

Chapter 10 The Emotional Mind

The way in which our minds bring forth our individual worlds and are operationally closed so that meaning cannot be transferred directly from one to another implies a somewhat isolated and alienated existence yet the reality of our normal human interaction is generally not like that at all. How is it that we are able to connect so deeply and meaningfully with one another in so many situations? The answer lies in the emotional component of our mind. Though often maligned and misunderstood, the powerful experience of *emotioning*, as Maturana called it, flows through our lives so unmistakably that it could never be entirely ignored by those who have studied the human mind. It has been portrayed as both villain and heroine at various times. In the stories of modern cognitive science it has become one of the principal characters.

Plato argued that our emotions arose from a lower part of the brain and perverted reason. Some of the great philosophers of the 18th century, David Hume and Adam Smith, for example, wrote a great deal more kindly about emotions even as they heralded in the age of reason. Adam Smith wrote *The Theory of Moral Sentiments* before he wrote his *Wealth of Nations* so he could be said to have founded the ‘sentimental science’ as well as the so-called ‘dismal science,’ economics. He wrote about the ‘invisible hand,’ which is still mentioned in economics today as one of the ways in which emotions act as a thread that weaves together the fabric of society. The beginning of the scientific revolution was accompanied by a much reduced awareness of emotions as elements of the mind. Charles Darwin, the most influential of all biologists, used emotions to illustrate the evolutionary continuity of humans with other animals, but he also considered emotional expression to be a vestige of the past that was no longer functionally important because it had been surpassed by human reason. His book, *The Expression of Emotions in Animals and Man*, written in 1872 near the end of his life, attracted little attention until fairly recently when it has been revisited within the mainstream of mind science. You and I have lived through the information age when emotionality was still considered secondary, but nowadays it has taken centre stage again such that Dylan Evans has written recently: “emotion lies at the root of all intelligent action.” In this book we will see that the emotional mind is indeed the glue or the cement that binds human societies together.

I would like to remind you of a fairly lengthy quote from Maturana that I used right back near the beginning of the book under the heading: a glimpse of what is special about human beings:

“What is a human being? What do we see when we claim someone to be human? I say that a human being is a living system living in conversations, where a conversation is an entwining of language and emotion . . . as the emotion changes, the language changes, as the language changes the emotion changes. I also claim that language is our human manner of living together and is not a communication tool. It is a coordination or dance of behaviour that has become more complex. For instance pointing is an operation in language where we humans look in the direction of the pointing and not at the finger whereas my cat, outside of language, only looks at my finger. I claim it is a coordinated dance . . . that we live in it . . . and that love is central to the development of this increased complexity and therefore to what makes us human.”

The idea of the dance of conversation is still to be developed fully as this story progresses. The biological significance of love, one of Maturana’s key ideas, will be a

major theme for the next few Chapters. That love should be important and beneficial to human beings is not at all a new idea, nor in any way surprising, but I hope it can be seen in a new light now because of the advances in mind science that I am relating here. Sometimes love is not even listed as one of the recognisable human emotions, which is interesting in itself, but it does take a preeminent position in my explanation of the emotional mind. To get this into perspective we will look first at some of the classic ways in which emotions have been studied and described.

The universal nature of emotions

In the period when Darwin's *Expression of Emotions* . . . and such sentiments as Adam Smith expressed had fallen out of favour there was a wave of colonisation by European powers of countries that were occupied by more primitive or at least less industrialised people. The thinking had developed that human emotions were essentially cultural in the same way that language is (as we saw earlier in this course) and that the indigenous people would not have the same feelings as the more 'cultured' Europeans. It was the famous work of Paul Ekman, less than half a century ago, that showed how wrong this was. He identified six basic human emotions that were felt and expressed in exactly the same way by New Guinea tribesman who had rarely seen white people before as by the American people he used in his study. The facial expressions associated with these emotions were almost identical in the two different human populations and Ekman described these expressions as a universal and innate human 'language' because they had not changed as the society had become more industrialised and presumably more complex.

The six primary emotions, as they came to be called, are fear, anger, surprise, disgust, joy (also called happiness) and distress (also called sadness). In fact Darwin had identified all these long ago and described many variations such as horror, rage, astonishment, disdain, contempt, love, anxiety, grief, despair, *etc.*, as evidence of the evolutionary continuity of animals and man. It can be quite confusing with so many different words used to describe emotions, but I think that is an indication of the rich diversity that we recognise in ourselves and one another so far as our feelings are concerned. Although the basic emotions are now regarded as universal and innate there is an overlay of cultural variations in the way they are expressed, *e.g.* in some cultures people smile much more, in some there is a distinctive way of expressing anger or disdain. Nowadays it is common to speak of 'higher cognitive emotions' such as pride, shame, envy or jealousy and love is usually included here although there has been debate about whether romantic love is innate and universal or highly acculturated; an 'invention of medieval poets' as Dylan Evans put it. Following Maturana I have come to regard the state of mind called love as a very basic thread running through our evolutionary development, particularly from the earliest mammals through primates to the modern human being.

Emotions as aspects of knowing

That the expression of emotion is an important aspect of our mind is obvious. It enables us to know quite clearly what another person is feeling, which is the closest we have come so far to a mechanism for knowing the meaning that someone else has in mind. In fact Wittgenstein wrote: "we understand other's minds through perceiving and responding to expressions of feeling." As Darwin had recorded earlier the expression of emotions may involve sounds, body movements and postural changes, hairs standing up,

ears drawing back and many muscle changes particularly around the mouth and eyes. The human face has a very complex musculature that enables a great variety of facial expression. The importance our brain attaches to reading faces was mentioned earlier in the course. Clearly emotions play a large part in the business of knowing and being known.

What we are observing, however, is not the emotion itself; it is the physical action that accompanies the emotion. There may be a whole series of other behaviours that follow the initial expression, particularly with strong emotions such as rage or despair. Maturana gave us a way of thinking about the emotions themselves that helps to explain their role in the operation of our mind. He defined emotions within the body as ‘bodily predispositions to action’ and went on to say that they determine our ‘relational space.’ In the presence of a particular emotion certain actions are far more likely to occur and some other actions would be very unlikely. It is interesting to note that Darwin had a similar idea. Darwin’s first principle regarding the expression of emotions was that particular actions were consistently associated with each emotion or ‘state of mind.’ A simple analogy is that a car in reverse gear is not predisposed to move forwards just as a human in a state of abject fear is more likely to freeze or run away than be whispering sweet nothings in your ear. Unlike the car analogy, however, it also happens that the behaviour that flows from the emotion then feeds back to alter the emotional state. Any physical activity will influence our emotional state as we shall see later. The idea that the emotional state of the body and mind exerts a powerful shaping influence on the behaviour that follows and that behaviour in turn influences the emotional state is a key to understanding the emotions as aspects of knowing.

Our awareness of just how important this is owes a lot to the work of Antonio Damasio. He showed that it is not just strong recognisable emotions that predispose to what we do; it is the largely unrecognised undercurrent of constantly shifting emotions that constitutes our knowing at all times and influences the way we will behave. He called these physiological changes that can only be detected by sensitive recording instruments ‘somatic markers’ and described them in his book: *Descartes Error – Emotion, Reason and the Human Brain*. He noted that Descartes (‘I think therefore I am’) was saying that thinking and awareness of thinking were the real substrates of being emanating from a mind (*res cogitans*) that was distinct from the body, which was a mere extension (*res extensa*) and essentially mechanical in its operation. From his research and that of others it now appears that the opposite is closer to the truth: the body is the real substrate of being in the way it shapes the mind. Damasio said: “we are and then we think.” In his more recent book, *The Feeling of What Happens*, which is about body, emotion and the making of consciousness, one of his conclusions was the idea that “consciousness is a feeling of knowing.”

Mary Clarke said that it was “perhaps the quintessential error of the modern Western world view to suppose that thought can occur without feeling.” Assuming that thought and feeling are separate in any way or that thoughts are superior because they come from a higher part of the brain whereas feelings come from the parts that are older in evolutionary terms is completely wrong. In fact an experienced brain surgeon, Wilder Penfield, pointed out that consciousness is not destroyed by removing the higher parts of the brain, but it is if you interfere with the older parts such as the top of the brain stem. The essential basis of thought lies in the brain’s inner realm of basic emotions.

Maturana sometimes described emotioning as a flowing state of bodyhood, a word that covers all the internal biochemical and biophysical activity that produces the emotional expression, whether it is subtle or overt. We will deal with the details of this bodyhood in the next Chapter. Maturana also made a useful distinction between emotions and feelings. He said that when we describe feelings these are a commentary made about the emotioning, not the emotioning itself. In other words, we put into language our impression of our emotional experience when we describe how we feel. The problem is we are usually not very precise in doing this for various reasons such as the need to impress a friend with the severity of our woe or the need to deny to an enemy that we are affected in any way. In this book I still speak about feelings in a general sense except where I want to explain specifics of the biology of emotioning as a component of our mind.

The braiding of languaging and emotioning

If emotion is so fundamental to the mind and the brain is a story telling organ, as I said before, we need to look at how the language in which the story comes to be realised is related to the emotional state within which the story is framed and on which it is based. This we can do because we have defined languaging as the outward manifestation of the operation of our mind; all our body language and tonality as well as the words we use. It is our mind in overt action. As our mind structures the language we use, that language structures our mind in the kind of circular process we have come to recognise in this book as our autopoietic existence. The emotioning on the other hand is the vast realm of the internal processes of our bodyhood that predisposes to our actions and in turn is affected by them. The flowing nature of our mind consists of a braiding together or an endless intertwining of languaging and emotioning. This is how Maturana put it: we live in a conversation in which language and emotion are entwined; as the emotion changes, the language changes, as the language changes the emotion changes; and so on. Each one leads the other in a recursive interacting flow that is the stream of activity we call our life experience.

Every word I am writing triggers a non-specific physiological change in you, if you are giving me your attention, and that is a change in the somatic markers that Damasio described, which is a change in your emotional state. When you come to respond to my words with a statement of your own, or even a certain look of dismay or joyful insight, you are languaging according to the shape that your emotional state is in at that point in time. If we were in the same room, your words or your expression that come to my attention (connect with me) will register in my bodyhood and it will be altered in some way. This will not necessarily be in a way that you intended because I am structure-determined just as you are. I may then react from my altered emotional state in a way that triggers a strong feeling in you that I did not intend. How easily we could get into a fight, if we were not such nice people! On the other hand, how enjoyable it is to flow together in a mutually agreeable way in the course of our conversation!

You will recognise that this is not an exact mechanical correspondence between us where we could predict the reaction in each case. This is not the kind of direct causal relationship that is built on the simple logical distinction between chance and necessity. It is the complex causal relationship which is typical of our multifactorial world built on the distinction between constraint and possibility. It is more like an 'invisible hand' that guides our mind in its journey because we are living systems not bits of machinery. It

was Bateson who compared kicking a stone to kicking a dog. You could expect to know roughly what the stone would do, but not so for the dog. The croquet game that Alice played in Wonderland was exceedingly difficult because the croquet balls were live hedgehogs, the mallets were flamingos and the hoops were made by soldiers bending over.

Dealing with uncertainty is the growing point of the human mind. It is through this challenge that it has developed into the wonderful form in which we experience it today. I will elaborate on this in a later session when we explore the evolution of mind and the development of a baby's mind. At this point it is sufficient to note that logic and rationality alone are not sufficient to deal with situations that are as uncertain as we face all the time. We have spent some time considering the way we use language and the flowing structural form that our world takes on due to this languaging – a process that we are largely unaware of in the comfort of our blind spots. We humans have evolved from earlier forms of using language into this state of 'living in language.' We tend to think of this as our major communication tool in the sense of a conveyor of meaning, which is not an unreasonable way of looking at it within the culture of the information age where the exchange of information seems to be so much a part of our lives. The biology of cognition reveals, however, that languaging is braided with emotioning so tightly that it is never more than one half of the process that connects us to one another and to our world, *i.e.* the process of our mind. This combination of languaging and emotioning is what we call our conversation and it is not primarily for the purpose of communicating in the sense of transferring information or meaning. It is more like a dance we do together to enable us to live our lives in the best possible way. At its best it is a highly satisfying dance of mutual understanding and shared meaning.

The scientific evidence for this different way of seeing the mind is the closed nature of our nervous system; the autonomy and closure that are properties of all living systems. This is what enables every living system from a single cell to a human being to be a knowing or cognitive system, not directed from outside, but knowing and acting according to what its own structure tells it at every point along the way as that structure is triggered by its recursive connections with the outside world. This biogenic explanation of mind gives us a different world view so far as the human mind is concerned; a different window onto the mind. Through this window we can see various aspects of the mind that were previously hidden. The idea is to use this awareness in a practical way in our lives and appreciate its value for attaining the best quality of life.

There is an interesting series of studies by American neuroscientist, Paul Rozen, into the relationship between thoughts and feelings that underpin the emotion of disgust and the stages of development of this emotion in children. This is a good example of how strongly an emotion can constrain a person's behaviour and suggests that our knowing about what we should and should not put in our mouths is probably one of the basic roots of the development of this emotional aspect of our mind. Brain scans have shown how strongly our mind can identify with the disgust shown by another person; in fact the same parts of our brain are activated as if we were experiencing that emotion ourselves.

Other interesting case studies are part of the work of American psychiatrist, Paul Bremner, into the nature of the fear response in Vietnam War veterans suffering from severe post-traumatic stress disorders. In these cases the patient's ability to connect with the world has been completely changed, *i.e.* their mind has been severely damaged. The

emotional pathology involved has profoundly altered their relational space and, even more significantly, their ability to live in the present reality rather than in past fantasies. These are extreme cases, but the way in which emotional experience has altered their perception, *i.e.* their conscious awareness of the space and time in which they live, serves as a good illustration of the workings of the emotional mind in all of us. We will examine the fear response again in Chapter 13.

The heart chakra

The heart chakra lies midway between the base and the crown. Below it are the first three chakras which have a strong physical and external element to them while above it are the three chakras that draw on the spiritual realm and concern our internal experience more than the external. Anodea Judith described the understanding from yoga that the heart chakra is “the balance point between these two extremes, the integrator of mind and body, the central home of the spirit.” To Western science it seems strange to call the heart rather than the brain the centre of our mind-body operation, but the idea can enrich our understanding if we do not reject it out of hand. The heart chakra introduces emotional power and the power of love. The corresponding Christian sacrament is marriage and in yoga this chakra is said to represent the marriage of body and soul.

This meeting point between the physical and the spiritual to me represents the primary interface between the known and the unknown. We are now dealing in our knowing with the influence of the unknown. You might compare this to the influence on our conscious actions of subconscious imagery such as the archetypes described by Jung. Writing about this subject Kugler said that psychic images signify something beyond consciousness; they point to the unknown and are a “bridge to the sublime.” The corresponding element, air, brings a more ethereal quality to our knowing. The association with the breath in yoga shows the prime importance of this chakra. In the way that air is formless and expansive yet soft and gentle the quality of love that is associated with this chakra begins to assume its extraordinary power and primary place in our knowing. The Sanskrit name for this chakra means “sound that is made without any two things striking” and it is said to represent a state without conflict where the movement, the desire and the will (from the first three chakras) can work together in graceful harmony.

In Goethe’s explanation of the perception of colour, which I mentioned earlier, the colour of this chakra, green, has a special central place. Whereas red, orange and yellow arise from the progressive lightening of dark and violet, indigo and blue arise from the progressive darkening of light, green only comes into view when these two ends of the perceived spectrum are joined; at the point where the blue meets the yellow. The corresponding Jewish sephirot is beauty. This is all rather poetic and may seem far removed from biological science, but our knowing and our awesome human mind are surely designed for the poetic at least as well as for the prosaic.

The practical ramifications of this aspect of knowing revolve around the central role played by emotions in our human intelligence. Dylan Evans gives an interesting explanation about why Spock, the pointy-eared, super-rational, half-alien character in *Star Trek* could almost certainly never have evolved. The idea of him has a fascination for us, but his pronounced rationality and lack of emotion would have rendered him so unintelligent in a practical sense that he could not have survived the rigours of our evolution into human beings. In our recent evolution many things happened that rendered

us more vulnerable, more dependent on one another, and more sophisticated in the use of our mind. This increasing complexity of our mind and brain and behaviour produced the braiding of languaging and emotioning that is peculiar to the human species. It is this that enables us to connect and interact with one another in the full expression of our mind and body.

The social imperative

The extraordinary increase in brain size that accompanied our recent evolution was closely associated with the formation of larger social groups and more complex societies. We seemed to need one another more as we have become more human. I will elaborate on this in a Chapter 12. In Maturana's terms the dance of conversation became more complex as we generated more and more subtle nuances of meaning and used these to engage with one another in more sophisticated ways. Emotioning became a critical component of rational thought as the environment with which we had to be connected consisted more and more of other people. The social world became the cognitive challenge that demanded more complex emotions. Steven Mithen and other anthropologists have said that it was coping with the demands of living in larger groups that contributed most to the origin of human intelligence.

In his very recent book, *The Neuroscience of Human Relationships*, about what he calls 'interpersonal neurobiology,' Louis Cozolino described the brain as a "social organ built through experience" and to emphasise this he said "there are no single brains." We will see later that the evolution of our mind and the development of a baby's mind depended on this social activity. Only through the development of this languaging-emotioning braid could the quality of our interpersonal connections have been enhanced in line with the requirements of our increasingly social existence. It was the quality of our connecting that led in turn to the generation of more subtle meanings. We developed an aesthetic sense with a love of beauty through our pursuit of music and art. We became the species that can speak of a sense of wonder and awe. Eugene Stockton said it so poignantly when he wrote: "Of all the things in nature which amaze me, the most amazing thing is that they amaze me."

This is where the emotional predisposition that we call love has been crucial. Maturana defined love in terms of the kind of interaction between us which allows the other to be the legitimate other. It is a way of seeing other people and everything else for that matter with a regard and an appreciation, but not a selfish expectation. It does not mean fulfilling one another's emotional needs. It means being aware of and respecting the authenticity of the other person. It is the most unconditional attitude, the least manipulative kind of interaction and the most inclusive of all the connections we can make. I am not talking about love as a feeling, which would be merely a commentary on the emotion as I said before. Love is the most expansive emotional state and the utmost openness to the world, in sharp contrast to fear, for example, which is much less open or inclusive. Perhaps the most original thing about Maturana's biology is his explanation that without love we humans would not have survived to this point in our evolution. Love made possible the social evolution on which our particular species depended for the development of the human mind.

We have said that all other living things have a mind and are knowing entities. Many other animals have thinking minds that can solve quite elaborate problems using logic

and memory. Other animals also use a form of language whether it is simply grunts or whistles or the quite elaborate symbolic representations that chimpanzees can learn from humans. Even though the development of our language is closely tied to the expansion of our brains it is not what distinguishes us from other animals. Other animals also certainly have emotions. These are most obvious in the mammals that are not too distant from us in evolutionary terms, but the biochemistry required for emotion also exists in much more primitive species. So it is neither emotioning nor languaging *per se* that distinguishes us from other species. What is special about the human mind is the way in which languaging and emotioning are braided together. Although we did not notice it was happening this biologically unique thinking/feeling flow that we developed has given rise to an unprecedented quality of interpersonal relationships, an unmatched creativity that is the human imagination and an awesome and humbling capacity to know ourselves. Earlier we had a glimpse of what is special about a human being. I hope there is now a clearer and more sustainable view for each of us of what is the most special and unique feature of the human mind.

Recognising the importance of love as a social necessity for human beings, neuroscientist Gerald Hüther entitled a recent book *The Compassionate Brain (how empathy creates intelligence)* in which he said that humans have developed this special capability of our brain through practicing it and our survival will depend on continuing to do that. Loving one another implies each of the previous aspects of knowing - recognising our autonomous unity, honouring one another and honouring ourselves - and it adds to them another kind of power that is a little more mysterious, but which we know empowers us and through which we can empower one another. Thus we find ourselves able to demonstrate compassion and acts of forgiveness that have great social benefit. Extraordinary examples of healing become possible due to such powerful emotional connections. There is much more to be said about the nature of love in a subsequent Chapter.

At the same time as we acknowledge that our basic biology of love has brought us to this time and place together we must also acknowledge the pain and suffering and constant struggle that confronts so many of our species every day. The reality of our social imperative is that we do not all live together in harmony, we do not express love and tolerance in a large part of our doing and we do not feel as joyous and free as we would wish to be. There is war and poverty and mistreatment of one human being by another before our eyes almost all of the time. Our quality of life as a species seems to be far less than it could be. This must also be explained to complete our story of the mind and there is much practical value in understanding it.

The everyday emotional mind

Although the heart chakra in its full expression signifies the love that is our birthright, it also stands for all of the other emotions that we include in our everyday knowing. In particular the emotional state of fear has a powerful predisposing influence on the way we behave. There are many other more subtle emotional aspects of our knowing that are affecting our doing all the time. Dylan Evans made a useful distinction between emotions and moods, the latter being more generalised and longer lasting states of mind that may persist for hours or even days. It is very well recognised that the mood we are in will affect our behaviour. This is to be expected from the basic biology outlined here.

A common manifestation of this is the way that emotions and moods affect our attention, the importance of which we have discussed earlier. Strong emotions tend to focus our attention more sharply, particularly fear or anxiety which make it difficult to think of anything other than the apparent source of the fear. Love in the romantic sense or anger or surprise will distract our attention to some extent. The more subtle effects of this are revealed in psychological tests such as the Stroop test in which the time it takes people to name the colour of the ink used to write a word that they were shown depends on whether the word is a powerful emotional trigger or not. If the word is 'rape,' for example, a rape victim will not be able to attend to the colour of the ink without much difficulty. Emotion also affects memory in that different people recall past events very differently according to their emotional involvement in the event. When evaluating a proposal or an argument that is put to you or judging the character of another person, whether you are in a good mood or a bad mood will have an effect. Aristotle noted long ago that "feelings are conditions that cause us to change and alter our judgements." It has been shown that individual preferences are often based on nothing more than familiarity or previous exposure to the same situation. David Hume wrote: "it is not reason which is the guide of life, but custom."

When speaking about the difference between objectivity and subjectivity earlier I suggested that two heads were said to be better than one because the individual bias that is supposedly non-rational or emotional could be cancelled out. The combination of individual minds is not necessarily beneficial, however. Collective emotion in the form of a 'group mind' may lead to antisocial or violent behaviour that the individuals involved would not condone if they were alone. The idea of a 'herd mentality' is also implicated in other kinds of unfortunate connections that could be called sympathy or suggestion such as unquestioning allegiance to a 'Hitler' or a guru or self-appointed 'saviour' of some kind. The beneficial effects of empathy and emotional attunement will be dealt with later.

The perceived need for objectivity has much to do with our desire to conduct what we call business and this has its basis in ownership or appropriation of objects such as land, buildings, food, weapons and, nowadays, information. Even the appropriation of other people has been tried. In our culture we perceive the object as something separate from us compared, say, to an Australian Aboriginal culture in which the focus of perception is the relationship with that particular thing. Therefore our system of trading is not simply for the purpose of living together; it provides the possibility of acquiring more 'wealth' by appropriating more things. The attitude of human beings to one another often seems to be motivated largely by greed. For this to work so pervasively in our society we must try to deny or pretend to ignore the emotional basis of our behaviour and conduct our business in a purely rational way even though this is not quite according to our fundamental human nature.

Ironically the best salesman will be the person who has the best feel for the emotioning involved in the transaction. A good real estate agent will not concern herself with the objective details of the house or the prospective buyer as much as with the feelings that she detects in the process of helping you to find your dream home or the right place for you. What she is seeking is an emotional match between a house and a human being even though the languaging about the deal will mostly be about the objective details such as size and price. It is essentially the same with any other business. The rise and fall of the stock market is a good example of the unacknowledged influence of emotion on business decisions. People take pride in the cleverness of their thinking when buying and selling

shares, but the slightest suggestion of panic by anyone in the system spreads like a wildfire in a strong wind.

The price we pay for this partial denial of the true nature of our mind is that it imposes a degree of strain on our living system. Whatever separates us from our true selves or from one another and the world in a biological sense will act as a stressor and a source of strain for our mind. I mentioned previously that our mind acts as the great connector to deal with the sense of separation that we experience through our consciousness of time and space. In particular our awareness of time and our ability to live in the present is a major determinant of the degree of stress in our lives as evidenced by the case I mentioned earlier of the man whose mind had been so damaged in Vietnam that he could only connect to the past. The complexity of our business world requires us to exercise our mind in planning and evaluating past experiences and future possibilities all the time, which we can certainly do, but not without some cost. This challenge that we face is not necessarily bad in the long run because it helps to equip us to meet future demands, but the stress involved has many adverse consequences for our health and wellbeing as we will explore later in the book.

On the positive side is the fact that so much of our human interaction does match more simply the biology of our marvelous mind. If you really want to connect with someone try laughing with them or crying. When we laugh or sing or say whee!, because it is spontaneous and happening in the present moment, there is a brief respite from the straining of mind in the business of life. Love and laughter and tears are happening now and have nothing to do with who owns what. Maturana once described laughter as a momentary respite from the burden of appropriation. Humour can be understood as a trick that is played with our organising idea. A well-told joke leads it one way and then gives it an unexpected twist. For adults this twist needs also to make a coherent story, but for young children the surprise alone will make them laugh as in playing peek-a-boo. Animals, too, play by tricking one another in a thoroughly benign way.

This sort of loving behaviour puts us in the present moment, here and now, where the connections due to our emotional mind flourish, not in the past or future or the place outside biological reality where business is mostly conducted. The best way to travel together is to be in the present together, but our appropriations often hinder us in this respect because the business they entail requires the denial, temporarily at least, of the emotional part of our mind. So presenters like myself and nervous dinner guests are always trying to get a laugh to enhance the emotional connection, but that too can be an uncertain business because of the highly individual nature of our minds.

The kind of conversation that we have, even the kind of lecture I might give, depends mostly on the emotional authenticity of the participants. You could compare a conversation that is open, honest, loving and respectful, with a controlling, fearful one and consider which one would be the more creative, life affirming and biologically sound. If I talk about appropriated knowledge that belongs in a book, but not to me personally, I will be less interesting, less passionate and less convincing. When we feel good about what we are saying and speak from our heart we are more warmly disposed towards ourselves and others. If you like me we will connect better and understand one another better because understanding depends to a large extent on the emotional mind.

The principal blind spot associated with this aspect of knowing is that men, far more than women, have come to value the rational above the emotional, to worship reason and put down feelings, thus disconnecting themselves from their environment and from one another. Our society tends to put far more resources into science and technology than into the arts or the natural environment. While we obviously do value some deeper bond between us and generally desire to be helpful to one another, we forget that it is not the 'facts' we espouse or the learned nature of our advice that promotes this bond; it is the quality of the connection itself that promotes learning or helpful change and leads to a happy existence. Good teachers love their pupils and vice versa. Friendship and caring are the most powerful healing forces and the most influential agents of change. The greatest virtue is love because it makes the best connection.

The myth of irrationality

The tendency to worship rationality has an important corollary: the deep-seated belief in irrationality. In a book whose title I have borrowed for the heading above, John McCrone claimed that this distinction between rational and irrational has impeded progress in psychology for a long time. He said that a more useful distinction would be between the part that is animal, which I would call the basic biological mind, and the part that is a product of human culture. He deplored the fact that psychology had largely ignored the social and historical nature of mind development, two aspects I am emphasising in this course. That the mind develops its particular characteristics through conversation over a period of time is one of Maturana's themes, of course. It takes the spotlight off reasoning power alone as the defining feature of the human mind and provides space for the emotions to be included. This emotional mind, however, is not to be confused with the irrational mind.

The idea of irrationality can be traced back to Plato, but the main force of its popular meaning today probably stems from the Romantic period when the idea of human nature as the 'noble savage' was developed by Rousseau and others. Romanticism spawned great poetry and expanded the expression of those special human qualities that I lauded earlier, but it also entrenched the belief in the power of irrationality in its new guise of unbridled self-will through philosophers such as Schopenhauer and Nietzsche. The modern day cult of the rugged individual is an extension of the Romantic vision. Freud's great influence on psychology gave more credence to these subconscious drives. Whatever is not rational has come to be regarded as either an especially noble feeling or a terribly base desire. The simplistic imagery of the human mind as half God and half beast does not do justice to the biology.

Mr Spock in *Star Trek* would tell the humans they should govern their passions and rely entirely on logic, but being half human himself, he also displayed a grudging admiration for human irrationality and creativity, especially that of his impulsive commander, Captain Kirk. This is the allure of the idea of irrationality. The so-called logical impenetrability of the mind fascinates us. I have emphasised in this book the need to respect the unknown, but I did not mean in it quite that way. McCrone's point is we know that the higher mental abilities of humans have their basis in our use of language and that our human mental ability is socially derived. He said "the human mind is a social creation based on the organising power of language," which the biological explanation of Maturana entirely supports and to which it adds the braiding of languaging and emotioning as a key element.

McCrone's thinking was developed from the ideas of an outstanding Russian researcher, Lev Vygotsky, whose work was severely curtailed by political pressure and his early death from tuberculosis at age 37, and his colleague, Alexander Luria. They showed the importance of language, including the internal conversation that we call thinking, in shaping our world, which is a principle I have elaborated in earlier sessions. Vygotsky's 'cultural-historical' theory of the mind contrasted with Piaget's 'genetic-epistemological' approach, which essentially described a step-by-step flowering of innate mental abilities. Vygotsky said the guiding hand of culture could be seen behind the full range of human mental abilities from self-awareness through to various forms of madness. What was often labeled as irrational was simply a different way of constructing one's world through language. Luria showed that simple peasants could not pick the odd one out between pictures of a log of wood and various hand tools because they believed these objects were all closely related in a functional way whereas more educated people could distinguish them as belonging to different categories of things. This is similar to the contrast I made earlier between the languaging of Australian Aboriginal people and Europeans. The different meaning that people have formed in different cultures has come from their social history, with its emotioning-languaging braid of knowing, doing and knowing again.

When I acknowledge the importance of not knowing in this course I am not thinking of the opposite of rationality. Nor is it my intention to provide a rational explanation of everything about the mind. McCrone was concerned that the explanation of mind was unnecessarily shrouded in mystery whereas I want to embrace the mystery and properly respect the unknown, but I do not call it irrational. The business of knowing is not confined to rationality nor is the business of not knowing its opposite. I do not think it is necessary either to take the position expressed by David Hume when he wrote: "Reason is, and ought only to be, the slave of the passions." I do find satisfying meaning in the oft-quoted words of Blaise Pascal: 'the heart has its reasons of which reason knows nothing.'

We have only scratched the surface of the significance of love and other emotions in the operation of our mind. In the next Chapter we will examine in more detail the changing states of bodyhood that constitute the emotional aspect of the human mind.

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