is part of the internal ocean. (Juhan, 1987, p. 64)

Connective tissue however exists not just in fluid form. It can have different consistencies. Connective tissue is everywhere in the body. Until recently, when scientists dissected a body, they would cut out all the connective tissue and what would be left to investigate would be muscles and bones. Now with 3D imaging, we can appreciate how huge the connective tissue network is; it connects everything. When Boyesen wrote her theories, the extent of the connective tissue network and its ability to change texture had not yet been fully understood.

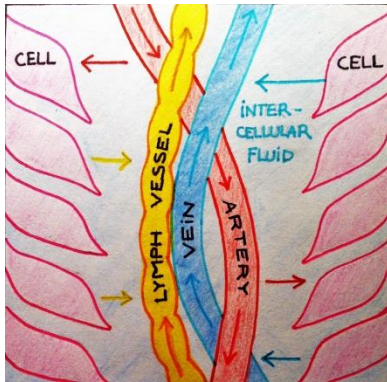
Just beneath the skin it forms an envelope that wraps the body as a whole. Beneath its outer layer it organizes the muscles into functional groups, wraps each individual muscle, and also honeycombs the interior of the muscle belly with supporting septa. It gathers the ends of the muscles into tendons, and tendons blend into the fibrous sheath that covers the bones, the periosteum; the periosteum is continuous with the ligaments, and even with the inner coating of the hollow bones, the endosteum. (Juhan, 1987, p.75)

Connective tissue binds other specific tissues into their organ shapes and supplies them with vessels and ducts. It ties these organs together, and suspends them in their proper relationships in the body cavities. It forms the walls of the blood and lymph vessels, it surrounds these vessels and it anchors them into place among the muscles, bones and organs. It anchors the nerves in the same fashion. (Juhan, 1987, p.75)

In short, connective tissue constitutes the immediate environment of every cell in the body, wrapping and uniting all structures with its moist, fibrous cohering sheets and strands. (Juhan, 1987, p.76)

3.6.2. The role of intercellular or interstitial fluid in the diffusion process

As described above, there is a fluid form of connective tissue that surrounds all cells, known as interstitial or intercellular fluid. It links each cell with the blood supply. Arteries branch out into smaller capillaries, but not all of the capillaries can reach all of the cells. The exchange of oxygen and nutrients and clearing of waste products therefore happens in this intercellular tissue space (see image). This process is called diffusion – nutrients from the blood pass through the walls of the capillaries into the intercellular fluid and these nutrients and oxygen are then absorbed through the cell membranes into the cell. In the same way, waste products are expelled by the cells into this intercellular fluid and are then taken up by lymph vessels and veins. Lymph vessels and veins need movement or pulsation to be able to do their job. If the area is deadened or restricted due to stress or emotional blocking, this whole exchange is hampered.



Drawing of the role of inter-cellular fluid in the diffusion process.
 Nutrients and oxygen from the arteries are transported into the cells; waste products are expelled by the cells into the intercellular fluid and picked up by the veins and lymphatic vessels.

I have shown in point 3.4.2. how a blocked emotion causes (energetic) fluid stasis in the connective tissue. This energetic fluid stasis is full of hormonal and chemical substances that now cannot get taken up by lymph vessels and veins. The lymph vessels and veins should constantly be clearing the basic metabolic waste products, expelled by cells, regardless of emotional charge, but when the whole area becomes stagnant, and all this cleansing is restricted. Connective tissue will start to encapsulate the energetic fluid so that it can contain the fluid and numb the emotional charge, which inhibits movement and pulsation even further. Changes in connective tissue will be mediated by further chemical processes.

When we massage or exercise we bring movement into the area again, which will bring it back to life and can re-stimulate the energetic charge. Unless the conflict is still active, the connective tissue will return to fluid and now the cleansing process can restart. Old fluid and hormonal waste products are absorbed through the lymph vessels and the veins and cell pulsation is re-established. The tissue can get cleansed and basic cell pulsation can resume.

3.6.3. Connective tissue and thixotropy

Connective tissue can change consistency and can take on varying degrees of fluidity. The process of change from viscosity to fluidity, and vice versa, is called thixotropy. Thick, tough fibres can soften and become more porous (Juhan, 1987). The opposite effect can also happen, whereby connective tissue becomes more and more glued together, by collagen fibres linking together in hydrogen bonds. It is these ever-tighter hydrogen bonds that create stiffness. This is also how connective tissue encapsulates emotional charge.

Due to the thixotropic nature of connective tissue, movement and touch can have a big impact on the quality, permeability and fluidity of connective tissue. Connective tissue can also be influenced by energy fields.

This thixotropic effect provides one of the cornerstones for effective bodywork. Since connective tissue is largely non-living, it is the mechanical motion and friction caused by muscular activity which provides much of the energy and warmth that maintains its fluid

qualities. When a part of the body loses some degree of movement and vitality through trauma or disuse, it will not be as inviting, as comfortable, perhaps not even as possible to move that part with the vigor it requires to keep the connective tissue warm, moist, and resilient. (Juhan, 1987, Job's body, p.69)

The network of connective tissue all through our body supports Boyesen's concept of the 'vegetative tree' and the ability to change consistency, the 'thixotropic effect', explains why therapeutic attention, body work and massage can stimulate fluidity and help unlock an emotional process. The change from tough fibres to fluidity will increase the nourishment of cells and the cleansing process in that area. It is very likely to influence a shift in the consistency of connective tissue elsewhere too. Once the cleansing can resume, our whole body chemistry will work better, which will result in an overall feeling of well-being and lightness.

Emotional stasis in the intestinal walls is, I imagine, held by the connective tissue layer (submucosa) and possibly by the smooth muscles. It makes sense to me to think that peristaltic movement will soften the connective tissue layer and this new fluidity will stimulate the cleansing of the submucosa layer. This will influence both the nerves in the enteric nervous system, as well as bringing movement to other areas of connective tissue elsewhere in the body. Connective tissue is like a spider web throughout the body. If you pull one corner it will affect the other areas.

Not only are the intestines connected to everywhere and everything through the huge nerve supply, they are also connected to everywhere in the body through the connective tissue network.

3.7. When body tissues are cleared we can feel fluid streamings, which contribute to a sense of well-being and vitalisation

Boyesen found, through her personal experience and through work with her patients, that as bodies became more fluid and cleansed, people would experience pleasure sensations throughout their body. She felt that these 'streamings' were connected to the movement of libido, the inner life force. She realised that these 'libido streamings' were part of our basic human condition. Most adults have lost touch with their libido force. Boyesen linked losing touch with the libido force to the development of neurosis, which deadens and blocks our body tissues and therefore inhibits cell pulsation and fluidity. Her therapeutic aim was to re-establish this inner connection to the life force. She discovered that the libido streamings not only gave an inner sense of pleasure and harmony, but would also stimulate creativity, vitality, love and a deeper sense of meaning and connection to all of life. She called this being in touch with one's 'Primary Personality'.

By the Primary Personality, I mean a person who does not withdraw or encapsulate their Life Energy and its associated "streamings" – the little rippling, tingling sensations within the body that tell us we are alive; a process that usually happens during childhood. It is a person who is in touch with his or her "libido" circulation; the pleasure that is derived from being in one's environment and obtained from participation in any situation; and who will not betray this in themselves or deny it for themselves or others. There is a natural joy in life, a euphoria that is also practical and pragmatic. It is grounded. (Boyesen, G. 1982, p4)

I imagine the experience of 'streamings' to be linked to a free flow of fluids through the cells and tissues. This means that the interstitial connective tissue between the cells is fluid and pulsating. I see it as a cleansing process that can be stimulated by the movement of psychoperistalsis.

Movement therapists like Emily Conrad (Continuum Concept) and Bonnie Bainbridge Cohen (Body-Mind Centering) discovered the same principles through their movement practice (Conrad, 2007; Bainbridge Cohen, 2008). They followed the same organic, vegetative movements in the body as Boyesen did by following psychoperistalsis. Yoga practice and energetic movements like tai chi and qigong follow very similar principles. The deeper we follow the life pulsation movements and the autonomic, vegetative processes, the closer we will get to optimal metabolic processing, cleansed pulsating tissues and pleasure streamings.

Boyesen put these vegetative streamings into the context of psychotherapy, linking body and mind in its fullest sense.

Part 4

Gerda Boyesen's professional journey and how she discovered psychoperistalsis

4.1. Boyesen's professional development

Gerda Boyesen (1922–2005) lived in Norway until 1969. She was married and had three children, all of whom have become body psychotherapists²⁰. Boyesen studied psychology and worked as a psychologist in a psychiatric hospital in Oslo. She was in Reichian training analysis with Ola Raknes, a student of Wilhelm Reich. Boyesen also trained as a physiotherapist and treated psychiatric patients with specialised neuro-muscular techniques, at the Aadel Bülow-Hansen clinic. The Aadel Bülow-Hansen clinic was linked to the psychiatric practice of Dr Trygve Braatoy, who was also a student of Wilhelm Reich and of Otto Fenichel. Reich had lived in Norway between 1934 and 1939 and his Norwegian students influenced Boyesen's professional development. Boyesen combined psychotherapy and massage in her own private practice.

Gerda Boyesen came to London in 1969 and was welcomed into the thriving therapy community as a neo-Reichian therapist. She met John Pierrakos, David Boadella and Jay Stattman, and included some of their techniques in her therapeutic approach. Boyesen's clinical work expanded into teaching and she established her own form of body psychotherapy, which she called '**Biodynamic psychotherapy**'. She opened, together with her three children, a training centre in West London and people from all over the world came to train with her. She taught Biodynamic psychotherapy all over Europe and continued to teach until her death in 2005.

4.2. Boyesen's discovery of the concept of psychoperistalsis

The neuro-muscular treatments at the Aadel Bülow-Hansen clinic had a strong effect on the patients. Boyesen became aware that patients who had vegetative discharges after the massages, like diarrhoea or vomiting or strong emotional reactions like screaming or sobbing, recovered quicker from emotional distress. Release at both ends of the alimentary canal, through the mouth or anus, seemed to aid the therapeutic process. Boyesen thought of talking therapy as a gentler form of release via the mouth, and wondered whether there could be a gentler form of release at the other end of the alimentary canal. This was the first link she made between emotions and the intestinal tract.

20 Ebba Boyesen, Mona Lisa Boyesen and Paul Boyesen were Gerda Boyesen's colleagues and are all accomplished body psychotherapists and international trainers. They helped Gerda Boyesen set up her training school in London in the early 1970s and established the early training centres in Holland and France. Ebba and Mona Lisa Boyesen are currently directors of ESBPE – Europäische Schule für Biodynamische Psychologie in Germany. Paul Boyesen is the founder of Psycho-Organic Analysis in France.

She wrote:

I knew that emotional material could be discharged at two levels: from above, in an ascending motion through the oral system, and from below, descending through the anal system. Since there were also two forms of discharge from the oral system – the strong, tearful form, and the gentle, verbal form – it seemed to me that the anal system must work in the same way. I was familiar with the strong form of descending, anal discharge – diarrhoea – but now I began to wonder what the corresponding gentle form of downward discharge might be. (Boyesen, G., 1985, p.67)

Boyesen received the same neuro-muscular massages herself from Aadel Bülow-Hansen and these massages provoked emotional processes in her too. She felt a strong internal pressure coming up the alimentary canal that was pushing for expression. For almost a year she felt the need to scream, but was not able to find the opportunity to do so. Then, one day, she felt an inner switch, thanks to a tummy rumbling, and the strong internal pressure suddenly turned into a pleasurable sensation. She understood that this inner switch was potentially an amazing therapeutic tool. The intestinal movement had released the internal emotional pressure.

In *Between Psyche and Soma* Boyesen writes:

First of all, this energy rose up through the emotional channel with an urge to find expression; when I was unable to express it, it went back down again, rippling down my body like a mild, warm breeze. While it was thrusting its way upwards, it could provoke screams and emotional discharges; but it could also reverse its direction into a harmonising, descending movement that dissolved the tension completely. This is how I discovered what I call the 'fountain' or the 'melting principle'. (Boyesen, G., 1985, p. 69)

Boyesen then became aware, in her own and her patients' body, that once the muscles started to soften, fluid would accumulate in the connective tissue around the muscles. Boyesen's once beautifully shaped legs had swollen and no amount of Bülow-Hansen massage could make the fluid stasis disappear. She decided to see Dr John Olesen, a medical doctor in Copenhagen, who worked with fluid retention. Dr Olesen emphasised the importance of the cleansing function of the veins and the lymphatic system. His hypothesis was that most somatic disorders were caused by a malfunction of the venous blood circulation, due to inadequacy of the vein pump. Veins and lymph vessels need movement to help facilitate the uptake of waste products. Dr Olesen made the fluid stasis in Boyesen's legs disappear through working on the connective tissue, which stimulated the lymph and venous uptake of waste products. His work greatly influenced Boyesen's later theories of tissue armour, visceral armour and the Vasomotoric or Emotional Cycle.

Boyesen was now aware that as well as muscle armouring, there could also be fluid blocks in the body (tissue armouring) holding emotional charge. She developed massages that worked on connective tissue, like the membrane that envelops the muscle fibres. This is how she discovered psychoperistalsis.

I now began working on the surface of the muscle membrane only. As I did so I noticed an intriguing phenomenon: quite loud gurgling noises – the sounds of peristalsis – could be

heard from my patients' abdomens. Each time that I worked in this way, I now heard the same story: my patients told me how they clearly felt the inner pressure from which they were suffering diminishing during the massage, and, little by little, they felt their anxiety slipping away. Their psychosomatic ailments and muscular pain also disappeared, and they began to discover and delight in a new sensation: their bodies were filled with delicious feelings of pleasure and sweetness that seemed to flow through every single cell. (Boyesen, G., 1985, pp.65, 66)

There was a clear link between the release of fluid stasis and intestinal peristaltic movements.

Boyesen became more and more intrigued and discovered that she could listen to peristaltic sounds with the use of a stethoscope. From then on she didn't stop exploring what influenced the sounds. She discovered that emotions and states of mind would influence the peristaltic movements.

Though the peristaltic waves were sensitive to interference, they only reacted to disturbances in my emotions. Demands, anticipation, insecurity, ambivalence – these all broke the flow of the waves, whereas neutral disturbances such as traffic noise, the radio, unfamiliar voices and so on did not. (Boyesen, G., 1985, p.77)

As the sounds were clearly influenced by emotional states, Boyesen called these peristaltic movements '**psychoperistalsis**'.

Boyesen realised that by listening to the peristaltic sounds she could monitor whether the massage was getting too provocative for her patients and, if so, she could adjust her technique and work for harmonisation rather than provocation. The psychoperistalsis would provide her with feedback and made her very accomplished at fine-tuning her treatments.

This discovery made my work with my patients much easier; now I could regulate my massage to produce a more dynamic or more gentle effect. My technique became extremely precise, as I learned how I could lead my patients' awareness into deeper layers, or simply dissolve the layers that were "ripe" and closest to the ego. Working in this way, guided by the peristaltic sounds (to which I later gave the name of "psycho-peristalsis"), I could also treat cases of depression and hysteria which we were not allowed to treat with Adel Bülow-Hansen's methods. But with my new massage method I could simply choose how deep I wanted the effects of my work to go. (Boyesen, G., 1985, p.70)

Conclusion

In Biodynamic psychotherapy and Biodynamic massage, Gerda Boyesen devised a therapeutic modality that is closely aligned to and supportive of organic life processes in the body and psyche. There is simplicity to her methods, as the focus is on allowing and supporting these natural life-force movements, yet her work is also rich and complex. I hope that this article manages to convey the therapeutic value of psychoperistalsis, a core aspect of her work. I believe that the new discoveries in neuroscience and physiology offer valuable explanations as to why psychoperistalsis can be an important tool in psychotherapy and healing. It was a tool that Gerda Boyesen understood deeply and was able to apply with great skill.

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Carlien van Heel, London, September 2015

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