

## EVERYDAY MIND AND LOVE 2018

### Session 3 March 8

In the words of Dan Siegel: **Mind is an ‘embodied, relational process that regulates the flow of energy and information within and between us.’**

I’ve been promising you a simple way of saying what mind does. In the previous two sessions we’ve been putting together some words and concepts that will be part of that working definition. I hope some of those are not just words from a book, but thoughts drawn from your own personal experience. Today I’m putting up someone else’s definition that it is widely accepted, which we can use as a reference point. Much of it is what we have been talking about.

The first thing to note is the word: **process**. Mind is a process, not a thing – always flowing, ever-changing. Secondly you may recall from our last session how much of it is happening in our bodies. You feel it in your body as well as think it in your thoughts. As Guy Claxton puts it in his book *Intelligence in the Flesh* that I featured last time: ‘your mind needs your body much more than it thinks.’ By simply changing the muscles in your face you can affect your subconscious emotions. The beat of your heart affects your mind and vice versa. Butterflies in your stomach are part of your mind. In other words, mind is **embodied**. Thirdly it is not operating just within you, but also in the space between you and another person – in other words it is **within and between us**. In this sense it could be called **relational**.

The rest of Siegel’s definition is fine for a textbook, but it’s not exactly what I’m offering you in this Course. We are trying to find the simplest way of describing – and understanding – our own mind. We need words and concepts that fit so closely with our everyday experience that we can carry them around with us and bring them out when we need to use them. Ours will be a utilitarian definition, not too technical, and not a philosophical one, and of course it isn’t meant to exclude other possible definitions. The mind might have other dimensions or other forms way beyond anyone’s ability to describe it.

This is an important point. We don’t know what we don’t know. I choose to believe that what we know is only a tiny fraction of what could be known. I came to an awareness of the **unknown** – as I like to call it – from my own personal experience as a young man. From my teenage years until I was 37 I had a difficult time. I seemed to lose my way, became very unhappy and had to seek help from both doctors and from friends. For one thing I drank too much alcohol, which damaged my relationships and sabotaged my self-esteem. At the same time I was an ambitious young scientist trying to prove that rational thinking would explain everything and solve all my problems. I was determined to think my way out of the mess I was in. Eventually some doors opened to what I call a more **spiritual** approach to life, though it hasn’t been particularly religious. I respect all religions and all ways of acknowledging the unknown. For me the unknown is some kind of ‘higher power’ that I respect and try to love because I believe it is where my **meaning of love** – as a biological necessity – comes from.

People often speak of ‘one mind’ that is universal and encompasses all our individual minds and there is some evidence to support this idea. Physicists discuss ‘consciousness’ with theories that may be useful abstractions for explaining the mind. The whole story of this

**aliveness** that I like to talk about as a biologist is also told through many great metaphors and stories. One I like by Brian Swimme is called *The Universe is a Green Dragon*. It's about love as a cosmic dimension and other things.

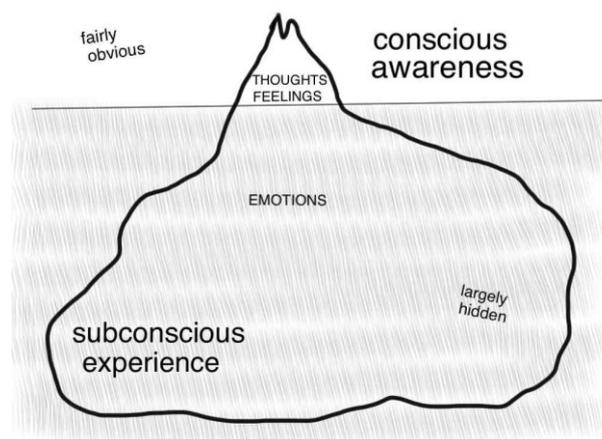
We each make our own **meaning** and we use our mind to do that. It's up to you to find your preferred meaning regarding the mind. My way of explaining this is not the only one from which you will draw. People have been writing about the mind for a very long time. As well as science, both Eastern and Western religious traditions have shaped our understanding. From the multitude of books you could possibly use to help work out your own meanings I have selected just two, today, that I think could be especially useful.

The first is a little book by Rick Hanson and Richard Mendius called *Buddha's Brain – The Practical Neuroscience of Happiness, Love and Wisdom*. I don't think it is particularly Buddhist, but it does bring in contemplative practice as a way of shaping your brain and mind. It gives some of the simplest and clearest descriptions of **brain** anatomy and function without saying, as many books unfortunately do, that the brain is the mind. The brain is not the mind – the mind uses the brain to do what it does. Their message is that the way you use your mind affects what happens in your brain. Rick Hanson is very active and accessible on the internet so you can watch videos and learn things from him in many different ways.

The other book is more general one by Dan Siegel, also from California. It's his latest book, published last year, called *Mind: A Journey to the Heart of Being Human*. He is also a very public figure and a great communicator with a huge presence on the internet if you want to follow him. What I like about him is that he seems to have kept himself mostly outside the common American mindset in neuroscience of the brain being like a computer. As a young man he dropped out of medical school early because he didn't like the 'unfeeling' super-objective, mechanical approach of his teachers, but he later returned to specialise in paediatrics and then wrote excellent books on the developing minds of young people. This one is quite autobiographical about his own journey toward understanding of the mind.

### **Basic functions of the brain and nervous system**

The mind involves our whole body and most of it is **subconscious**, as I have already said – and the diagram below suggests.



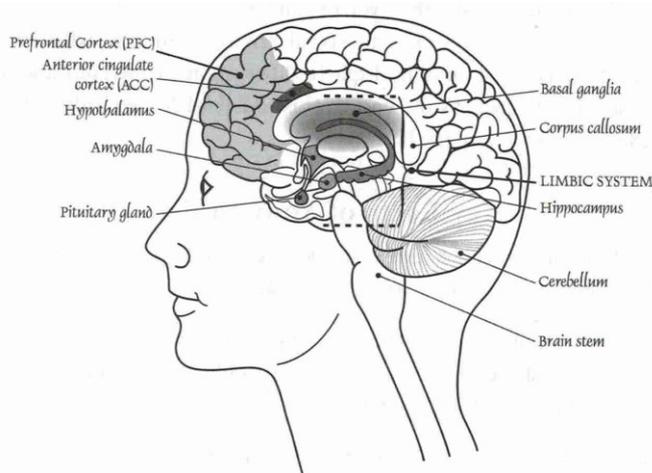
But it is helpful to visualise the different elements of our nervous system that make all the subconscious things happen. These are combinations of **neural networks** and **hormones**.

Broadly speaking we have three different sub-systems within our nervous system. The hub in the **brain**, with connections running through the spinal column, is called our Central Nervous System (CNS) and it is linked to everything else. It operates the **Autonomic Nervous System (ANS)**, which is entirely involuntary and subconscious and which regulates everything from breathing and heart rate to digestion in our gut, cleansing in our liver and kidneys and the organs of reproduction. The extensive part of our nervous system that we are more aware of through sensory inputs and motor outputs that drive our muscles is referred to as the Peripheral Nervous System. The way our ANS manages internal processes is referred to as **self-regulation**, which we will need to look at in more detail.

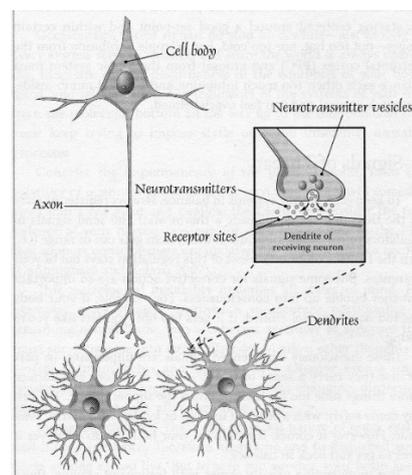
It is the **ANS** that connects the muscles in our face, eyes and ears to our heart and every other organ that ensures that mind is operating throughout the whole body at all times. Recall the dramatic effect that frowning has on your deep emotional state to remind yourself of **autonomic** nervous activity. It is also at the centre of the fight-or-flight response that releases adrenalin to lift your heart rate and blood pressure if you are suddenly in danger. I will say more about the ANS in relation to **stress** a bit later.

To say that the **brain** is a complex neural network could be the greatest understatement ever. The complexity of a hundred billion neurons each interconnected with many thousands of other neurons is unparalleled anywhere else in our human knowledge. The significance of this is that our brain is reconfiguring its connections all the time. Everything we think, feel and do is influencing – and being influenced by - these **connectivity patterns** in the brain.

There is a bewildering array of names to describe different regions within the brain and this suggests that we actually know what each part does. That is misleading because the different regions work in combination with one another and it is the connectivity pattern that most affects what they do. In a general sense certain regions such as those listed in the diagram below are known to be where different emotions are generated and others figure prominently in specific functions such as perception, memory, decision-making, pleasure, sadness and so on, but it is not helpful to be too dogmatic about this.



Basic Parts of the Brain



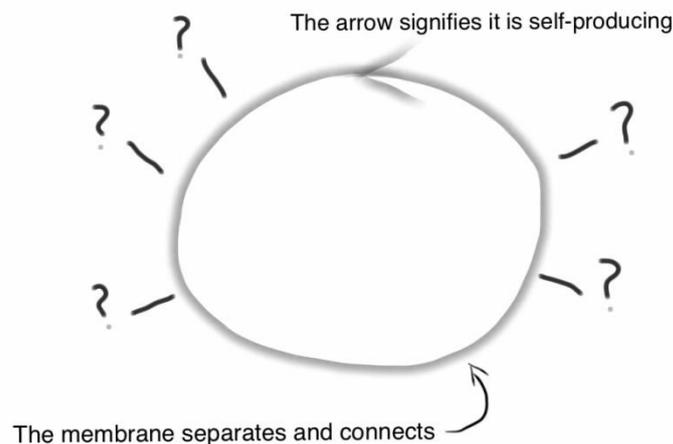
A Neuron and the Synapse (inset)

I don't want to go further down that path of explanation today – except to mention the great significance of the **synapse**, which is the junction between two neurons. Where two neurons meet there is a tiny gap – they don't actually touch – and the signal can only continue along the network if it is carried across this gap by a particular hormone called a **neurotransmitter** that connects with a **receptor** on the other side. A hormone, by the way, is a chemical substance that travels from one place to another in the body to make something happen. The different neurotransmitters fall into two basic types – **excitatory** (like adrenaline, glutamate etc.) that speed processes up or **inhibitory** (like GABA and serotonin) that slow them down. The strength and effectiveness of any part of the network depends on how well the synapses are working. Those that are used often get stronger and more active; those that aren't getting much traffic get lazy – less hormone, fewer receptors and so on. This is a key principle to remember about how the brain operates. The way we use our mind changes connectivity patterns in the brain, mainly because it changes the activity in these synapses.

### The simplest possible mind

I said we would use biology as well as psychology to understand the mind because we want to know the simplest possible way of explaining it – in other words, its **essence** or basic principle.

Andreas Weber wants to make us think when he says in his book *The Biology of Wonder – Aliveness, Feeling and the Metamorphosis of Science* that **values, meaning and feeling** are universal properties of all living things. **Aliveness** is a desire to live and every animal, plant or microbe has that. As with humans, the subjectivity of each individual defines its purpose, which is to act **meaningfully** in each moment. There is a whole philosophy about this that I love to talk about, but can't really go into here. **To cut to the chase just imagine that you are the single-celled organism represented by the circle below.**



To stay alive you have to take in nutrients – in our case that includes oxygen and water – and dispose of any rubbish that builds up. That happens across this cell wall or membrane, which acts like our skin to keep the outside out and your insides in. By doing that you **recreate yourself in each moment** to go on living. Maturana called this *autopoiesis* – self production. The arrow denotes the fact that you are a self-producing – and thereby **autonomous – unity**. Varela wrote the book *Principles of Biological Autonomy*. You must distinguish yourself as

an individual to go on living. **Autonomy means self-governing** – in other words what happens in you is not determined and controlled by what is happening around you. If it was you die. Of course, it is affected by what is happening around you, but you must retain your autonomy to be alive. So that is the essence of what any of us living things must do and we do it with our mind. Our mind is enabling us to achieve autonomy – which is to be ourselves. But it's important to note that it can only do this if we also have an appropriate **interface** between us and the outside world, which in this case is the **membrane**.

This 'membrane' must have special properties – it must let some things through at certain times while keeping a lot of things out for the rest of the time. Our human interface with the world is essentially the same even though it is much more complex with special sense organs like eyes, ears and nose and a mouth. It must be a **barrier** in order to preserve our autonomy. It is even a barrier to the transfer of meaning, which is necessary to **separate** the process of your mind from mine well enough so that you can be you and I can be me. But every fence is also a point of connection between two places. This membrane or interface is also the only means of **connection** with our surroundings. When we need nutrients or to discharge waste – or in our case a friend to talk to or a movie to watch – we need the connectivity that it provides. This crucial element of appropriate **connectedness** is provided by our mind. The essential role of the mind in our aliveness is **to provide both autonomy and connectedness at the same time**.

These two are not mutually exclusive, but they are competing interests. Too much autonomy would jeopardise our connectedness and too open a connectedness would threaten our autonomy. So the mind has the right royal task of getting the correct balance between the two at all times even though the world we are in does not stand still – it changes all the time. We are like little ships sailing on a vast ocean that is sometimes calm and sometimes stormy – we have to keep ourselves afloat and enjoy as much of the scenery as we can.

Like all living things we need a special kind of connectedness that supports our autonomy in the most appropriate way. Our interface with the world is so complex that we get lost sometimes trying to explain all the subtleties of it. If you look through a microscope at a simple protozoan in its liquid world you can see how fragile its membrane is. A slight change in the chemical soup surrounding it will destroy both its autonomy and connectedness stone dead. But you might also notice that it will attempt to move away from toxins and move towards food. It's not stupid. It simply desires to stay alive – that is what it **values**. You could say it understands the **meaning** of this situation and acts accordingly. This is saying that it has a rudimentary **mind**.

I think one of the obstacles to seeing ourselves and our own mind in this primitive scenario is a widespread misunderstanding of our own perception process that has been driven by what we called the **age of information**. Before about 1950 the word information was not used in relation to the mind, but after *information theory* was developed by the Bell Telephone Company and the digital computer came into being the idea of taking in and processing information has dominated all explanations about the mind. We have flooded ourselves with information, which has drawn attention away from the mind's main task of making meaning. In our society today people clamour for more information when what is needed is more sharing of meaning. In the next session I will explain that perception is not simply taking stuff in – it's a **two-way process of connecting**. We actually take in only a fraction of the

available information because our mind is continually **constructing** a meaningful scenario using the power of its imagination. In the next session I will explain this more fully.

If you can at least get a glimpse of yourself and your own mind in this scenario of the most primitive mind it will help to explain some of the most difficult issues we face in everyday life. As the Course continues I hope that will become clearer and clearer.

We use our mind in such complicated ways that we often forget the basic principles. Every day there are people who bother us by what they say or do or fail to do. Every day there is a decision to make: shall I do this or do that? Sometimes we feel confident and strong; at other times we feel defeated and unworthy. We may feel lonely or sad, get into an argument, jump with joy or relax in peace, and perhaps wonder: how did my mind do all this? The sort of answers we come up with could be: he's an idiot anyway; they should never have set it up like that in the first place; when I do this there'll be no possibility she can do that again next week; perhaps if I was better looking she might have been more interested in me; I'll buy up the whole town and build apartments and everybody will have to pay me to live here; the list could go on and on. These sorts of complications are what I call **overuses** of our mind, which happen when we forget the basics.

The two most common overuses of our mind are **making judgments** and **trying to control the future**. There are some judgments that we need to make every day and there are other opinions that we share with people to contribute to the wellbeing our society, but most of us make far more detailed and more frequent judgments about other people and what is right or wrong than are actually necessary. Our mind is designed to try to predict the future so we will naturally be thinking about that a lot, but most of us overdo the use of our mind to try to control or manipulate what is going to happen in our circumstances and with other people.

If we go back to basics we see that, deep down, our mind is designed to achieve just one thing, with two parts to it – a certain quality of connectedness that is good for our autonomy. It makes us look, first and foremost, at **the quality of our connectedness**. In uncertain moments the priority as far as our mind is concerned is to move towards or reach out for **connectedness** - not just any kind of connectedness, but the kind that will be best for your inner strength as a person in your own right – your **autonomy**. There is a great deal more to say about that, as you can probably imagine. We will continue next time.

Today, let us simplify Seigel's definition of mind in the following way:

**Mind is an 'embodied process, within and between us, that connects us in such a way that our autonomy is preserved.**