Why Love Matters

How affection shapes a baby's brain

Second edition

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nature of the defensive system seems to be built into our genetic programme: it's either fight or flight. Cry loudly or withdraw. Exaggerate feelings or minimise feelings. Be hyper-aroused or suppress arousal. These two basic strategies also underpin the insecure styles of attachment – the avoidant or the resistant. Whichever way the individual turns to find a solution (and these strategies may be used consistently or inconsistently), he or she will not have mastered the basic process of self-regulation and will remain prone to being overdemanding of others or underdemanding.

Trying not to feel

The links between early emotional regulation and the immune system

> The avoiding reactions tend to spread . . . It can be carried to such a point that the individual is not only 'steeled against' the appeal and suffering of others, but he actually dreads appealing to their sympathy, and may, for example, conceal illness for fear of making a 'fuss' or 'scene'.
>
> Ian Suttie, *The Origins of Love and Hate*, 1935

Hiding feelings

In western cultures, the withdrawn, underdemanding posture is more common. The English are famous for their 'stiff upper lip'. But North Americans too are dedicated to 'independence' at the earliest possible age, albeit in more extravert and friendly forms of self-sufficiency. This underdemanding or 'avoidant' style successfully conceals the baby's needs from the parent who seems not to want to deal with them. If such babies could speak they would be saying 'Don't worry, I won't bother you.' They sense that their dependence and neediness is unwelcome, so they learn to hide their feelings. In fact, they may grow up believing implicitly that they should not really have feelings, or perhaps only the 'nice' feelings that have received some positive response. Having lacked the kind of contingently responsive mothering that accepts the full range of the baby's feelings, they learn to suppress many feelings. This may develop into a difficulty in recognising one's own feelings. After all, if the mothering person is not interested in them,

then how can the child be interested in them? If a parent has not identified and named the child's feelings, how can that child identify his own feelings and think about them? They will remain vague physical sensations of pleasure or displeasure that are undifferentiated and not well mapped in the higher brain.

People who grow up in this way are sometimes called 'alexithymic', meaning that they have not learnt to put feelings into words. They are often unaware of what they are feeling. Although they have feelings like everyone else, they ignore their feelings in much the same way that their caregivers ignored their feelings. Feelings don't become as subtly nuanced in the mind and treated as useful information about the state of the organism. They have not learnt to 'mentalise', as the distinguished British researcher Peter Fonagy put it. His concept is an important one which embraces a whole range of capacities including empathy, emotional awareness and emotional expression. Its key feature is the underlying ability to grasp that emotions motivate human behaviour. Alexithymic people, however, underplay the importance of emotion and tend to underuse those parts of the brain that are active in mentalising (especially the medial prefrontal cortex) (Moriguchi et al. 2006; Moriguchi and Komaki 2013).

Some may become pragmatic types who are focused on the external world and try not to dwell on inner states, whether their own or other people's. Very often they get by and do very well in a chosen field of work. They may be devoted parents too, who provide well for their children and encourage them to achieve, without noticing their children's inner states too keenly. To the superficial gaze, they may appear to be very normal and well balanced. However, they often rely heavily on the presence of a partner: someone just has to be there. They don't expect intimate relationships to be a place where subjectivities are mutually explored, but they are very dependent on the *presence* of a safe object for basic regulation. When this object is threatened – perhaps the partner leaves, or dies – there is an emotional disturbance that they do not know how to manage.

Emotions and illness

People who live in this way have been found to be susceptible to illnesses with a psychosomatic component, in the sense that they are vulnerable when they lose their regulatory person, because their own regulatory capacities are not well developed. In particular, they lack the inner words to identify their feelings. They cannot express their distress verbally, so find themselves giving distress signals at a pre-symbolic level, through the body. The words that could be used to interact with others to find soothing and management of arousal cannot be found. When such people experience separation or bereavement in particular, their body systems, including the immune system, may not function well.

I first became aware of the way in which emotional life was implicated in physical illness when my mother became ill with cancer at the age of 49. At the time, she was a woman in her prime, a forceful, charismatic personality whose beauty was mellowing from film-starry loveliness, Grace Kelly without the chill, to a more contented, ripe beauty in her late forties. I wanted to understand how someone so apparently 'strong' could have been so vulnerable to disease and I started reading about the 'cancer personality'. The descriptions seemed to fit my mother well. Cancer personalities were thought to be too nice. They were co-operative, thoughtful, concerned about others and never got angry and negative. My mother too was relentlessly upbeat and tried to search for the positives. She was very appreciative of others' care and concern during her illness. Other people called her 'brave'.

Lawrence LeShan was a writer I read at the time who identified a common pattern in cancer patients. He found that a very high proportion (72 per cent) of those he studied had had a difficult relationship with at least one of their parents, which left them feeling emotionally isolated. He noticed that many of these patients had then turned to a strong emotional investment in someone or something else as a young adult – and when it got taken away from them they got ill. This pattern was found in only 10 per cent of his

control group (LeShan 1977). The pattern also fitted my mother. She left home at 16 to escape her difficult relationship with her own mother, married very young and after nearly 30 years of marriage was left by my father. A couple of years later, her illness was diagnosed.

At the time I wondered 'But how could feelings kill you?' I could see how exercise and nutrition were vital to a healthy body, but my mother was an athletic woman who played tennis, sang and kept her figure into middle age through attention to her diet. She did not look like a candidate for disease. Yet obviously, fatal illnesses could strike at the physically fit. What was it that had undermined her immune system?

Inflammation and the immune system

Researchers were beginning to suggest that the immune system was linked to emotions. People who did not express anger or negative feelings were particularly vulnerable. Lydia Temoshok, for example, found that the more a cancer patient was able to express her anger and negative responses, the more lymphocytes she had at tumour sites to deal with the tumour (Temoshok et al. 2008; Temoshok 1992). One explanation for this was that when anger is expressed, the sympathetic nervous system is aroused, a process that supports the production of lymphocytes and stimulates the immune responses, in the short term. However, when anger or distress are not expressed or dealt with in some constructive way, stress may become chronic and the stress hormone cortisol may remain in the system. As we have seen, this can end up with cortisol levels 'down-regulating'. The resulting 'hypoactive' or sluggish stress response can't then do its normal job of turning off the body's inflammatory response.

The inflammatory response is part of the immune system, usually mobilised to deal with bodily challenges such as an infection. But when cortisol levels are not high enough to turn off inflammation, a state of chronic inflammation can ensue, providing a fertile ground for all sorts of more life-threatening diseases such as heart disease and cancer to flourish (Miller et al. 2011; Danese et al. 2007).

Recent research is now suggesting that emotions can also affect the immune system more directly. Psychosocial stress itself can trigger the release of pro-inflammatory cytokines (Berk et al. 2013; Fleshner 2013). One intriguing study by George Slavich and his colleagues at the Cousins Centre for Psychoneuroimmunology in California looked at how being excluded from a game affected people. They found that the painful feeling of social rejection not only activated the brain's anterior cingulate and insula, but also increased inflammatory activity in the body (Slavich et al. 2010).

Certainly my mother had experienced a significant rejection before her illness. She also tended to hold back any expression of anger or negative feelings. Now other images came to me: of my mother retiring to bed in the middle of the afternoon, lying in a darkened room, as if the strain of maintaining her sociability, optimism and success at all she undertook was too exhausting. It struck me that she was trying to use sleep to regulate her stress. (Sleep can have a mild effect in reducing levels of cortisol.) But it also began to seem to me that the dread of vulnerability and failure, of sadness and anger – feelings which it seemed to me she had kept at bay all her life – had finally 'got' her. They had worked their own revenge for being ignored, by wreaking their own havoc within her body, setting off an uncontrollable process of inner destruction.

As an extravert 'avoidant' personality, a good actress who presented herself as cheerful and lively at all times, she could probably have been described as a classic candidate for psychosomatic illness. Like many people with alexithymic tendencies, her primary relationship was one in which the partner was simply required to 'be there'. During her illness, she described to me how she had had few expectations of emotional intimacy in her marriage, regarding my father as the 'background' to her life. This rather minimal approach to relationships was probably the way she learnt to regulate herself at an early age, with her own parents. Although highly articulate and vocal, she had a practice of not *talking* about her feelings to others, which seemed to me to have come out of her own babyhood experiences with my grandmother.

Granny was a Victorian character who expected much and gave little. She was physically unapproachable, critical

and punitive. She left her babies crying outside in their prams, believing as many parents did at the time that it would 'strengthen their lungs'. In response, my mother took pride in being 'independent' from an early age, and tried to be as strong as Granny demanded. But it seems highly likely to me that she would have had a stressful infancy with a mother who disliked intimacy, touch and dependency as much as my grandmother did.

We know that high levels of cortisol during infancy can affect the parts of the immune system that are developing at that time, in particular the thymus and the lymph nodes. But just as the stress response is programmed by very early experience, so too it seems is the immune system. The more early exposure it has to psychosocial stress, the more exaggerated its future inflammatory response. The two systems are intertwined (Miller et al. 2011).

Some time ago, we learnt from primate studies that stressful early separations from the primary caregiver didn't just affect the stress response, but could also have powerful consequences for the immune system. They lowered the activation of lymphocytes and increased the speed at which an individual animal succumbed to disease (Laudenslager et al. 1985; Capitanio et al. 1998). Now the evidence is coming forward to show that early stressful experiences affect humans in the same way. In particular, researchers are finding that a harsh or stressful early upbringing programmes the baby's immune system.

Harsh parents can of course be found in every social class. Adults whose own sense of self-esteem is rocky are those who are most likely to devalue their child, whether by hitting or by putting the child down verbally. Harshness takes root in insecurity and stress, no matter what the living conditions (Katz et al. 2007). However, poverty itself is also a major source of stress. Living in overcrowded, noisy conditions, being exposed to violent behaviour or struggling with the powerlessness that a lack of income brings, increases the chance that parents will lash out.

Whatever the social context, such experiences leave their mark on the developing child. The Adverse Childhood Experiences (ACE) Study assessed over 17,000 adults and

found that early exposure to negative behaviours such as violence in the home or abuse and instability had a cumulative effect on a child's future health. The more adverse experiences an individual ticked off, the greater his risk for a range of future health problems (Felitti et al. 1998). Current research increasingly links such outcomes to a compromised immune system. When such children grow up, they are likely to release twice as many pro-inflammatory interleukin-6 (IL-6) cytokines in response to current stresses as other non-abused individuals (Gouin et al. 2012; Miller and Chen 2010; Danese et al. 2008). Eventually, they become more vulnerable to a whole range of diseases in adulthood (Miller and Chen 2010; Miller et al. 2011; Ziol-Guest et al. 2012).

Conversely, a child who experiences loving and supportive parenting is not only buffered against stress but also has a more robust immune system. Being touched and held lovingly releases oxytocin in the lymph system, which protects against inflammation (Miller et al. 2011). Breastfeeding, in particular, releases oxytocin as well as passing on the mother's antibodies to the child (Schore 1994). Breastfeeding also passes on polyunsaturated fatty acids (PUFAs) such as omega-3, which play a part in protecting against stress by inhibiting the pro-inflammatory cytokines (Das 2001). So while separation and other forms of distress can undermine the development of the immune system, a warm early relationship helps to promote a robust immune system (Chen et al. 2011; Carroll et al. 2013).

The links between emotional and physical health are rooted in the experiences of infancy, the level of stress and the level of support available to deal with stress. As I have already suggested, early experiences can lead to children becoming 'high reactors' or 'low reactors' to stress. The low reactors often come out of families with harsh parenting styles, particularly with verbally critical and physically abusive parents. Whether it is the body or the psyche that is battered, they seem to have developed a tough skin, a kind of stoicism that lets the hurt wash over them. My grandmother had a special stick with which she beat her children and she believed in physical discipline. She was also constantly critical, as I experienced in my own childhood with her. I think it is likely that my mother became a 'low reactor' with low

cortisol in response to this treatment, while at the same time developing an exaggerated inflammatory response to stress. This would fit with her tendency towards allergies, especially hay fever, and the beginnings of arthritis. Low cortisol is associated with a particular illness cluster – with auto-immune conditions in particular, such as asthma, arthritis, allergies, ulcerative colitis, fatigue and ME (Heim et al. 2000a). The so-called 'cancer personality', in other words, the capacity to endure trying circumstances with fortitude and few words of complaint, is also thought by some to loosely fit in this cluster. Clearly the strategy of suppressing feelings, and the low cortisol that results, can be a dangerous one which has knock-on physiological consequences.

Disease proneness

Today, the 'cancer personality' theory is no longer in vogue. The preferred theory these days is that of the 'disease-prone personality'. This is basically because such a wide variety of illnesses seem to have similar underlying roots in emotional suppression. The range of conditions which have been linked to this pattern is staggering.

Psychoanalytically informed doctors in the 1940s and 1950s were the first to identify and work with the classical 'psychosomatic' diseases (Taylor et al. 1997). They believed that they were caused by 'strangulated' or conflicted feelings that needed to be discharged. This was based on the psychoanalytic view that neurosis was caused by repressed sexual or aggressive drives which were in conflict with social morality. The cure was to bring them to consciousness.

The new paradigm of affect regulation offers the view that it is not so much the repression of our primitive sexual and aggressive urges that pushes us towards ill health, as a failure to experience and tolerate all our feelings while maintaining a state of organismic balance. The newer view is that human beings are self-regulating organisms, and failures of regulation can generate pathology.

Once you start to think of yourself as an organism with many interconnecting systems that provide feedback to each other and regulate each other, you can start to appreciate

the part that feelings might play in physical illness. Emotions are central to self-regulation. They are the biological response of the organism to other people and situations, and this response can be a useful basis for reflection and a guide to action. But when emotional responses are suppressed, you are interfering with the flow of information. It then becomes much more difficult to behave flexibly. Adapting to people and situations becomes a matter of using external guidelines or abstract concepts rather than drawing on internal information, leading to rigid behaviour. It also impedes the flow of information between your various internal systems, making it more difficult for them to adjust levels of biochemicals and maintain internal equilibrium.

Feelings are always both biological and social. As a feeling happens, there are physiological changes taking place in a person's nervous system, endocrine system and other systems, along with thoughts arising in the mind. If these thoughts are pushed away, an important source of regulatory feedback is lost. For example, when you suppress anger, your body and its various systems remain aroused and biochemically stimulated. But if you refuse to become aware of your anger and don't express it to the person who has offended you, you lose the opportunity to put something right that is wrong – and to settle the biochemical, muscular and autonomic responses that have already been triggered (Carroll 2001). It makes it difficult to regain equilibrium and to calm arousal back to a normal level.

The bodily arousal within all these different systems is the underlying basis for what we describe as a 'feeling' about something that is happening to us. But the thought 'I feel jealous' (or sad, delighted, uncomfortable) is the way we consciously articulate this complex activation of body systems, in social terms. What we do not usually become aware of when we name our feelings is the internal signalling that is occurring within the body outside of consciousness.

The biochemicals of emotion

Candace Pert is a scientist who did groundbreaking work throwing light on how emotions might affect the immune

system. An eccentric, warm character who linked the cool rational world of experimental science with New Age thinking about feelings, she suggested that the biochemical 'information substances' of our endocrine and neurotransmitter systems are the molecules of emotion. When we have feelings, we are experiencing some unique cocktail of hormone, neuropeptide and neurotransmitter activation.

Pert's unique discovery was that this is taking place all over the body, not just in the brain. Although the brain, and its emotion systems, is a focal point of neurotransmitter activity, many of the same biochemicals communicate all around the body. Serotonin, opioids and dopamine receptors are present in locations such as the heart, the gut and down the spine. She argued that this means that we feel feelings with our bodies and not just with our brains. We may even feel things in our immune system, which not only responds to signals from these biochemicals but also releases them. As Deepak Chopra, one of Pert's admirers, put it: 'If being happy, sad, thoughtful, excited and so on all require the production of neuropeptides – and neurotransmitters in our brain cells – then the immune cells must also be happy, sad, thoughtful, excited, too' (Chopra 1989: 67).

Pert showed that these molecules of emotion communicate with each other across various systems of the human organism. The body's communication systems run along many interconnecting lines: in the blood; in the lymph system; along the nerves. For example, the fight or flight molecules which speed us up and make us more alert are carried round the body by the sympathetic nerves. The immune signals are carried through the blood, so that many immune stations around the body are aware of 'distress signals' such as those activated by an infection. Moreover, the immune system communicates with the brain along the vagus nerve, and this allows us to be aware of what is going on in our body.

Not so long ago, the immune system was thought of as a separate, self-contained bodily defence system. But Robert Ader made a startling discovery in the mid-1970s: he found that the immune system could learn from past experience. In

one important experiment, Ader and Cohen established that the immune system has memory. Using rats, they had set up a mental association between an unpleasant drug and some pleasant sweetened water. The drugs made the rats feel sick and suppressed their immune systems. But they also gave the rats sweetened water every time they were given the drug. In this way, sweet water, feeling sick and an inner disabling of the immune system were linked in the rats' minds. Then, some time later, they did another experiment with the same rats. They found that all they had to do was to give the rats sweet water, and even without the active immune suppressive ingredient the rats' immune systems were suppressed. In effect, their expectations made it happen. The immune system inactivated itself when it remembered the taste of sweet water (Ader and Cohen 1981).

The immune system, then, has a history and a memory, just as other aspects of the self do. It has been called the 'body's brain' (Goleman 1996). Soon after this groundbreaking work, Ed Blalock made another important discovery – that the immune system could be affected by the hormones and neurotransmitters generated directly or indirectly by the brain (Blalock 1984). This meant that the brain could communicate directly with the immune system using neurotransmitters such as serotonin, or hormones such as cortisol. Whatever was going on in the individual's mind – current thoughts and feelings – could potentially trigger reactions of the immune system via the biochemicals that are triggered by extreme states of mind such as those occurring during situations of stress or depression. There are various regulatory systems involving our bodily chemistry which have an impact on the immune system – our autonomic nervous system and its neurotransmitters, as well as biochemicals such as prostaglandins and epinephrine which may also affect immune responses. But it is cortisol which seems to be the hormone that has the greatest impact on the immune system.

The effects of cortisol on the immune system are well documented (Cohen and Crnic 1982; Sternberg 2001). In essence, cortisol instructs the immune cells temporarily to slow down the immune response, allowing the body's energy

to be focused on the crisis in hand. As a temporary measure, this is useful. However, when the stress is chronic and doesn't get resolved quickly, as in severe relationship conflict or long-lasting grief, then the continued release of cortisol can have a serious impact on the immune system. It can stop the white blood cells from moving around the body. It kills off lymphocytes, including natural killer cells, and stops new ones from being produced. These processes may underlie the massively increased frequency of cancerous tumours in mice subjected to prolonged stress, compared to those who were not (Riley 1975; Visintainer et al. 1982). More recent evidence suggests that stress may have a similar effect on humans. A meta-analysis by Yoichi Chida and her colleagues at University College London found that stress-related psychosocial factors were associated with a higher incidence of cancer, as well as with poorer survival rates (Chida et al. 2008).

My mother experienced these kinds of stress before her illness developed (she lost her husband and home, and then a little later her lover died suddenly and unexpectedly) and no doubt would have experienced an increase in stress hormones. But because she was not in the habit of turning to other people for comfort, she didn't have an effective means of regulating her overwhelming distress. Instead, as always, she took to her bed, deliberately avoiding people when her feelings became too painful.

The immune system's capacity to deal with cancerous cells in particular is thought to rely strongly on 'Natural Killer' cells, which are the general thugs of the immune system. But the level of NK cells has been found to be low in those who lack social support or who are under acute psychological stress (Martin 1997: 238). This suggests that those whose emotional style is one of suppressing feelings rather than expressing them and regulating them with the help of others, may have worse immune function. They do not seek social support. As I have described, the willingness to confide in others that has been found to be an important factor in good health is lacking in people with insecure attachment histories, but particularly with the 'avoidant' style, which attempts to be so emotionally self-sufficient.

In this sense, the regulatory patterns that are established in early life may not only affect your psychological well-being and the development of the 'brain' of the brain's emotional systems in the prefrontal cortex, but may also affect the 'body's brain' – the immune system and stress response which are also shaped by emotional experience. How cruel it is that those who were less well cared for in babyhood may also have a greater likelihood of suffering physical illness in later life.

The case of Dennis Potter

An emotionally suppressed infancy does not, of course, tell us which illnesses the person will succumb to. The pathways are many, depending on genetic inheritance, exposure to viruses and individual ways of managing feelings. The writer Dennis Potter, author of the innovative series *The Singing Detective* and other powerful television dramas, suppressed his feelings with somewhat different results.

It is impossible to reconstruct the precise effects of an infancy in retrospect, but the circumstances of Potter's babyhood are suggestive. According to his biographer, Humphrey Carpenter (1999), Potter's father was dangerously ill at the time of his birth. It is not unreasonable to speculate that his mother must have been under stress and may have passed on her cortisol to him in the womb. This – along with any genetic tendency – may have predisposed him to being a sensitive baby. It is also possible that a mother who was tending to a sick husband may have been less available to her newborn baby than otherwise. Whether or not that was the case, Potter's mother became pregnant again when Dennis was still only 4 months old. He would barely have been walking when his mother had another baby to care for.

We cannot know exactly what kind of early relationship Dennis Potter had with his mother, but the evidence of later childhood does strongly suggest that he too did not grow up with a confidence in turning to others for emotional support. At the age of 10, he was taken by his mother to live in London with relatives, and was separated from his father. There he was sexually abused by the uncle with whom he had to share

a bed. It is telling that Potter did not express his horror to his mother. He justified his silence to his biographer on the grounds that he dared not tell her because 'it would be like throwing a bomb into the middle of everything that made me feel secure'. In other words, he did not see his mother as a person who would cope with the situation and who would help him to think about his feelings and to calm his distress. He felt he had to protect her from emotional arousal instead of expecting her protection and regulation. Instead he relied on her, as alexithymics do, simply to 'be there'. He got his feeling of security simply from her continued presence. As a result, he struggled to regulate the feelings this abuse aroused in him. He turned his distress inwards, blamed himself and felt 'totally invaded and swamped and warped for a while'. He stopped eating and explained this away to his mother by claiming to be homesick.

The person who learns in infancy to manage feelings by ignoring them can be thrown into crisis by demanding emotional events. Potter's next crisis came at a time when he was not happy with his work and was under pressure to work long hours to support his young family. He found himself compulsively visiting prostitutes to relieve his stress; whether through pleasure, or through power over others – both have biochemical effects. Again, he experienced disgust with his sexual 'pollution' but could not find a way to manage these complex feelings adequately with those he was close to. Instead, his chronic hypersensitivity to stress had an impact on his immune system and began to find expression in a physical form. He began to develop psoriatic arthropathy, a condition to which he was genetically predisposed. Potter believed that these attacks of skin shedding and joint inflammation were linked to his state of mind. Eventually, he put this into words in the mouth of Marlow, his best-known character in *The Singing Detective*, who said 'The temptation is to believe that the ills and poisons of the mind or the personality have somehow erupted straight out onto the skin.'

After his illness was diagnosed, Potter found a more satisfying life course by withdrawing from the demands of journalism into a more home-based life. He began writing

plays for television, enabling him to explore a range of controversial feelings at one remove from his own life. In particular, he expressed – in visceral, passionate writing – the anger that he was not able to express in his own life, despite being perceived by others as a presence conveying 'tense, coiled anger'. Potter himself recognised a connection between this unexpressed anger and his ill health: 'I believe that we choose our illnesses. I was always angry, and I have the feeling that the anger in me was turned inwards.'

Addictions and self-medication

Trying not to feel can take many forms. Potter was also a heavy drinker and a chain smoker, and addictions of these kinds are common in people who lack regulatory skills. These failures in self-care may have contributed to his early death from cancer at the age of 59.

Handicapped by insecure relationship patterns, which prevent them from drawing comfort from others or problem solving with other people, many people turn to alternative sources to make themselves feel better. Their choice of addiction may be influenced by their parents' preferences. If father was a heavy drinker, and the person grows up with alcohol around, it may feel natural to turn to alcohol to relieve mental pain. Genetic factors may also play a part in facilitating the addiction. If sweet food was a 'treat' in your family, then overeating chocolates and biscuits may be a natural response to an emptiness or inner emotional conflict.

The substance of choice is something that soothes and in effect medicates the physiological disturbance of emotional distress. For example, we know that depression often involves low levels of serotonin. This may be why some people, finding their feelings difficult to manage, crave carbohydrates and sweet things, which can help to release serotonin into the brain. Sugar also stimulates the release of beta-endorphin, which again can reduce pain, both physical and emotional. Experiments with mice have shown that mice who are separated from their mothers cry less if given sugar water. They also respond less to physical pain caused

by having their feet put on a hot plate, if given sugar water (Blass et al. 1986).

The person who chooses to self-medicate when feeling distress is attempting to restore some sort of internal equilibrium. But using substances such as food and drugs to relieve pain can lead to addiction. When you eat too many sweet things regularly, your beta-endorphin receptors close down, and then you need to eat more sweet things to achieve the same effect. Alcohol addiction works in a very similar way. Alcohol also releases beta-endorphin and alcoholics need to drink more to achieve the same pain relief.

The anorexic path

Surprisingly, not eating can also be as addictive a pathway as overeating or taking drugs. Like other addictions, it can become life threatening. Amongst patients with eating disorders, there is a high rate of attempted suicide (around 17 per cent (Butik et al. 2008)) as well as a tragically high death rate of approximately 5 per cent (Crow et al. 2009). Typically, this condition starts in adolescence or early adulthood with a diet to lose weight. As the diet progresses, the woman ignores messages from her body that it craves carbohydrates and moves into a phase of producing increased brain opioids which can make her feel high. Even though this phase of starvation makes her function at a very low level of activity and cuts her off from other people, she can then become addicted to the experience of starvation itself.

In the anorexic state, the woman finds some relief from feelings that she doesn't know how to manage. There is a numbing effect with the opioids. One patient wrote a letter to her parents from an anorexia clinic, saying:

> The truth of the matter is that we focus on food and weight so that we don't have to feel any emotions or feelings that might be uncomfortable, such as anger, sadness, anxiety or guilt. We have been conditioned from childhood to suppress these feelings for various reasons, such as that it is not lady-like to express them and that no-one wants to be around someone who is upset. (Abraham and Llewellyn-Jones 2001)

The case of Nina

Nina was a patient of mine whose early family experience is typical for the development of this particular addiction as a solution to regulatory difficulties. Her mother was a fitness enthusiast who ate sparingly and was concerned about maintaining a smart appearance. Nina, an only child, grew up as the focus of her parents' devotion; they adored her and hoped for great things from her, but did not have a happy relationship with each other. She was under pressure to meet their needs – and in particular, it seemed to me, to meet her mother's psychological needs. Nina tried to be a good girl, and tried in particular to succeed at the sports that her mother enjoyed. She was very scared of causing her mother any hurt, disappointment or feeling of abandonment. As a child, she felt she could not bear to stay overnight at a friend's house in case it would make her mother feel left out – she could not allow herself to have something good if her mother didn't have it. Over and over again, she complied with her parents' wishes to keep them happy – and perhaps, to avoid any hint of negative feeling which seemed to be so intolerable for this family.

In the process, Nina lost touch with her own wishes and her own feelings – in a sense, they got 'swallowed'. The family atmosphere was affectionate and even intense, yet the individuals within it did not clearly speak for themselves. Father would say what mother felt, while the mother would speak for Nina, and Nina would speak for her father, and so on. Outsiders to the family were regarded with some suspicion. This kind of family has been described as 'enmeshed' and Nina's personality often seemed to be merged with her mother's. Being the focus of her parents' lives may have had some value to her as a young child, but it certainly proved problematic as she approached adulthood. She had difficulty in growing up and separating from her parents because they needed her so much. How would they survive without her?

And how would she survive without them? She was terrified of the world, perhaps because she had so little ability to regulate herself. By adolescence, the pressure to regulate her own feelings and to engage with people outside the family was becoming much more intense. But the peculiarity of the anorexic family experience is that the child has learnt to cope with feelings by clinging on to her mother and remaining plugged in to her mother's psyche rather than manage them independently. As a teenager, Nina found that cutting out food was a way of preventing her own increasingly insistent feelings from surfacing. This method of suppressing feelings was a distorted way of regulating them by achieving a sense of emotional numbness and distance from them. However, as we worked on her problems, Nina began to eat more and she described to me how uncomfortable it was to become more aware of her feelings again.

One problem that emerged was that Nina's mother could not manage her own feelings and so had been unable to regulate Nina's states. Like Dennis Potter, Nina felt she couldn't tell her mother her problems because her mother might panic and overreact; her mother simply couldn't cope with, or 'contain', negative experience. Sometimes her mother would simply deny Nina's feelings. If Nina said she was lonely as her best friends had both moved away to another town, her mother would tell her 'You're not lonely, you have your family.' Her mother had difficulty in recognising Nina's true states. She attributed her own feelings to Nina. If the mother felt that a room was overheated, she would assume that Nina also must feel too hot.

Some research suggests that there may be a genetic predisposition to anorexia, which could be based in a tendency to emotional restraint or to other temperamental characteristics common in anorexics, such as compliance, perfectionism and worry (Woodside et al. 2002). But these characteristics could equally well be defined as a problem of regulating emotions. When you don't know how to manage difficult feelings, you avoid them. Lacking emotional confidence, you may become ambitious and perfectionist in an attempt to find self-esteem elsewhere. It may also be important to be perfect in every way so that you do not give

offence or upset the people on whom you depend. Ironically, however, when the anorexic behaviour has taken hold, the anorexic individual in the grip of his or her addiction causes enormous distress to parents and provokes intense conflict and upset.

The roots of regulation lie in babyhood and, as we have seen, the stress response is a central aspect of regulation. In anorexics, the stress response is hypersensitive. The level of CRF and cortisol is high, and their adrenal glands have an exaggerated response to ACTH. This tends to be the case even after recovery, so it is not just attributable to the effects of starvation, which can itself raise cortisol levels (Hoek et al. 1998). Raised levels of CRF are probably the source of the common feelings of depression in anorexic individuals. The same high levels of CRF are also found in babies who are separated from their mothering person, and in adult depressives. It may indicate a basic fear about survival with parents who don't create a feeling of safety. Although they are constantly in the presence of the mother, they do not necessarily feel safely cared for by her.

Babies such as Nina are not genuinely allowed to have their own feelings. They come to believe that they will upset their parents if they have needs and feelings that the parent doesn't want them to have. Their parents need a child who is an extension of themselves or a source of comfort to them. This sends the Ninas of this world the implicit message that they must not become a separate individual with their own needs and feelings. As Henry Krystal put it, a daughter such as Nina does not 'own her own soul' (Krystal 1988). The hidden message is that her feelings do not really matter and are not to be taken seriously. The fact that feelings have so often been mislabelled makes it difficult for such a child to know her own feelings or to trust them. She has the feelings other people expect her to have. Feelings don't get accurately identified and differentiated into different shades of meaning that can be talked about. They remain rather vague, bodily sensations.

Drew Westen describes a range of research studies that have been done with anorexics using different tests and scales. The strongest and clearest finding of all was that a

'difficulty in recognising and accurately responding to emotional states and certain visceral sensations is a central deficit in eating disorder patients'. Severe anorexics typically have a 'constricted/overcontrolled' personality, and in particular have a difficulty in acknowledging or expressing anger or expressing their own wishes (Westen and Harnden-Fischer 2001; Westen 2000).

A susceptibility to illness and addictions is rooted in this estrangement from one's own body and in the resulting difficulties in regulating feelings. In particular, the attempt to escape from feelings has its origin in a babyhood in which the baby's feelings have not been identified and responded to in a contingent way. Babies in this situation can't take their own regulation for granted. They are confronted prematurely with their own raw needs, lacking the ability to meet them by themselves. This seems to leave a sort of unfinished business for the baby. As he or she grows up, the adult still longs to be properly taken care of, to be understood without words, to have all wishes fulfilled by magic, and to have needs anticipated without saying anything. People in this state are ultimately seeking the baby's experience of perfect unity and merger with an attuned mother.

As adults, they are prone to remain highly dependent on others, hoping that the magical other will make them feel all right. Some actively search for the perfect partner and go from one to the next in pursuit of Ms or Mr Right, in an endless quest exemplified by many film stars with their multiple marriages. Other more 'avoidant' personalities, who are afraid of depending on others who may abandon them, choose to persist in a low-key, often unsatisfactory relationship, making few demands in order to avoid abandonment.

These distortions arise when there has not been enough positive experience of dependence in infancy. Without an actively responsive and sensitive mothering experience, the baby can't identify with the parental attitude and apply it to him or herself. It isn't possible to generate the attitude of self-care and awareness of one's own feelings if someone else hasn't first done it for you. (That is why self-help books are of little use.) You need to have an experience with someone first – then you can reproduce it.

If the early relationship has not conveyed an acceptance of the full range of feelings, including 'negative' ones such as anger and sadness, then these feelings will be hard to tolerate and experience fully. If parents have not been able to convey confidence in handling such feelings, then the skills to manage them will very likely be lacking in their offspring. But relationships that steer clear of such feelings are brittle and lack resilience. They cannot flexibly respond to the ups and downs of experience, and provide a core feeling that relationships can be disrupted and then repaired – that attunement can be lost but it can also be restored.

Attempting to be too 'nice' or 'strong' is a dangerous course. It cuts off the flow of feelings which is essential for physical as well as mental health. As Candace Pert has suggested, we need this flow for the system to function well. Our feelings are a vital signalling system, both within each body and in its communications with others. Feelings are a source of useful information to which we should pay attention, using our biochemical signals to guide us in our more conscious negotiations with others. Feelings then do not have to be blocked or ignored or numbed. They can take their proper place as the core of the self, a self that can be elaborated in words.