

FOCUSING IN AN AGE OF NEUROSCIENCE

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Our experience tells us that our heads are full of thoughts and our bodies are full of feelings. So we long to ‘re-connect with the body’ and be our true selves again. The English writer D. H. Lawrence expressed this eloquently a century ago:

“My belief is in the blood and flesh as being wiser than the intellect. The body unconscious is where life bubbles up in us. It is how we know that we are alive, alive to the depths of our souls and in touch with the vivid reaches of the cosmos.”

I imagine most Focusers would resonate with this sentiment, but if we look into the neurobiology of ‘going inside’ and ‘listening to the wisdom of the body’, the picture looks rather different. Some very interesting things happen in the brain, in fact most of Focusing happens in the brain, only we need to direct our attention to the body for it to happen.

This paper summarises some of what may be happening in the brain during Focusing and describes the nature of mind-body interaction from a scientific perspective. I shall indent and italicize the scientific information, put the technical terms in bold italics, and discuss its application to felt experience in Focusing and in life in the main text.

Brains are body-oriented

The neuroscientist who has most risked his professional neck by delving into the body and feelings is Antonio Damasio. He describes the brain as ‘body-oriented’, the body serving as a ‘ground reference’ for the brain. There can be no brain without a body to inhabit, and no body could survive without a brain to help regulate it. The whole body is one organism that includes the functions of the brain, and these include taking account of what’s happening in the body, including the part of it that is itself. The brain must see that the body survives, so it determines much of what happens there and, even when it doesn’t determine what happens in the body, it monitors what’s happening. The brain’s capacity to act independently of the body is limited, and it works better when it listens to the emotional currents of the body. Reason without emotion becomes irrational, and the body’s signals to the brain are needed for rational thought and decision-making.

The difference between the scientific picture and our subjective picture of experiencing lies in the fact that most of what happens in the brain stays below the surface of consciousness. We are aware of our thinking, but generally not of the processes that lead to our feelings. We simply notice the physiological changes that feelings bring in the body, if indeed we pay attention to them. So it seems to us that feelings and felt senses begin in the body, and maybe that intuitions arise there too. Usually they don’t, they begin in the brain, as will become clear.

I am a nervous system

*The brain is part of the **central nervous system** which includes the spinal cord that descends from the **brainstem**. So when we talk about the brain, we are actually well down into the body, it’s just that nature has tucked most of it away within the skull, close to the major sense organs and well away from all the stuff sloshing around in the body. The central nervous system connects with the **peripheral nervous system** along the brainstem and spinal cord, and this ‘system’, with all its nerves, radiates to every corner of the body, including every single blood vessel. The brain in the head is needed for most things that happen in the body, but not all – for example, reflexes like withdrawing your hand from a flame require only a pain signal from the skin to your spinal cord and a movement signal back to the muscles. The aspect of the central and peripheral nervous systems that you cannot directly control is the **autonomic nervous system**. It looks after sleeping, waking, arousal, heartbeat, breathing, digestion and much more. All these nervous systems – no wonder we get anxious!*

*The central nervous system in humans has the distinction of being the most complex thing yet found in the universe. Comprising a hundred billion **neurons** – brain cells – and a thousand trillion **synapses** that ‘fire’ so neurons can talk to each other, it has over a thousand identifiable areas, all massively interconnected. The brain is flesh that likes to network.*

One thing about the brain that everyone knows is that there are two cerebral hemispheres, left and right. While much pop psychology derived from this anatomical fact belongs on the rubbish heap – such as describing people as left brained or right brained – a mounting body of scientific evidence now points to the significance of the hemispheric division and its relevance to practices like Focusing.

The cerebral hemispheres: two minds humming in parallel

The anatomical separation of the two hemispheres means that we have two minds working in parallel all the time. Evolution has kept them apart, perhaps so each could develop in its own specialised way. Both hemispheres are always engaged, and both take part in most mental processes. They co-operate so exquisitely that we generally feel comfortable that we are of one mind.

At times of emotional stress, however, we may feel less comfortable – “I’m in two minds about this” or “I wish I could stop feeling like this”, for example. Such inner conflicts may reflect the different roles the two hemispheres play. While the right hemisphere gives us our sense of the body as a living experience of connectedness with ourselves and others, the left hemisphere stands back in a virtual world of representations it can analyse and manipulate. The right hemisphere deals with what is implicit, the left with what is explicit. The activity of the right hemisphere is less conscious, that of the left more conscious. The right hemisphere is needed for doing new and unfamiliar things, the left for doing what is known and routine.

A book published in 2010, *The Master and His Emissary* by Iain McGilchrist, a Scottish psychiatrist and academic, summarises a mass of research evidence about the differences between the two hemispheres, linking this with philosophy and culture. His thesis is that the right hemisphere is the ‘master’ whose ‘emissary’, the left hemisphere, has wandered off so far on its own track that it has forgotten who the master is, thereby betraying him. I shall refer often to McGilchrist’s ideas here. Whilst he avoids the subject of psychological and spiritual practices that might return the emissary to his master, it seems to me that Focusing is an excellent practice for doing so. And I think the subjective experience of Focusing can help us in understanding the complex issues his work raises.

Let’s work our way through what we do in Focusing. Science cannot tell us everything about our felt experiencing, and it probably never will. But it has come far enough in recent years to offer a fresh understanding of our inner processes of feeling, thinking and Focusing.

TURNING ATTENTION TO THE BODY

Focusing begins with re-directing our attention into the body. The decision to do this, and the whole thing of attention, happen in the brain. So Focusing starts in the brain. And, while it is obviously a highly evolved way to engage the human mind, it requires some evolutionarily old areas of the brain to fire up.

Vertical neural architecture: cortex and subcortex

The human brain is the outcome of a long evolutionary process reflected in the anatomical layers that have grown one on top of the other. The lower layers appeared first in evolution, the higher layers more recently. But the lower layers never stopped evolving and now participate in activities that did not exist when their structure first formed.

*Start by picturing just two layers. The familiar wrinkly stuff of brain images is the top layer, the **cortex** – Latin for covering. The bottom layer is everything underneath the cortex, the **subcortex**.*

The bottom of this bottom layer is the **brainstem** which becomes the spinal cord extending down into the body. It regulates the body (heartbeat, breathing, sleeping, waking etc.), the autonomic things outside awareness. So-called 'brain-dead' patients have their brainstems keeping their body going even though the rest of the brain – the person – has stopped.

Above the brainstem are areas known collectively as the **limbic system** that are involved in emotion. These include the well-known **amygdala** that generates stress and anxiety, and the **hippocampus** that is involved in narrative memory. Above the limbic areas is the cortex. Directly above is the **paleocortex** – paleo for old – that includes two areas important for this discussion, the **insula** and the **cingulate**. And above that the **neocortex** – neo for new – arranged in four **lobes: occipital** at the back for vision, **temporal** at the side for hearing and speech, **parietal** above the temporal for mapping the body, and the **frontal** lobes that enable all the really clever things that humans do – poetry, philosophy, Focusing, for example.

Or alternatively, you could picture the brain's structure in three layers, the so-called 'triune' brain, by dividing the subcortex into the 'reptilian' brain of the brainstem and the 'mammalian' brain of the limbic system. The human brain is the cortex above. This schema is useful in learning neural architecture, but scientifically inaccurate, as reptiles have some limbic areas, and dogs and cats have some cortex – though less than we do.

The decision to direct attention to the body begins in the frontal lobes, but doing so fires up the insula, involved in monitoring the body, and the cingulate, involved in emotional attention, in the paleocortex. It also requires the brainstem, as connections to and from the body pass through it, and it generates the 'here and now' aspect of consciousness. So there is a paradox: a brain that wants to develop consciousness with cutting edge practices like Focusing has to enlist the help of evolutionarily older areas rooted in emotion and the body.

Turning attention to the body also requires the left hemisphere to leave its virtual world to give precedence to the connectedness of the right hemisphere.

Horizontal neural architecture: left and right hemispheres

Everything above the brainstem is divided between right and left hemispheres. The amygdala, for example, is really the amygdalae – one on the right and one on the left. The two sides are linked. Cortical areas are joined by the **corpus callosum**, which connects just 2% of neurons on either side, illustrating the degree of separation. It enables each side to know what the other is doing, but it also enables one side to inhibit the other.

The hemispheres are asymmetric in various ways. The left is better at inhibiting the right than vice versa – hence, perhaps, the ease with which we can suppress feelings. The right has more connections between the different areas within it, enabling integration of their functions, while the left has more connections within each area, enabling specialisation of each function. And the right hemisphere is more connected to the subcortical areas below, and therefore to the body, than is the left. So the left hemisphere says "I have a body", while the right says "I am my body".

Most forms of attention are handled by the right hemisphere, but focused attention is the preserve of the left. McGilchrist argues that the primary difference between the two hemispheres is that the left does focused attention on one thing, while the right does global attention to the body and the environment. He gives the example of a bird pecking at grain it wants to eat: its left hemisphere focuses on the grain while the right keeps a look out for predators and danger. These are very different attentional tasks, making the specialisation of the two hemispheres an evolutionary advantage.

The majority of people, including many left-handed people, follow this left-right pattern, but not everyone does. Some people have their hemispheres reversed, and others do not follow a clear pattern of hemispheric specialisation at all. Nature creates exceptions to every rule.

In Focusing, we use the right hemisphere's body connectedness, and it seems that we use both hemispheres' attentional styles – global attention for whatever inside wants attention, focused attention for holding it in mind. Focusing is an integrative practice, one that returns the emissary to a proper relationship with the master.

Damasio says the mind usually “draws a veil” over the inner workings of the body so that we can attend to the world around us. Focusing pierces that veil. It can seem an odd thing to do if you are not used to doing it.

SENSING INTO THE BODY

There are two common ways to begin Focusing. One is to sense within the body and see what ‘wants’ our attention. We become aware of feelings and sensations that perhaps we had not noticed before – although our brain might have noticed them without passing the message on to our conscious awareness. This part of Focusing very much happens in the body – our physiological reality, a tightness here, or heaviness there, or a sense of wanting to cry.

But to notice bodily feelings and sensations consciously, we are back in the frontal lobes. And because the right hemisphere is specialised for everything to do with body and feeling, the firing patterns in the brain may be different from, for example, when we are writing emails or discussing politics with a friend, which require more from the left hemisphere. If you put your head in a brain scanner while you focused, the resulting neural imaging might illustrate this. The frontal lobes have switched to watching processes arising in the right hemisphere, including its mapping of the inside of the body. There's a lot going on inside to sense into.

Physiological change in the viscera and internal milieu

Muscles contract (tense) and let go (relax). They are not only to be found in our arms and legs, but also within the torso; for example, the major muscle of emotional control is the diaphragm that allows us to hold our breath. The rate of breathing and its depth changes. Heartbeat speeds up and slows down, and blood vessels constrict and dilate to alter the pressure of the blood being pumped around in different areas of the body. Digestion in the intestines stops and starts.

*The term **viscera** refers to the major organs – heart, lungs, gut, liver, pancreas – and other aspects of bodily life such as the mouth, tongue, throat, endocrine glands, skin and blood. So when we talk of ‘visceral’ feelings, many things about the body are implied. The brain also senses the **internal milieu**, meaning the liquid that all body cells inhabit.*

The second way to start Focusing is to have a topic, and to allow a felt sense to form in the body for ‘the whole thing about it’. Here, we start in the brain by thinking about and imaging the topic, maybe saying something about it, and then look to the body. The brain will have changed something there by cogitating on the topic.

How the brain changes the body

Most emotional changes in the body, and most bodily movements, are triggered in the brain. It is here that changes in the environment are perceived and appraised for their significance, especially changes perceived by the global attention of the right hemisphere. It may not seem like this to us, because the appraising and triggering happen out of awareness, or before we become aware. Many aspects of bodily life are regulated by the autonomic nervous system outside our direct control, such as going to sleep and becoming sexually aroused – though we can have an indirect influence on them.

So it is the brain that changes heartbeat and blood pressure, breathing, the intestines tensing or relaxing. The brain triggers these changes via the electrical route of nerve pathways, and the chemical route of releasing hormones into the bloodstream, known as the endocrine system. At the same time, the brain changes itself, creating altered cognitive states and abilities to recall things, even altering the maps it makes of the body before the body alters them. It was once

*thought that the glands in the body did their own thing, but it is now understood that the brain is the master gland. The **hypothalamus** in the limbic system secretes an array of hormones that tell the pituitary gland (in the brain) to tell the glands in the body to release hormones - such as the adrenal glands that release cortisol when we get stressed.*

All this doesn't mean that the brain is a command centre controlling every little thing. Rather, it sends out general signals about the need for change, and then what actually transpires is largely determined by the body.

So my brain is changing my body, I am not changing it. I do not have as much power to change my body as I might wish. My frontal cortex, where my conscious awareness of myself resides, struggles to replace my bad feelings with good ones, because it is my subcortex that is triggering those feelings.

How the body changes the brain

While the brain triggers changes in the body, how those changes unfold in practice is determined by the body. The duration and intensity of an emotional state is largely determined by the body. And the body then signals what happens in it back to the brain - via the neural route of the peripheral nervous system, and the chemical route of the hormones and peptides that are released into the bloodstream and that find their way into the brain.

Examples of the body changing the brain... when you have eaten a certain amount, your intestines tell the hypothalamus that they are now full, the hypothalamus passes the message on to the frontal cortex, and you then have the opportunity to decide to stop eating. If you take beta-blockers for anxiety, they act on the heart, slowing it down; the heart tells the brain it's slowed, and the brain concludes that there's less cause to be anxious. And you can deliberately calm your mind via your body: if you slow down and deepen your breathing (breathing is unusual in being both autonomically and consciously controlled), your brain will hear of it from the lungs and change its cognitive state so that you experience your mind as calmer.

*An interesting piece of anatomy: there are more **efferent nerves** leading from the body to the brain than **afferent** ones leading from the brain to the body. In the case of the **vagus nerve** between the brainstem and the intestines that plays a big role in how we feel in our guts, the proportion is 80% efferent and 20% afferent. This is because the changes that the brain signals are general in nature, whilst the changes the body signals are specific and complex.*

So the brain changes the body and the body changes the brain in a complex process of interaction. The brain is kept up to date with bodily life, whether we are aware of it or not.

FINDING A FELT SENSE AND GETTING A HANDLE

What is quite extraordinary is how the brain can receive a mass of signals of a myriad of things changing all over the body and then present something to my conscious awareness that seems like one thing – such as a heaviness in my upper body, or a knottedness in my lower half. An image may form in my mind's eye, as if all the changes to heartbeat, breathing, hormones in the blood, constriction and dilation of blood vessels and so on amounted to this one thing that I can name, communicate and focus on. Amazing!

How the brain maps the body

*The brain 'maps' the changing state of the body in a number of brain areas, starting with the brainstem and moving up into the insula and then the **somatosensory cortex**, an area of the parietal lobes. Each area has a topographically organised map of the body, so specific neurons fire in response to signals from particular parts of the body. Different areas map different things. For example, signals from your hand when someone touches it affectionately go to a different brain area than the signals from the same hand when you pick up an object. The different aspects of body mapping are combined in the frontal cortex which acts as an **association area**. Here*

there is an increasing level of abstraction, so that as you think about what you sense in the body, so you may reduce your attention to the fresh signals coming from the body. Damasio says body mapping is dynamic and normally unconscious.

The skin and limbs are mapped on the contralateral side of the brain so, for example, your left arm is mapped in your right hemisphere. But the inside of the body – the viscera and internal milieu – is mapped only in the right hemisphere, so only this side of the brain has an image of the whole body. This is a living image of our emotional experience, in continual flux. The right hemisphere offers a sense of the body as something we ‘live’, a part of our identity. It is where we meet the world.

The brain’s mapping of the body can lead to some strange phenomena. One is the experience of a ‘phantom’ limb after the real limb has been amputated. Another is that after strokes in the right hemisphere where patients are unable to move their left arm, a minority of them then deny their paralysis. Even more bizarre are the stroke patients who deny that their left arm is theirs – “doctor, this is my mother’s arm”. The same thing does not happen with the right arm after brain damage in the left hemisphere – because only the right hemisphere maps the viscera.

So there is the actual body and the mapped body – and several versions of the latter. It is the mapped body that enables us to experience a *felt sense*, and this all comes together in the frontal cortex.

Interoception

*This refers to the brain’s perception and mapping of what’s happening inside the body, and the insula and cingulate are associated with it. Contrast it with **proprioception**, which is the mapping of the relative position of the limbs (such as knowing that you have your legs crossed when you’re sitting so that when you stand up you first uncross them to avoid falling over), and the **kinaesthetic sense**, which is about the body’s movement in space. So interoception is about what’s happening in the viscera and the internal milieu.*

Interoception and body mapping are the basis of having feelings. Damasio uses ‘emotion’ to refer to what actually happens in the body and ‘feeling’ to refer to the brain’s mapping of those emotions. This seems sensible, for we talk about our feelings without necessarily experiencing the emotion in the body that underlies them at the same time.

Finding a felt sense involves interoception to gauge the inner state of the body. Neuroscientists even talk of it as an unclear sense - we know we are emotional but we struggle to name the emotion. As Focusers know, time and space are sometimes needed to name what is felt. In Wholebody Focusing we use proprioceptive and kinaesthetic senses as well as interoceptive. Perhaps three sorts of sense make the felt sense more accessible than just one, hence its popularity.

Experiencing a felt sense means combining the right hemisphere’s more unconscious processing of feeling and body state with the left hemisphere’s capacity to categorise and name things. Finding a handle is probably the left hemisphere trying to make sense of what’s going on in the right hemisphere. Putting a handle word that doesn’t fit on a felt sense might be a left hemisphere move, whereas allowing a handle word to appear spontaneously might be a right hemisphere one. While language is generally associated with the left hemisphere, the right has some language of its own. When the handle word seems an unusual use of language, the right hemisphere may have spoken.

Do felt senses have to be bodily sensations? Some felt senses come in the head or the limbs, others seem to be throughout the body, and some Focusers report them being outside the body. Gendlin includes physical sensations like a tight chest or a heaviness in the stomach as examples of felt senses, but he also talks of felt senses as fleeting aspects of experience, as if they had no physical substrate. His description of the felt sense being about the whole of a situation reflects the right hemisphere’s wholistic take on what is happening.

Feelings in the head: 'as if' feelings and somatic markers

Damasio says a lot of things about feelings that make sense. Because the brain maps emotional states and enables sufficient abstraction that we can think about our feelings, it can also recall past feelings without necessarily having to generate the corresponding emotional state in the body, there and then, every time. Instead it can refine its cognitive activity to take into account what we have experienced in the past. He calls these 'as if' feelings – as if we were experiencing them now in the body. He also talks about 'somatic markers' – neural patterns left from previous pleasant and unpleasant gut feelings. The brain can refer to 'as if' feelings and somatic markers, all outside of consciousness, and maybe we can too in our conscious reflection.

In practice, most Focusers open themselves to whatever they feel and call it a felt sense. It may be a physical sensation in a specific place, which may relate to specific organs and muscles; it may be a global sense of bodily state, which may relate to the chemistry in the blood; it may be an 'as if' feeling that has yet to change the body in a noticeable way; and it may be something else that comes into awareness and that seems meaningful. Whichever sort of felt sense it is, we engage our right hemisphere and our body sensing areas of the brain, which re-orient our attention. For myself, whether or not I experience a physical sensation, I have my attention in my body. Whatever then comes, whether feelings or thoughts or images or whatever else, I feel sure would not come were my attention not in my body. In fact, I'm not concerned about finding the felt sense in a nameable physical way. With my attention in my body, I'm closer to feelings and my mind gets a fresh perspective. I'm happy with that.

RESONATING AND CHECKING BACK

Words that come in Focusing need checking back with the felt sense. This deliberate process is good for neural integration of left hemisphere language with right hemisphere feeling. Some people tend to do this naturally, responding to the brain's cues that suggest a mismatch between what is said and what is felt. In Focusing we do it deliberately, making the most of the brain's aversion to mismatches.

Resonating is needed more with words than with images, possibly because words are left hemisphere based and therefore prone to depart from their grounding in bodily feeling, whereas images are right hemisphere based and therefore naturally rooted in the body. And some words that come in Focusing seem to need resonating more than others, suggesting that those that don't have arisen directly from the right hemisphere and its links with the body. They come ready-resonated as it were, whereas the left hemisphere's verbal offerings are a step removed from the body.

How do I know what I'm feeling?

My brain knows how I am feeling even if I don't! There is a direct route for this from the limbic areas, that trigger emotion, to the frontal cortex. When the amygdala triggers anxiety, for example, it changes the cognitive state of the frontal cortex so that I think anxious thoughts and I think them quickly. I may or may not notice the change to my thoughts and conclude that I am anxious. What will make it clearer to me is if I notice the change in my body. The indirect route for knowing what I am feeling involves the bodily changes triggered by the amygdala being fed back to the brain via the neural and chemical routes described above. These give the brain a more nuanced and in the moment picture of my emotional state – and me too, if I pay attention to my body.

What an extraordinary achievement the human capacity to describe our feelings to others is! To do it satisfactorily, we must bring together sensing the body, allowing feelings to form in the mind, finding language that fits them, and communicating it all in a way that another person can comprehend – so that their empathy and their hearing of our words match up in their brains.

In Focusing, we go to the trouble of checking each thing back with the body. McGilchrist says that whatever the left hemisphere has considered in detail needs to be returned to the right

hemisphere for integration, because only the right can synthesise what both hemispheres know into a useable whole. If we accept the verbal and conceptual contributions of the left hemisphere without integrating them into the bodily and relational world of the right, we risk becoming detached from ourselves and others. So part of the value of Focusing is its insistence that we allow time and space for integration and synthesis into new wholes.

ALLOWING WHATEVER WANTS TO COME, TO COME

‘See what wants to come’, we like to say in Focusing, encouraging the mind to be open within. Our driven Western minds can find this tricky – they’ve been educated to favour the purposeful cogitations of the left hemisphere. For fresh mental content to arise spontaneously, we have to be a little relaxed, and tuned into feeling and body.

Fresh experience arises in the right hemisphere

McGilchrist again. He says the left hemisphere deals with its own virtual world of representations of things, which it juggles, refines and puts in order. But for something new to enter our mental world, the right hemisphere, with its connectedness to body, others and environment, is needed. All the fresh and new stuff of our minds arises on this side of the brain. The problem for us is that the left hemisphere cannot know what the right hemisphere knows, and it functions more efficiently if it doesn't have to deal with the right hemisphere's conflicting version of the world, so it tends to blot it out. But if it doesn't let the right hemisphere in again soon enough, it will find itself going round in circles that are stale and dull.

For example, I am clearly leaning a lot on my left hemisphere in writing this article, as I have to order my thoughts, try to string them together in a coherent way, and polish up my words and sentences. But when I stop and do something else, sometimes a fresh idea for the article comes spontaneously, and I grab a notebook to write it down before it's lost. This is a right hemisphere contribution. Then I have to find a way to fit it into the left hemisphere's world of representations, so that I can make use of it – not always an easy task.

FELT SHIFTS

Felt shifts in the body are the holy grail we seek in Focusing. They can come at any point in the process – but how do they arise in this dance of neurobiology and physiology? Somehow, by keeping our attention with the body and allowing what wants to come to come, the body sometimes relaxes and opens. Our breathing may deepen (the diaphragm muscle relaxing), muscles stop being so tense, the heart slow down, the gut relax, and blood chemistry may change (such as cortisol release being stopped and endorphin release starting). All these changes come about through the parasympathetic nervous system, our autonomic switch for rest and relaxation.

More nervous systems: sympathetic and parasympathetic

*The autonomic nervous system breaks down into two branches. The first is the **sympathetic** which gets the body aroused for action, stress, fight and flight. The second is the **parasympathetic** which does the opposite: it puts the body into rest mode, enabling good things like relaxation, digestion and sleep.*

My guess is that a felt shift enables brain and body to complete an emotional cycle that got stopped midway, leaving the body marooned in a sympathetic state of nervous arousal. With the openness to bodily feeling that Focusing encourages, these incomplete cycles can run to completion. Cue the parasympathetic taking over. This can seem to us as if the body takes over from the limited capacity of the brain to think it's way to feeling better, so the body must be cleverer than the head. We've already unravelled this understandable misunderstanding, but let's go into a little more detail.

The enteric nervous system: a second brain in the gut?

*As well as the central and peripheral nervous systems, we have an **enteric nervous system** in the*

lining of the intestines. This fact led Michael Gershon of Columbia University in New York to write about the 'second brain in the gut' in the 1990's - and some focusers to get excited about it, as I recall. The enteric nervous system consists of neurons and synapses and the same neurochemicals (e.g. serotonin) that are found in the brain. But its job is to control digestion, so that the head brain need not bother with the detail of moving food around. As Gershon himself admits, the brain in the gut doesn't write poetry or think philosophy. But it does have a big effect on how we feel in our guts – and therefore on how we feel.

There is also a nervous system in the heart. Some rather wild claims have been made about its perceptual powers, but the reality seems to be that it looks after the movement of heart muscles. If this seems boringly mundane, remember that this nervous system thereby governs the coherence and variability of heart rate which is of huge importance to our emotional and physical health.

When the parasympathetic takes over from the sympathetic nervous system, the intestines start digesting food again. This gut movement is called peristalsis, and the theory of biodynamic therapy is that peristalsis includes psychoperistalsis – the digestion of food enables the digestion of stress (cortisol residues) in the gut. Psychoperistalsis feels good.

Why else do felt shifts feel good? The switch from sympathetic tension in the body to parasympathetic relaxation feels good – we like relaxing. Felt shifts move us from neurotic states of isolation to more open and connected ones – we rejoin the human race and feel more sociable again. Cue endorphin release: endorphins are the body's natural opiates that dampen pain and stress, and the subject matter of Candace Pert's *Molecules of Emotion*. There is probably also a release of dopamine, a neurochemical associated with the brain's 'reward' system that creates feelings of pleasure and with 'neuroplasticity' – the ability of the brain, throughout our lives, to grow new synapses so that we continue learning. Felt shifts have been shown to correlate with alpha waves, signifying a state of relaxed wakefulness in the brain (Don, 1977). Finally, a felt shift may involve a switch from a negative feeling state in the right hemisphere to more left hemisphere activity. An active left hemisphere correlates with feeling energised and outgoing, motivated to get on with our lives.

In a general sense, bringing conscious experience back into line with unconscious bodily regulation feels like a relief.

MIND STUFF: BODY WISDOM, THE FEELING OF 'RIGHT', AND FRESH LANGUAGE

The 'wisdom of the body' is much too intelligent an aspect of mind for the limited neural networks in the body – or for any other aspects of our physiology. Rather, it points to the sort of knowing that comes when we step out of left hemisphere cogitation into body awareness. It's an intelligence rooted in the right hemisphere's direct connections with the body rather than in the virtual representations of the left hemisphere. The mind is not in the body, really, but we need our felt experiencing to link mind and body and thereby open up the real breadth and depth of our minds.

Likewise, when something 'feels right', it seems as if our body knows something our conscious mind doesn't. But it's the right hemisphere that has this right feeling, in its wholistic, linguistically limited way. The body, however, is the compass for our relationship with our right hemispheres – we need it to find our way around in our less conscious feeling mind.

Words may seem to 'come from' the body, but of course they don't really. However, words that arise in the right hemisphere - or that arise when the left hemisphere is not inhibiting the right - feel different from words that the left hemisphere juggles with. Language sometimes seems limiting, but no one would say that poetry, good literature or a Shakespearean soliloquy limits the human mind. The point here is how we allow language to arise.

Embodiment

McGilchrist summarises research that points to some surprising aspects of embodiment.

Language is an embodied skill, the origins of which lie in the empathic communication of music. But in evolution its development has coincided with the grasping of objects, a left hemisphere specialisation. Syntax is rooted in the patterned sequences of limb movements in creatures that run. Metaphors derive from our experience as embodied creatures. The structure and content of thought lives in the body before we articulate it in language. Our concepts draw on the commonality of our bodies and of the environments we inhabit, so they are sometimes universal across cultures. And truth is mediated by embodied understanding and imagination, so that our common embodiment allows us to have common and relatively stable truths.

Intuition is a term that refers to ways of perceiving and knowing that arise in the right hemisphere. And the mind changes as emotional states change. Just reflect on the difference in your mode of thinking, and what you think about, between being calm and contented or being anxious and fearful. Cognition is underpinned by affect, and neuroscience turns cognitive psychology upside down by revealing how emotion arises in subcortical areas that then change the cognitive state of the cortex. It's called the primacy of affect over cognition.

THE LISTENER BRINGS THE FOCUSER'S INNER EXPERIENCE ALIVE

So far we have looked at one person alone with their brain and their body, but this is a hopelessly incomplete picture of real experience. We are social creatures, and our inner lives unfold in a world full of other people.

The right hemisphere attends to those around us (as well as to the body), and handles bonding and empathy. By contrast, the left hemisphere indulges in competition and self-belief. When the two hemispheres are at odds in a relational situation, you get incongruence – whatever the left hemisphere says, the right hemisphere communicates something different, in part via the body. So when we turn attention to the body in Focusing, all the implicit stuff of communication becomes significant. The Focuser may experience the listener as supportive of touching into vulnerable feelings, but this does not always happen.

The social engagement system: life threat, danger or safety?

Stephen Porges, a psychiatry professor in Chicago, describes a part of the autonomic nervous system centred around the vagus nerve, one of the bundles of nerves linking brain to body, in this case the heart, the intestines, the facial muscles and the pharynx and voice box. He calls it the social engagement system – it is found in all mammals and in its human form enables us to engage with each other actively without becoming aggressive or defensive. It can be in one of three states: 'life threat' where you run or freeze, 'danger' where the fight aspect of the fight/flight response is triggered, or 'safety' where you can engage with others in rewarding ways.

Sometimes being with another person as we explore body and feeling triggers danger. In Focusing, we try to create the conditions that will keep both the Focuser's and the listener's social engagement system in safety, otherwise the capacity to attend to a felt sense goes up in smoke. If we are not in safety, we can very quickly feel quite uncomfortable. The background to this discomfort may lie in the childhood experience of empathy or the lack of it, but we are not concerned with this in Focusing.

Affect regulation

This is the ability to cope with the ups and downs of our emotional lives. It is learned in infancy through our attachment relationships. Problematic attachment patterns lead to problematic affect regulation, so our feelings can get out of control and we are unable to allow others to help us manage them. We need others for emotional support throughout our lives if we are to be on good terms with our body and feelings. Affect regulation is looked after by the right hemisphere, generally beneath the surface of consciousness.

It follows that if in adulthood our capacity for affect regulation needs repair, then we need someone else to help us – to respond to us as mother wasn't always able to. The experiential listening skills of Focusing are of great value here in creating a form of empathy that perhaps mirrors the empathy young children need.

BODILY ATTENTION EVOKES IMAGES, TRANSCENDENT EXPERIENCE – AND VULNERABLE FEELINGS

I hope we all agree on this. It's certainly my personal experience, and something I have noticed many times when teaching Focusing to others.

Why images? Probably because they are a right hemisphere specialisation – let us say, the right hemisphere is better at images than the left. The left hemisphere deals in words and processes them serially, whereas the right deals in wholes – and an image is a whole. By engaging the right hemisphere with bodily attention, images are more likely to arise in our stream of consciousness. Of course, just because one right hemisphere function is stimulated doesn't mean that all the other ones are as well. Nevertheless, as already mentioned, right hemisphere areas are more interconnected than left hemisphere areas are, so there is a tendency for one of its specialised functions to trigger another. Experience of Focusing would certainly suggest so.

Why transcendent experience? Because transcendent experiences also arise in the right hemisphere. Research into meditation shows that the particular patterns of brain waves (patterns of neural firing through large areas of the brain) that are evoked begin in the right hemisphere and then move into the left, as well. Bodily attention sometimes may be a way to trigger the right hemisphere going into transcendent mode. Meditation research also shows that less activity in the right parietal lobe can dissolve the boundary between the sense of self and the sense of non-self, leading to experiences of unity with others. Of course, if we go too far in this direction in Focusing, we lose the sense of the body.

And why vulnerable feelings? The emotional aspect of the hemispheric divide now looks like this: the left hemisphere is biased for anger, the right for sadness, while positive feelings involve both. In Focusing, it is common for sad feelings and tears to arise, and much more rare that anger unfolds (as opposed to recognising anger as an aspect of a larger felt sense). It is also common for the focuser, especially if new to Focusing, to experience anxiety when turning attention to the body. Many people carry a fear of encountering unresolved traumatic experience, and if we put our attention in the body we run into it, so we stay away – which may be why some people do not want to do Focusing in the first place. But Focusing is also good for creating the conditions for safety that enable scary and painful feelings to be approached.

CONCLUSION

There are many ways to ground ourselves back into the inner world of feeling and body when we have become disconnected – in McGilchrist's language, to return the emissary to his master. Music, dance, art... the list is long and includes having a good conversation with a friend. Probably most, if not all, spiritual practices achieve this grounding in some way. Focusing is a particular way of achieving it, and it has the advantage of embracing feeling, the body, creative self-expression, and relating when we have a listener. Here is a way to liberate the left hemisphere from the trap of the virtual world it has created for itself and to which it is so attached, and return it to the embrace of the right hemisphere, whence all our experience originated in the first place. No wonder there is both resistance to Focusing and delight when we let go to felt experiencing!

The left hemisphere 're-presents', the right hemisphere 'presences'

Returning to the relationship of the cerebral hemispheres, McGilchrist details research showing that the left hemisphere is dependent on the right hemisphere, because it is the latter that is connected to the body and therefore the outside world. The problem is that the left hemisphere behaves as if it weren't so dependent. It likes to grab what arises from the right hemisphere,

conceptualise it, and then hold onto the concept while ignoring the experiential ground it came from. The left hemisphere just loves a good theory. It is always engaged in some purpose, while the right hemisphere has no designs on anything and is content to just notice what is. An outcome of this arrangement that may surprise: while the left hemisphere likes to categorise things, the right likes to discriminate amongst fine detail, hence its tendency to throw up little feelings of 'something doesn't seem right here'. The right hemisphere sees things as wholes in their context, while the left sees things abstracted from their context and breaks them down into parts. The job of the left hemisphere is to make the implicit explicit, bringing things into focus so we can apply our will to what we see. McGilchrist says it re-presents, whereas the right hemisphere 'presences'.

The world of the 'unit model' that Gendlin berates, where everything is broken into pieces and measured, would seem to be a left hemisphere one where the emissary may betray the master. The world of his 'Process Model' is an attempt to re-instate the right hemisphere and the master in their rightful place, describing how even the concepts for understanding it are of a different nature from those we are accustomed to with a left hemisphere perspective.

I don't advocate trying to explain everything about Focusing with neuroscience. Let's keep a space for the mystery of experience that unfolds from within. But neuroscience does offer some fresh maps of the territory. For example, how about seeing the inner 'critic' as the left hemisphere's comments on the right hemisphere's original contribution... if we float the question this way, where might it lead us?

Using science to look at our Focusing experience is an example of integrating both hemispheres. Grounding this exercise in our experience means we can avoid the absurd situation whereby science tries to explain even where it denies our personal experience. We can use it instead to elaborate on our experience where it seems to shed some light upon it.

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