

# Self-regulation: The Ways of Nature

Kathrin Stauffer

I started my professional life by studying chemistry and then biochemistry, and worked as a postdoctoral research biochemist for a number of years before I realized that I was in the wrong profession, and then retrained at the Chiron Centre for Body Psychotherapy. This was a big change at the time, and it is only recently that I have found biological sciences and psychotherapy appearing to move closer to each other. So I want to try to write something about how I think my knowledge of biology has influenced the way I work as a psychotherapist. This is a question that returns to me regularly. I have been teaching a training module called 'Holistic Anatomy and Physiology' for body psychotherapists for many years, and I like to try to give my students some reasons why they should be studying this subject. I do not find it easy to give such reasons. I have written elsewhere about what I think biology does *not* contribute to psychotherapy (Stauffer, 2008, 2009 [in press]). But that does not mean that biology cannot influence psychotherapeutic work, and I want to try to communicate a little of *how* I believe it shapes what I do.

## Patterns of movement

I think the strongest influence comes from a sense, acquired in many years of biological study, of how 'nature does things'. By this I mean an image of how molecular and cellular processes might be happening, the sorts of processes that underlie all of our physiological functioning in all our organs (including the brain).<sup>1</sup> If I were to put this into more colloquial language, I would use words such as having a sense of the rhythm, and of the patterns, and of the flow in living organisms.

One of the first things I learned in biochemistry was that the chemical processes that go on in living organisms are nothing like the chemical reactions that take place in test tubes. In a test tube, you can have a process that happens in a straightforward fashion, changing substance A into substance B, so that

substance A is destroyed and substance B is created. On the other hand, a living system is characterized by its sheer dynamism. Everything is constantly changing, every substance is constantly being created and destroyed at the same time; every substance is constantly turning into every other substance. Moreover, all these chemical processes that are all happening at the same time all influence each other. The sheer complexity of so many chemical voices all speaking at once is quite overwhelming.

So one of the ideas that biophysicists have come up with is to describe the patterns of chemical reactions rather than the individual reactions themselves. And it is here that we find phenomena that appear more familiar to our intuitive sense of life processes. Specifically, we find the concept of a steady state, a sort of balance that organisms aim to maintain. This state is at the same time very precarious and vulnerable, and also incredibly tough and stable. Seen in a certain light it seems incredibly brittle; seen in another light it is very resilient. Have you ever learnt how to ride a bicycle? It is a bit like that: before you have learnt it, it seems absolutely impossible that you could ever balance on this contraption. Once you have got the hang of it, it seems hard to imagine that you ever fell down.

The metaphor of riding a bicycle is useful in other respects. If you were to investigate the uprightness of a moving bicycle, you would find that if you look closely, it wobbles and sways constantly and yet rights itself. It is in dynamic equilibrium. Bicycle riders can try it for themselves. If you push gently on the handlebars, as if to turn, the bicycle leans and the handlebars right themselves. Similarly, if you lean slightly the handlebars turn and the bike rights itself. This is dynamic equilibrium. If the bike is stationary any slight disturbance causes the bike to fall over. It does not have static equilibrium, only dynamic equilibrium. In just this way life is in a stable, but not still, equilibrium.

We find that keeping our balance in life, just like keeping it on a bicycle, is a lot easier as long as we are in motion. The balance of the bicycle is not based on static stability, but on our ability to keep making small adjustments to ongoing movements. For life, this means on the one hand literal, bodily movement. A good case can be made for saying that the brain's main preoccupation is to coordinate and regulate movements in the body, as the bulk of it appears to serve this purpose. Assuming that the simultaneous activity of as much of our brains as possible correlates with optimal functioning of our minds, then we should expect to be less neurotic and more creative if we are moving about. Indeed, many people find that they think best, and get least anxious or depressed, when doing things like pacing up and down or ironing the laundry. On the other hand, adjusting to ongoing movements means also more emotional and spiritual movement in the sense of taking an ever-changing world into account. In fact, life is so tough precisely through its incredible ability to keep recovering

from disturbances and to remember and recover a steady state. This ability is called the ability to self-regulate, and it operates on all levels of life, from the smallest sub-cellular compartment to the emotional, mental, and spiritual equilibrium of a person (and indeed of groups of people).

Unlike a bicycle, life has a choice of many different steady states, some very similar to each other, some very different, and it can move from one steady state through a bit of wobbling to another steady state. This means that when our balance is disturbed a little, we will return to the previous steady state. When our balance is disturbed more, there comes a point where we cannot find the old steady state any more. We may well, at such times, become rather chaotic. This chaos will eventually find a new steady state. This could correspond to a 'lateral' shift, or it could amount to a falling back on a regressed and more primitive level of functioning, or it could represent a reorganization on a 'higher' level, which we can call a real paradigm shift.

Let me try to find an example for what I mean by this: if I lose an attachment relationship, I might move on to another, similar one. That would be the more lateral shift. Or I might refuse to accept the loss and start stalking my ex-partner. This would be a destructive reorganization that, in the longer run, makes things worse. Or I might manage to learn to rely more on my internalized attachments and become less anxiously reliant on other people, and more able to form relationships that are not ruled so much by my anxious attachment needs. That would represent the reorganization on a higher level, and I would certainly experience it as a major paradigm shift.

On a molecular and cellular level, it is generally accepted that biophysicists understand (or at least partly understand) how cells and molecules manage to 'remember' a steady state that they need to return to, and how they achieve this. On a whole-person level, and particularly on the level of individual subjective experience on which we try to understand ourselves and our clients, such a steady state would feel like a resting state, a state of being all right and relaxed and at peace with ourselves and the world. And we all know that the process of losing our balance happens all the time, and that regaining our balance corresponds to what we call self-soothing, or emotional self-regulation. We take it for granted that every human being tries constantly to attain this state of all right-ness, is constantly trying to self-regulate.

### **Self-regulation as a pattern of movement**

The concept of self-regulation, or affect regulation, is, of course, familiar to psychotherapists on the whole (Trevarthen, 1993; Gerhardt, 2004). Many psychotherapeutic modalities have described models of such self-regulatory processes. As it happens, body psychotherapy has always made the assumption

that these processes are embodied, biologically based, involve the whole body and mind, and are accessible to everyday experience.

In its simplest form, a process of self-regulation is a cycle, and it is a cycle that goes from rest to charge to expression to winding down and back to rest (Boyesen, 1980). Such a cycle depicts our ability to self-regulate emotionally: feelings can arise, change in some way (whether through actual expression in words or action, or in a more internal process of transformation), then recede. Such events are both physical and observable: for example, when a charge arises in us, we may turn a bit more pink or red and feel heat in the head, or our eyes may get a bit moist as a sign of an upward movement of fluid.

I find (and many colleagues agree) that good psychotherapy sessions often follow this kind of pattern: there is a beginning, a settling in and making contact, perhaps the client reports what has happened in their life, and gradually a topic starts to emerge that draws us both in, that we start to explore more. As we do this, there is a certain build-up of tension, perhaps a sharpening of the conflict that we are talking about, and this continues to a point where something shifts. This could be an insight that leads my client to breathe a sigh of relief, or a sense that I have heard and understood something that they have been trying to let me know for a long time, or just a slightly different way of being with their conflict that becomes possible. And after such a point, the session starts to wind down, to relax, there is a sense that whatever was going to happen has happened.

I have worked with clients who started therapy almost completely unable to self-regulate in this sense. They were firmly stuck in particular feeling states, often terror masked by frozen compliance, and no movement was possible. Moreover, they had no awareness that movement of their feelings might be a good thing and help them feel better. With these clients I have spent many sessions focused on just establishing some sort of 'emotional shape' to sessions, a little movement so that something can get a little worse and then a little better. Over time, these clients have become more able to allow this type of internal movement and thus to allow for things to change. I sometimes call it building up emotional muscle, and I find that it parallels their growing ability to contain stronger feelings. But the basic trust in our joint ability to return to a state of all right-ness had to be established first.

### **The importance of self-regulatory movement**

It can be argued that emotional self-regulation is one of the primary tasks of a healthy self. Biologically, these abilities are dependent on an ability of the whole organism to be displaced away from a state of equilibrium and subsequently to return to equilibrium. So this repeats my theme that life rests in a

very fundamental way on the process of being displaced away from, and subsequently returning back towards, equilibrium or steady state.

Let me quote one of my favourite examples from biology to illustrate this: we all know that our bodies are made up of cells, and of spaces between cells. It appears that one of the most important features of a cell is that it has an inside and an outside. The division is not only a spatial one, but also a very distinct chemical and physical one. What we could call the milieu inside or outside a cell is totally different. It turns out that a cell will spend its last energy on maintaining this distinction between in and out. So it is clearly of vital importance for the cell to maintain its integrity.

Now, the interesting thing here is that the partition between the inside and outside of a cell (called the plasma membrane), which has the job of maintaining this vital separation, is leaky in the sense that it allows sodium, calcium, and potassium ions to pass in and out of the cell through channels in the membrane. The plasma membrane is semi-permeable. This semi-permeability allows the cell to use things like calcium ions for signalling and to drive calcium dependent enzymes and contractile proteins. The cell has to constantly work to pump out the calcium ions once their job is done, at the expense of considerable amounts of energy. It is a constant chore that cannot be left undone. It forms part of what I would call the 'ticking over' of a living being. Life cannot happen in cells that are too tightly boundaried. I think it is a lovely lesson in how nature 'does' life: the constant pumping out of leaks is more efficient than tight seals.

Body psychotherapy emphasizes the importance of what is called the autonomic nervous system in mediating these emotional processes. The autonomic nervous system has two branches that operate roughly like a seesaw: the sympathetic nervous system generally mediates processes of arousal and shifts the awareness of a person upwards and outwards in what has become known as the 'fight-or-flight' response, while the parasympathetic nervous system generally mediates processes of calming down and shifts the awareness downwards and inwards. In healthy self-regulation, these two operate alternately and together mediate the self-regulatory cycle. Incidentally, the model allows for states of shock and trauma, and comes up with valid treatment strategies for traumatized clients.

Again, what makes this concept so very clinically useful is that it is accessible to direct experience. I can observe the signs of autonomic arousal on my clients: the little changes in the colour of their faces and in the moisture of their eyes; their breathing may shift a little upwards or downwards, or become a little faster or slower; their posture becomes more animated or more still; or a stomach may rumble in a little burst of relief. If I am not sure of where my client is, I can keep tabs on my own autonomic state by checking my own heartbeat, breathing, or temperature in my extremities. In addition, I can teach my clients to use

body awareness to track their own states of anxiety or hyperarousal (Levine, 1997; Rothschild, 2000), and many clients find this useful not only because it means that I am taking their anxiety seriously ('it must be real if it is a physical thing'), but also because it will eventually make it possible for them to regulate their anxiety levels more easily and effectively.

Keeping an eye on clients' patterns of self-regulation is useful for many other reasons. One is that every person tends to have habitual 'shapes' of self-regulatory cycles that form the basic patterns of emotional self-regulation. So, somebody may be constantly stuck at the 'Action' point in the cycle and not know how to wind down; another person may have a tendency to feel uncomfortable if a strong charge starts to build up, and quickly return to resting before anything substantial has a chance of happening; yet another person may not really feel themselves unless they are quite charged, and so stop themselves from expressing anything. In general, a person's habitual pattern of self-regulation reflects their habitual defence system, or (in Wilhelm Reich's [1972; see also Johnson, 1994] terms) their character.

Incidentally, what attachment-based psychotherapists have learnt to appreciate through the research into affect regulation in infants is that while the capacity to self-regulate is an innate ability of every human being, *how* we self-regulate is learnt in the early days of our life, and learnt from our primary care-givers (Schoore, 1994). The basic pattern seems to be that we learn by mirroring, by imitating. In the first weeks and months of life, we learn the habits of self-regulation that may be with us throughout life, and they appear to be laid down in the brain's habitual pathways and connections. As infants and babies, we learn what our care-givers are able to show us. Deficits and dysfunctions that our care-givers have in coping with life thus get passed on straight to the next generation.

It seems important to appreciate that the ability to self-regulate appears to be inborn, but that the pathways that are used for it are learnt. If I try to illustrate what this means with an example, I could say that while a baby is capable of coping with separation anxiety if left to its own devices, the way it will do it by itself is not inborn and will depend on what it sees its mother do, and how the mother helps or hinders the baby's feelings to be processed. So, one baby might cope by cutting off from affectionate bonds very soon, while another might cope by remaining more available for the mother to come back into contact. Both are ways of affect regulation, but they differ in what the baby has managed to learn.

It turns out that our habits of affect regulation are pretty central to our identity, to the way we experience ourselves in the world. My sense of myself becomes stronger to the degree that I am able to let myself experience the little movements and adjustments that I constantly do and that take me away from equilibrium and then back towards it. Some of this may be related to the fact

that my experience of my body is more vivid if I sense the movements that are constantly happening, whereas if I keep completely still, it is much harder to be connected to my physical existence. In addition, my habits of self-regulation are the very basic patterns of being able to experience, express, contain, and soothe strong feelings. In other words, who I feel myself to be is closely related to what I do with what the world throws at me.

The development of the capacity for self-soothing and a knowledge of, and trust in, my own ability to make things better form one of the foundations of a stable sense of self. It gives me a confidence in my ability to cope with life, and also a sense of time in the knowledge that my feelings change by both arising and then subsiding again. Both of these things are major contributors to what has been called 'inner space' and what I would call an important aspect of emotional maturity.

Since we live in an ever-changing world that will just not stand still however much we might want it to, it is important to have the ability to go with the changes. How well we are able to do this will determine some very central aspects of how full a life we are able to live. This includes our resilience to life's stresses; our ability to relate to others by containing their feelings and allowing them to contain ours; and our potential to take risks and thus be successful in life. It is almost impossible to think of an area of life where our ability to regulate affect does not have a major impact. It will also impact on our potential to develop further and grow as adults, for instance by influencing how well we are able to make use of psychotherapy.

From my picture of life as an ever-changing dance of all possible movements, it emerges that there would have to be a process of evolution, or development. By this I mean that if everything were possible, I would quickly make a selection of processes that actually work, that make it better for me. This implies that any neurosis arising from an impingement by the world on an organism's self-regulatory process would, given some time, sort itself out, and any dysfunctional behaviour would be replaced with more functional and mature behaviour. As a consequence, I have to assume that every neurosis that persists (and results in someone seeking psychotherapy) is not only the result of a past event that has somehow become 'stuck' in the person, but is also, and perhaps more importantly, the result of an active process that maintains it, now, in the present. It becomes my task as a therapist to try to engage with this process that maintains neurosis, more than to engage with whatever event set it up in the first place. I mention this because I often miss an appreciation of it, particularly in the field of humanistic psychotherapy, and it does seem to me that the humanistic movement has, on the whole, been rather naïve in this respect.

I want to go just one step further here and make a plea for saying that life itself is nothing so much as adjusting to change, as striving to keep returning to equilibrium. It is not happy ever after that makes a good life, but the ability

to keep seeking happy ever after. It is not exactly easy to bear this in mind: it goes against all my narcissistic fantasies of how life must be like a fairy tale and have an endpoint where everything has come out right. But I find that the more I am able to allow for the experience of change and adjustment to change, the more I am able to rest in myself and feel safe in the world. It is a safety that does not, in the end, rely on nothing bad happening, but on confidence in my ability to deal with whatever happens. In my body, it feels rather as though I have finally got on my bicycle and I am on the road.

### Note

1. I am aware that this is largely speculation, based on the assumption that we are 'fractally' organized. One of the organizing principles of such an organism would be that what operates on a lower level will operate on the higher levels (but not vice versa), so that mechanisms that act in a cell could be found to operate also on the level of the whole person. I would not be surprised to find that this assumption is not entirely correct, but I would expect it to be not entirely wrong either.

### References

- Boyesen, G. (Ed.) (1980). *Collected Papers on Biodynamic Psychology*. London: Biodynamic Psychology Publications.
- Carroll, R. (2009). Self-regulation – an evolving concept at the heart of body psychotherapy. In: L. Hartley (Ed.), *Contemporary Body Psychotherapy: The Chiron Approach* (pp. 89–105). (In press).
- Gerhardt, S. (2004). *Why Love Matters*. Hove: Routledge.
- Johnson, S. (1994). *Character Styles*. New York: W. W. Norton.
- Levine, P. A. (1997). *Waking the Tiger*. Berkeley, CA: North Atlantic Books.
- Reich, W. (1972) [1933]. *Character Analysis*. New York: Noonday Press.
- Rothschild, B. (2000). *The Body Remembers*. New York: W. W. Norton.
- Schore, A. N. (1994). *Affect Regulation and the Origin of the Self*. Hillsdale, NJ: Lawrence Erlbaum.
- Stauffer, K. A. (2008). Can neuroscience help to make psychotherapy more acceptable? *ATTACHMENT: New Directions in Psychotherapy and Relational Psychoanalysis*, 2: 225–229.
- Stauffer, K. A. (2009). The use of neuroscience in body psychotherapy: theoretical and clinically relevant aspects. In: L. Hartley (Ed.), *Contemporary Body Psychotherapy: The Chiron Approach* (pp. 138–150). (In press).
- Trevarthen, C. (1993). The self born in intersubjectivity: the psychology of an infant communicating. In U. Neisser (Ed.), *The Perceived Self: Ecological and Interpersonal Sources of Self-knowledge*. New York: Cambridge University Press.