**Five senses? How about 12!**

**Sensory stimulation and sensory integration.**

**Five senses? How about 12!**

Our sense organs give us information about the world, they let us perceive what is. Through them we make emotional connections to the world and we become aware and conscious. The senses stand as doorways through which “I” relate to and can ‘make sense of’ the world.

For a long time we were talking about people only having 5 senses: touch, smell, taste, sight and hearing. This has changed over the last years and we now also hear about the senses of balance, movement and warmth. In 1909 Rudolf Steiner mentioned 12 senses for the first time and since then some of these are being confirmed by mainstream science.

The 5 senses that are traditionally described, mainly tell us about our environment, about what we are surrounded with. The expansion to 12 senses looks at how we also have sense impressions from our own bodies, about ourselves, and also about other people and who they are, what they are trying to tell us. We can divide those 12 senses into 3 different categories:

- First we have 4 senses that give us information about ourselves, about our body: They are the senses of touch, life or wellbeing, movement, and balance.

- Then we have 4 senses that are directed towards the physical world around us, the environment we live in, and they are: smell, taste, sight and warmth.

- We also have 4 senses that tell us about the other, about the inner life of the other person and they are: hearing or tone, word or language, thought or meaning and ego or self. We can call these the social senses.

Below follows a brief introduction of these 12 senses, their physical organs and functions, and their effect on our psychology or emotional wellbeing.

**The 4 body senses:**

1. Sense of touch.

The organ for the sense of touch is the nerve endings around the hair follicles or below the surface of the skin, it is distributed over the whole surface of the body.

In the traditional way of understanding, the sense of touch is described as telling us about the qualities of the objects we touch: is something hard, cold, alive, dead, wood, plastic etc. Looking at that more closely, when we know if something is soft or hard, warm or cold… we have also moved, applied pressure. We have used other senses, like movement, warmth and proprioception to know what it is we have touched.

Taking all those other senses away we understand touch in a different way:

*My touch tells me where the boundary of my body is. The sense of touch in my skin is where I become aware of that boundary: everything within that skin belongs to me, everything outside that skin belongs to the world and is foreign to me. My Self, ‘I’ become aware of my own boundary when I come into contact with the physical world around me either through being touched or actively touching. My skin separates me from the world around me.*

An oversensitive sense of touch can show as irritation from labels in clothes, certain materials, pressures on the body from a belt etc… not liking to be touched, not knowing how hard I touch someone, but also irritation from lumpy food in the mouth and difficulties with bowel movements. Our food only becomes a true part of ourselves once it crosses the blood barrier, once it has gone through the lining of the intestines into the bloodstream. Our digestive tract is part of the boundary that separates me from my environment.

*A healthy sense of touch gives a feeling of safety, feeling secure. It means I can feel sure that the world and all that it has in it, will stay outside of me, and I will stay inside of my boundary and won’t lose myself if my skin doesn’t give me the secure sense of where I end. This not only gives me a sense of boundary surrounding myself, but also my awareness when I cross over within other people’s boundaries.*

The saying that someone or something can ‘get under my skin’ is often used when we feel invaded, or our boundaries are not respected by someone or something coming too close.

***I am within this boundary, what is within my skin is me*.**

2. The sense of life.

The sense of life, also called the sense of wellbeing, tells us about the health and condition of the physiological processes that occur within the boundary of the skin. If all is well, then we have a sense of contentment. We are totally unaware of all these processes going on in our bodies, we are healthy. After a long day of hard work, our sense of life lets us know that we are tired and need to rest. When we eat too much, our sense of life tells us that we have gone over what would have been ideal for the health of our physiological processes and that they are now burdened. If we don’t spoil these physiological processes through eating unhealthy food, not respecting the signs of fatigue for example, then we instinctively know what is good for us. With a healthy sense of life, we know when to stop running and rest, we know when to stop eating and rest.

The organ for the sense of life is the automatic or vegetative nervous system with the parasympathetic and sympathetic nervous system. It makes sure that all movements and organ activities are in tune with what is needed by the physiological life processes.

Rhythm is the rule of how these organs and processes occur in our body. They all have their own rhythms of activity and rest, like breathing in and out, being awake and sleeping, breaking down and building up etc.

A healthy sense of life gives a sense of contentment. An unhealthy sense of life shows in pain, discomfort, tiredness, chronic colds, poor sleep etc.

*I am my body, at one with my body, and when my body is well, I am well. If my body is unwell, I need to withdraw from the world, give it rest and time to recover. Being active in life, directing energy towards to outside world, is then hard and would further disturb the physiological processes.*

***I am this body and I am well.***

3. The sense of movement.

For the newborn baby movements are uncontrolled and unconscious. The sense of movement develops when these seemingly chaotic movements can come to rest and the child begins to control its own movements. To develop control over movement we need to move, to develop the sense of movement AND we need to have periods of rest between movements, so that we can become aware of when our body moves and when not. A child that is constantly moving, where the movement system cannot come to rest, will find it hard to develop a healthy sense of movement.

The sense of movement not only gives us information about how and where our body moves, but also gives us the inner knowledge of where our limbs are in relation to our body and to each other. Our sense of movement is also involved when we are for example reading. If we see a ‘w’ we inwardly move up and down, and so learn to recognise the form of the ‘w’.

As the sense of movement develops, movements become more and more in control. We can choose, make a decision when and how to move, we overcome gravity and levity can arise in our movements. If the sense of movement is not healthy, we may feel bound to the heaviness of the body. Movements can become clumsy and uncoordinated, or uncontrolled: *Then movements are controlling me instead of me making my body move. With a good sense of movement I am the rider on the horse (my body), I am in control of the horse. With an under developed sense of movement, the horse takes me for a ride.*

There needs to be the right balance between relaxation and tension in the muscles to achieve this sense of control and freedom over our movements.

The organ for the sense of movement is the whole muscular system, with the tendons and ligaments around the joints. That whole muscular system is involved in every movement, even if we only move our little finger. To become aware of movements, we need nerves that sense our movements in the muscles and joints. In this sense motor nerves are also sensory nerves, sensing the movements we make.

In the joints and ligaments lie proprioceptors. Deep strong touch, through firm hugs, playtime on the hard floor for example, stimulates those and helps us to feel where our body is. This works calming and reassuring, while soft touch stimulates the nerves in the surface of our skin and is more awakening, alerting. Children that always lie on a soft surface find it harder to know where their body is in space and to develop a good sense of movement.

***I am not hindered by this body, I can move it in freedom.***

4. The sense of balance.

When the child has learned to stand up, the weight of the body is overcome. He stands up in levity, against gravity. We don’t feel the weight of our body when we can stand freely. This overcoming of gravity develops from the head down. At first we can hold our head up, then we can hold our spine up and sit, and then we can stand first by pulling ourselves up, then by the support of only our legs.

The development of control of the movement system, and the connected sense of movement, is closely linked to the development of the sense of balance.

Once the upright position is achieved, then the exploration of the different directions of space can start to happen. The sense of balance is the starting point of that orientation. From our uprightness in stillness we know where in front and behind is, where left and right are and above and below. In this way the sense of balance is the first one that is not strictly limited to giving information about our body, but is a starting point to its relation to the three dimensional world surrounding it.

The organ for the sense of balance is the vestibular system. This is located in the inner ear, in the hardest bone of our body: the petrous portion of the temporal bone. It consists of two parts. One that tells us if we are in a vertical position, the other perceives our movements in the three dimensions. It is through the connection of this organ with every muscle in our body that we are able to hold our balance.

The ability to be still in our centre of the three dimensional space, allows us to recognise that others also have their own centre. This is necessary to freely share that same space with others and become social human beings.

*With a healthy sense of balance, I know that my point of reference is different from the other’s point of reference, and that difference is not threatening to my sense of who I am.*

***I am I, wherever I am within the wider world.***

We can conclude that these 4 body senses are our instruments that give us a healthy sense of ourselves. They are working just fine if we are totally unaware of them. They form as it were the foundations of our house: we don’t see them, they are partly underground, but if they are shaky, cracks and gaps start to appear.

**The 4 physical/world senses:**

5. The sense of smell.

Although the little baby can smell, for example the odour of the mother will calm him down, he is not aware of his sense of smell. Only after the child has learned to sniff and blow his nose, can he also consciously use his sense of smell and become aware of the odours around him.

The smell of something will tell us about the physical properties of things: for example if something is ripe or rotten, starting to decay or if someone is unwell or healthy.

Because smell is happening through breathing, we cannot not smell unless we pinch our nose. Smells are overwhelming, they overpower our consciousness, but luckily only for a few minutes. We need to change the stimulus, go outside and come back in, or smell something else, before we can again pick up the scent of a rotten banana. With animals the smell rules their instinct and their behaviour. With people the smell gives us information on which then to make a judgement if something is good or bad for example. The whole perfume industry is working with this immediate and unconscious instinctive aspect of the sense of smell.

The organ of smell is the nose. The nerves between the nose and the brain are very short and direct, with the olfactory bulb sitting immediately above the nose. All other sense impressions go through the thalamus, which acts as a filter that suppresses most sensory impression so they don’t all become conscious in the cortex. Smells are the only sense impression that do not pass the thalamus, but go directly to the brain.

***I have a compass that orientates me in the world.***

6. The sense of taste.

Unlike the sense of smell, we can decide not to taste. We can keep our mouth firmly shut or we can decide to open it wide to take the food into our mouth. In order to taste, we have to allow something into our mouth, into what is already an inner space. Once we have said ‘yes’ to the food and have actively made the effort of meeting it, (and we didn’t spit it back out) it has to dissolve, have an interaction with the saliva in our mouth, before the sense organs in the mouth can taste. We are much more actively involved and aware when tasting.

The organ for taste are the taste buds on the tongue and palate, and are much more numerous in infants than in adults. The little child, which is ‘all sense organ’ perceives everything very intensely, and the strong sense of taste is a first level of ‘self-defence’ in a totally new and foreign environment: what to let in and what not.

We have different receptors for the different tastes, sweet on the tip of the tongue, sour and salty on the sides and bitter at the back of the tongue. These inputs go via three different nerves to the cortex, where we become conscious of the tastes.

Tasting food is also the start of the whole digestive process. What the taste buds detect, starches or protein… will already prepare the digestive juices further along the digestive tract so that everything is ready for when the food comes down. In this context, artificial foods may for example taste sweet, but when there are no actual sugars to digest, the whole digestive system is ‘confused’ about what it meets. Tasting is a form of ‘educating’ the digestive system.

With the sense of taste we are able to learn about the inner aspects of food, of substances and about the world. We speak of someone ‘having good taste’ also in relation to art, fashion, music for example.

***I can enter into the world and can find its inner quality.***

7. The sense of vision.

When we see an apple we can only see its surface and see if it is shiny, wrinkled, what colour it has and so on. Through the quality of that surface we learn about the inner qualities of that apple.

The organ for the sense of vision is the eye. In embryological development the eye starts at the central nervous system from where an optic vesicle grows and extends towards the skin. Its elongated stalk grows into the optic nerve. The optic vesicle becomes the optic cup which will become the eye ball, and at the same time the part of the skin where this cup extends to, will develop into the lens through which the light can come in. The skin creates a hole in the protective boundary through which the nerves reach out into the world. When the old Greeks said that the eye is like an arm stretching out and ‘taking hold of the world’, they were not totally wrong, in that it is the nervous system reaching out to the boundary to create the receptacle for the visual sense impressions.

Our eyes are extremely complicated organs that we haven’t fully understood yet. They have one of the most active metabolic systems in our body, regenerating the sensory cells all the time. They also have muscles attached to allow for the movements in the different directions of space and allow for the two eyes to work together and so give us depth perception.

The sense impressions that are made on the retina in the back of each eye is an upside down and left to right inverted picture of what we are looking at. These inverted pictures are sent to the brain via the optic nerves, which cross each other in the optic chiasm. From here what I see on the left side with both eyes goes to the right hemisphere of the brain, the right half of each eye’s visual field goes to the left hemisphere. Once this information reaches the left and right cortex at the back of the head, it is further dissected and sent to different areas: the perception of colour, shape, spatiality and movements are all processed in different parts of the brain. The visual memory in yet another one, and we use still other parts of the brain when we are reading etc.

Visual sense impressions are totally broken down in all their different aspects and nowhere in the brain are they put together again to restore the whole picture. When we look at the apple, one part of our brain registers ‘red’ another ‘round’, the golden spot on the left is only registered in our right brain. The picture of the apple is in a way totally deconstructed and yet we make an inner picture of the apple we have in front of us. This inner creation of the image of what we are looking at is something that we need to do with our thinking capacity. This re-creation of the whole is what we call ‘concept-formation’. The objective apple has become a subjective image of the apple through my consciousness.

Taking hold of the world through our sense of vision requires another level of awareness than what we have met so far. Whereas the body-senses are mostly unconscious, with the sense of smell, taste and vision we are each time a bit more actively involved in processing the information given through the sense organs.

***The world is expressing its inner reality on its surfaces and I can explore all those qualities.***

8. The sense of warmth.

With the sense of warmth we learn about the temperature of the world around us, in comparison with our own body temperature. We need to try and keep our core temperature a constant, around 37°C. With the sense of warmth we are always comparing, something is warmer or colder than me. We are also always trying to keep a fine balance.

Little children will react to changes in temperature by sweating or shivering, but it takes a long time for them to be able to become aware of that and regulate their behaviour accordingly. It is the adult’s responsibility to make sure the child is appropriately dressed, the house is warm etc.

The organ for the sense of warmth are the thermoreceptors and the very fine blood vessels lying close to the surface of the skin. The thermoreceptors, which are free nerve endings, give the information of any changes in temperature in the periphery, to the hypothalamus. The hypothalamus can also measure blood temperature, and trigger the blood vessels in the skin to contract or dilute.

*When I touch something cold, my own warmth will move to the cold object, air or water, the blood vessels will then contract, in order to preserve my core body temperature. If I meet something warmer than me, warmth will move into my body, and my blood vessels will dilute, I will sweat to help cool my body down again and so avoid overheating.*

If the core temperature of the body drops below the ideal, that contraction will keep going all the way to the life processes. They will slow down, and eventually come to a near standstill in hypothermia. With a fever, the life processes become overly active. Both situations can lead to a loss of consciousness and eventually life.

To be present, awake and open to relate to the world, the sense of warmth needs to work well and keep the body at an optimum temperature. In this way, warmth is the first sense that needs to be working well, the one that we need to look after the most, so that all other senses can function optimally.

With our eyes we can only reach the surfaces of objects and read their qualities. The temperature of an object goes deeper than its surface. Our sense of warmth tells us something about the inside as well as the outside of an object.

If something ‘leaves us cold’ we have lost interest and we will not be inclined to engage, but when we are ‘burning with enthusiasm’, we will be hard to stop in our actions. A healthy sense of warmth will also show in a healthy ability to be engaged and active in the world. If we want children/adults to learn and engage in the classroom, in the home, or in a therapeutic setting, it is not only important that we make the room warm, so that no energy needs to be wasted on keeping the body temperature in balance, but also engage with enthusiasm, love, and show real interest. Our own true interest and engagement with the child, invites their enthusiasm to come forth and so be open to the learning.

***Warmth invites me to step out into the world with enthusiasm.***

In conclusion we can see that the 4 world senses give us information about the physical world in an ever increasing conscious way. We are more and more actively involved in our relationship to that world as we learn about the qualities of what we smell, taste, see and feel the temperature of. In this way we make an emotional relationship and engagement with the world. We can do this well and without fear if the 4 body senses (as discussed above) have built a strong foundation and solid reference points to start from.

**The 4 social senses:**

9. The sense of hearing.

In contrast with the eye, the organ for the sense of hearing, the ear, develops from the skin inward during embryology. A part of what will later become skin, grows inward and forms the spaces of the middle and inner ear and the cochlea within that. In the middle ear we also have three little bones, the hammer, anvil and staples, and they start their development at the bone that will become the lower jaw. During embryology little parts will break away from the jaw and grow also inwards until they are in the middle ear. The whole inner ear withdraws into the hardest bone of our body, the temporal bone, which becomes hollow and ‘dead’: the bone marrow, which is most life giving in us, disappears from this bone.

If the gesture of seeing is one of reaching out and taking hold of the world, the gesture of hearing is the opposite, of going inward and becoming so still that we are able to ‘be moved’.

The organ of hearing is the ear with its three parts: the outer ear and ear drum through which the sound waves can enter the ear, the middle ear with the three little bones and two tiny muscles, and the inner ear with the cochlea. The outer ear and middle ear are filled with air, with the middle ear connected to the nose and mouth via the Eustachian tube. The inner ear is filled with fluid.

An object sounds when it is moved, we can ring a bell, strike the string of an instrument, the wind can move the wind chime, or air can be pressed through vocal cords for example. We always need movement to bring forth the vibrations in the air that will transport the sound of that object to our ear. In this way sound is no longer attached to a physical object, but is only there when it is freed from it through movement. Soft materials sound very different to hard materials. The purer the physical aspect of an object, the clearer the sound. How something sounds tells us something about the inner aspects of the physical world.

This vibration then hits the ear drum and sets the little bones in there in motion. These three little bones not only act as conductors for the sound waves, but also to temper the sound when it is too strong. The sound then reaches the oval window, the border between the middle and the inner ear. Then it is transported through the liquid into the cochlea. This spiral form has little hair cells in it that are moved by the sound waves. The ones closest to the entrance register the high frequencies, the ones towards the centre of the spiral register the low frequencies. These little hair cells are connected with the auditory nerve that transport the signals to the brain. First to the gyri of Heschl, and then on to the higher secondary and tertiary centres.

Again we see that a sensory impulse is broken down, this time in the different frequencies that all together make up a tone. According to latest research, different frequencies travel at different speeds to the brain. In this way the ear transforms the spatial information of the sound waves into a pattern in time.

The ear itself can only register the frequency, the length and volume of a sound. The meaning of what we hear is not something the ear can give us. Again our consciousness is involved in reconstructing all the broken down parts of the sound so we can hear it as a whole.

The cochlea and the organ for our sense of balance sit together in the inner ear. They are filled with the same fluid and have a connection to the brain via the same nerve. Is there a similarity in what they bring? For both senses, coming to stillness is paramount to them working well.

*To orientate myself in space, I need to have a still centre of balance. To hear sounds that are coming to me, I need to be still.*

Our two ears are sitting symmetrically in a left/right orientation on our head. If we can hold our head in the still upright position through our sense of balance, the two ears can work together in that symmetry and give us a truer representation of the surrounding sounds. So a good sense of balance is the basis for a good sense of hearing.

Hearing, unlike the four senses of smell, taste, vision and warmth, is the first sense that takes us away from the physical aspects of the world. In other words, with the sense of hearing we begin to understand the world from the vibrations coming to us in the form of sound.

***The sounding world is free from the substance, it can enter me and move me.***

10. The sense of word or language.

After our hearing has given us, as accurate as possible, the frequencies, the volumes and lengths of the tones, we now need to come to the understanding of what it is that we are hearing.

The first step towards this understanding, is the ability to distinguish the forms of language. The word ‘language’ is used here in its broadest possible sense.

Imagine listening to an orchestra when they are all tuning their instruments. The sounds are all reaching our ears, and at first it sounds like one big cacophony. Then imagine you can distinguish the violins and the flutes… To recognise this difference is our sense of word at work. The same tone, at the same volume and length played, will give a different experience if it is played on the violin, the double bass or the piccolo, and again very different when sung by a human voice. Composers use these differences when they decide which instruments to use in their music. Our sense of language helps us to recognise these differences.

Imagine walking in the mall, and hearing all the sounds around you. Your ears are picking up all the different tones, the volumes and pitches. Then imagine that you are able to distinguish within that whole overwhelming sound environment, one single human voice. This recognition is the sense of language or word.

For example the sense of language also enables us to distinguish between consonants and vowels, or the child in a busy classroom environment can, in all the sounds, distinguish the teacher’s voice, a pencil dropping or his neighbour laughing. In other words, it is not our sense of hearing, but our sense of word/language that gives another dimension to the sounds our ears can register and our brain can become conscious off. It enables us to not only hear a collection of different notes, but actually hear a piece of music as a whole for example.

To do that, we need to move from one sound to the next: we hear a note, and then another one, and again etc… in between all these notes are smaller or larger gaps of silence, intervals. Inwardly though we move from that first note, to the next, to the next… and with all the variations possible in pitch, speed, length and volume of the notes, slowly or quickly following each other, we move from one sound to the next and so hear the whole. We hear music. Music is more than just the collection of tones, it is also the silences in between through which we move and connect the tones.

To hear a word, and not just a collection of sounds that the different letters make, I need to make wholes out of a whole lot of letters. My ear registers a ‘c’, an ‘a’ and ‘t’ and it is my sense of word that recognises these different sounds through inwardly moving with them. Try moving an ‘a’, or an ‘o’, or an ‘s’ for example. This is the same when we read or see sign language… we need to move the form to know the symbols, its sound and its quality.

With the sense of hearing we need a good sense of balance, with the sense of word or language we need a good sense of movement. This needs to become still in our body, no longer sensing the movements of my own body, but orientate outwards towards what is coming to me, move the tones of what is said, played in music, sounds in nature, or the teacher giving an instruction, the letters on a page…

***The world of sounds is rich in variations, I move them and they speak to me.***

11. The sense of thought or meaning.

The sense of thought or meaning is not the same as the ability to think. From birth the child is surrounded by a very rich environment full of sounds. Already around 1.5 years the child can understand the meaning of what we say and our gestures, which is well before he starts to think his own thoughts.

Already in its first one and a half years the child has mastered walking, which means a basic sense of balance and movement have developed. These senses already form the bases to the senses of hearing and word. To develop the ability to think, the child will first need to learn to speak, name things and make basic sentences, so that concepts can be formed inwardly and ideas can find expressions. This happens around 3 years of age with all the questions of why, who, what, that show the child is starting to think his own thoughts.

*To have a good sense of meaning, to sense the meaning of what you say to me, I need to have correct perceptions of form, word and the world.*

If we misperceive, like not hearing correctly when there is a lot of background noise, or in the dark not seeing what is really there, for example, then our imagination takes over and we attach meaning to what we think our senses perceived. With correct perceptions we build up our own concepts and they are our basis for understanding the concepts we are sharing with each other.

It is important that the child grows up in a rich environment full of meaningful sounds, words, pictures, gestures, ‘languages’ of all kinds. This will enrich the capacity to think later on in life when they can recognise lots of different concepts.

The sense of word gave us the ability to understand the differences between the letters ‘c’, ‘a’, ‘t’ for example. These different sounds come together and make a word that expresses a concept i.e. ‘cat’, a word attached to a whole reality of pictures, sounds, a living animal, specific movements…

We all have our individual inner pictures that go with a concept, depending on our individual perceptions we have had in our life. The concept that lies behind all our individual pictures though, is the same. It is universal. The concept ‘cat’ doesn’t change if I say it in English, French, Chinese, in pictures, dance movements, music…

The child begins to form concepts at the time it is learning to speak and to name things. Through the spoken language, the imprinting of the concepts we form becomes part of who we are, our memories. The language we speak, the concepts and memories we have formed, all experiences we have, are formative, down into the physical and physiological level of who we are. This becomes very apparent when things are not going well, when we have a traumatic experience or suffer an overload of sense impressions we cannot digest. Then we see the life sense and its organ, the automatic nervous system, reacting to these imprints and going into survival mode. The cortisol and adrenaline that are repeatedly going through our body in stressful situations and so affecting the physiological processes, will eventually also affect our organs, on a cellular level.

When we are stressed, emotionally or through an experience, movement, going for a walk, massage for example, often help with releasing the tensions in our body. In the same way, positive experiences and enriching concepts, opening up our world of understanding, also have an effect on a physiological level, but are health giving.

The concepts we have met and made in our life and which help to build up our inner self, our sense of life or wellbeing, are our reference field from which we meet new concepts. To listen, to understand what other people are saying, we need to hold our own concepts still and inwardly speak their words with them. This is also true when we read, when we look at art, listen to music etc*.*

*My own concepts, ideas need to be still and I inwardly ‘speak’ with what is coming towards me to understand its meaning.* *When I am angry, I can decide not to inwardly speak with you, and then you might as well not say anything, because I won’t ‘hear’. If I don’t quieten my own thoughts, I will also not understand what you are trying to tell me, I won’t come to the meaning of your thoughts but stay in my own concepts.*

***My self becomes quiet so I can resonate with you, allowing what you bring, to in-form me.***

12. The sense of Ego or Self.

The sense of ego, or ‘I’, is not the sense of my own ego, but of that of the other person.

We have momentary experiences where we either feel someone has totally ‘seen’ us for who we are, we feel our true Self has been met, or we feel we have met the other’s true Self. A look in the eye, at the right time, may be all it takes, but moments like this are very powerful and can be life changing.

So far we have come to really understand the thoughts the other is expressing to us, either in words, pictures, art, music etc… by re-directing the senses that let us experience our own body, towards that what is ‘spoken’ in the world around me.

‘I’ am more than the collection of my thoughts though. The concepts that I have so far, I have learned through the experiences life has given me, and they will change as life goes on. Behind that there is a constant thread, s/he who has all these experiences, goes through them all and grows through them, and that is my ‘Self’, that what only I can call ‘I’.

For this to be seen by someone else requires an enormous amount of trust. I need to feel very safe to allow someone to sense my ‘I’, and likewise, the other needs to feel fully trusted to allow me to sense their ‘I’. This sense of safety start to be built up in the very early years of our lives. If we then had a very trusting environment in which to explore our Selves and the world, we can learn to trust to be seen. This feeling of safety goes back to the very first sense we described: the sense of touch. A healthy sense of touch, which gives me a healthy sense of boundary and inner knowing of what is me and what not, gives me a secure sense of self.

The sense of Ego also requires a separation between me and the other. At first the baby is very much at one with the environment and only slowly does distance between him and his surroundings grow. The first smile is a first sign that there is a recognition of the other. This separation is needed to recognise the other as different from me, no longer an extension of me, as my mother was in my first years of life.

It is only when this secure sense of Self is strong enough that I can ‘quieten my own self’ so that I can meet the other, the other’s true Ego, without fear of losing myself in that encounter. If my house is strong and secure, I can leave it for a moment to go out and meet someone else, knowing that it will be there when I come back home. If my house is not a safe and secure place, the 4 body senses don’t give a feeling of strong foundations, then leaving that behind to meet the other can cause strong anxiety. It is then very hard to truly meet the other’s Ego or Self. It is then also very hard to allow the other to see my own Ego and I build up strong defence mechanisms.

To be in the world, to learn, to be social, to grow as a human being, we need to know we can trust, so that having all these experiences through our senses are enriching, exciting and not a cause of anxiety or doubt. Trusting relationships is where we can build up Self-esteem so we can tackle all the challenges life throws at us.

I can be that person where you can feel safe to be truly met, and you can be that person for me. To do that, we need to be aware of what it is that gives us the ground to stand on to do that safely.

A healthy sense of Ego also allows us to see and recognise the idea that is expressed in an art work, a piece of music or in literature. When we listen to Vivaldi’s Four Seasons, we can close our eyes and be transported to the realities of spring or winter. The same is true for painting, sculpture, a good book etc. As we can sense the ‘essence’ of the other, so can we sense the essence in an art work, using our sense of Ego.

***You and I can meet and in that trusting relationship I can know You and You can know Me.***

In conclusion we can see that, whereas the first 4 senses give us information about our own bodies, the second 4 about the world around us through its physical appearance, these last 4 senses tell us about that which is no longer attached to the physical.

To fully develop in a healthy way these 4 social senses we need to transform the 4 body-senses, through quietening them, and turning them towards the other. Each of the 4 body senses supports one of the 4 social senses, which is why it is important that we learn to distinguish between them.

To have a healthy relationship to our own body, the world around us and to other people in our world, it is very important that we look after these 12 senses. For it is through these 12 doorways that we are able to make sense of ourselves and the world.

**Sensory Stimulation and Sensory Integration:**

We can look at each of these senses again with the question: “What” do I touch? What do I let my child touch? Does it make a difference if the materials are natural of synthetic? What do I eat and feed my child? What movements do we do? Do we come to stillness? What do we smell, taste, see, feel and listen to? And so on.

What level of awareness and consciousness do we bring to all these experiences, so that we are building strong and solid foundations for our Self-esteem and also for our ability to meet the other in a respectful and true way?

As we have seen, the 4 body senses form the foundation for correct sense perceptions of the world around us, and need to be healthy to transform into the 4 social senses.

We live in a world that is very good at sensory stimulation, with most of us in sensory overload a lot of the time. That we also need to integrate what the senses take in, is often forgotten or neglected.

To understand sensory integration better I would like to make the comparison with our digestive system.

When we eat, our digestive system is working hard to dissolve, grind and dis-integrate the food we have taken in, into the smallest particles. These are allowed through the lining of the intestines into the bloodstream and from there taken to the different areas of the body where they are needed. All this happens after we have swallowed the food and even though we are totally unaware to what is going on at this stage of the digestion, very important work is happening.

Imagine for a moment that we would eat continually, going from meal to meal. We would soon feel very unwell, and our digestive system will react to this overload by storing a lot of the substances as unwanted fat, blood sugars will rise and other body functions will be compromised. Therefore it is very important that we have rest times where we are not eating, only digesting.

**Sensory stimulation** is taking the impressions in, in the same way we are taking food in while eating. **Sensory integration** is like the resting time in between the meals where we are digesting.

Instead of the digestive system it is now the brain that needs to do the ‘digesting’. If the brain gets too many impressions coming in, it will also go into survival mode through partly shutting down. The first parts to shut down are the higher functions of the frontal cortex, where we make judgements. Slowly other functions shut down until we have the automatic nervous system taking control in the fight or flight and withdrawal reflexes.

Like our digestive system can only take on so much food at any one time to manage a healthy digestion, so our brain has a limited source of energy to process the sensory impressions we take in before it needs a rest. Most of the important work in both food and sensory integration happens where we are unaware of it.

This comparison between digestion of food and sense impressions is also real on a physical level. If the digestion of food is incomplete, larger particles are let through the lining into the blood or there are allergic reactions to food. All this will have an effect on what the bloodstream is carrying to the rest of our body, including to our brain. Therefore a healthy gut is vital for a healthy brain and for healthy sensory integration.

Sensory integration happens in the rest time we have after a busy day at school or work, instead of rushing off to another activity every day. It is the breaks the teacher gives the children after a block of high concentration, it is the sleeping we do at night, the walks in nature, the daydreaming, the drawing, the free playing the child does.

Here I would like to give free play some extra attention. Although children are ‘busy’ in their play, it is often through their play where they ‘digest’ experiences they have had, by repeating them, replaying them over and over again until they ‘make sense’ and are ‘digested’. In a similar way adults often need to talk about experiences to make sense of what happened, or express them in an artistic way. Children need time for free play.

Free play also is about going back to the 4 basic body senses and strengthening those and by so doing, calming their system of the overload that the world might have given them.

**Conclusion:**

By looking with a bit more awareness and peeling back subtle differences in our sensory impressions, we come to 12 senses through which we meet the world. And these 12 we can divide into 3 groups of 4. Sometimes they are called the 4 lower, 4 middle and 4 higher senses. This might give the impression that the ‘lower’ ones are less important and we need to strive to get to the higher ones. I have tried to describe them so that we can understand that the 4 senses that tell us about our body, are the most important ones to nurture because they form the foundation for all other senses to develop on.

**Warmth and Rhythm** would be the key aspects to hold in our mind when we ask ourselves how we can best look after our sense organs. Warmth not only physically, but in real interest and enthusiasm, real wonder for ourselves, the world and the other. Rhythm so that each experience has the time to become part of who we are, and so give us a stronger reference field to keep growing and giving to the world.

Understanding the importance of the 4 body senses for the understanding of language and meaning, helps us to understand why there is a strong emphasis on movement and balance in the Extra Lesson Programme to help children and youngsters with learning and/or social difficulties. We are strengthening the sense of self and the foundations on which the academic and social skills are built, so that these senses can transform into the ones to recognise letters, numbers, meaning and respect for the other people around us.

This helps us also to understand to look outside of the box when we are meeting children with learning or behavioural difficulties. Maybe doing more reading, writing and maths isn’t making a big difference, or endlessly repeating to behave better is also not getting through? Could it be that we need to look somewhere else when we are looking for the underlying reasons for these difficulties? Is the child well, touch sensitive, how does he move, can he be still? These are all important questions to help us understand why he might be struggling to learn and to be.

Lut Hermans

June 2015

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