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Thanks to Annie Sturgeon and Michael Ross for their helpful comments and proof reading of this paper.

Preamble

In Part I of this essay we look at some of the dynamics that both help and hinder affect regulation in terms of the Autonomic Nervous System, the Polyvagal Theory [Porges 2011], our Seven Primary Process Emotions [Panksepp 1998], and childhood experiences. In Part II, based on these dynamics, we focus in particular on Pat Ogden's concept of the Window of Affect Tolerance and Well Being [Ogden 2009]. Part I may feel a bit heavy, but it is hoped that this background will facilitate understanding for the more therapeutically and human orientated Part II.

A note on notation:

The literature over the last few decades has been somewhat confusing with regard to the terminology of the well known flight / fight / freeze response. In this article we will be broadly following the notation of Bracha [Bracha 2004] and attempt to integrate this with the models of Panksepp [Panksepp 1998] and Porges' Polyvagal Theory [Porges 2011].

When first confronted with danger, mammals activate the SNS system and the first [neo-cortical] conscious response, as described by ethologists¹, is to briefly FreezE: to "stop, look and listen"² [Bracha 2004]. Note that this terminology is different from that usually used, where Freeze covers, in effect, what here will be described under Fright and Faint. If the situation thus assessed (i.e. the "stop, look and listen") confirms there is real danger, various options are available, such as: Flight where this is possible; when not possible, Fight may be the appropriate adaptive response; if neither Flight nor Fight are possible, the remaining options include Freeze (not in the FreezE sense) or Faint. Note that this meaning of Freeze is different from the one of ethologists just mentioned: in an attempt to avoid confusion, in this article the Ethologist's use will be notated as FreezE.

This "stop, look and listen" [FreezE] perspective of Ethologists observing animals in the wild is a valid description in its own terms; it is a helpful perspective in that it is what we consciously tend to assume is the case – even though LeDoux's work shows that unconscious processes are set in motion before we become conscious of danger³ [LeDoux 1999]. In this paper we will broadly follow the notation:

- FreezE of "Stop, look, listen" [i.e. ethologists terminology – Bracha 2004];
- Flight usually associated with FEAR [Panksepp 1999];
- Fight usually associated with RAGE [Panksepp 1999];
- Fright [tonic immobility⁴] }
- Faint [tonic immobility] } *Both at times termed Freeze or Freezing* – [e.g. Porges 2011]

¹ Ethologists: those who study animals in the wild – i.e. in their natural habitats. ["The study of the behaviour of animals in their normal environment" CED 2011].

² Ogden describes this in terms of "alert immobility" (Ogden 2009 p 208); see Part II.

³ i.e. From the neuro-physiological perspective, the flight response is activated before we become conscious of any danger [LeDoux 1999; and see B10 on this website]

⁴ It may be helpful here to add an extensive footnote from Bracha.

Tonic immobility was referred to as "playing dead" in the early literature. In the post traumatic stress disorder (PTSD) literature tonic immobility has been referred to as peritraumatic "panic-like" symptoms. A widely used European term for tonic immobility, which may be more specific, is "fright." The French term is "effroi." [Vaiva 2003A; 2003B]; Fright is closest to the German (and Kraepelinian) concept of "schreck" as in "schreckneurosen." [Kraepelin 1990] Unfortunately, in child psychology, fright (tonic immobility, schreck, effroi) has also been referred to as "freezing." This atypical use of the term "freezing" to denote "fright" has created much confusion (especially since the ethological term closely resembles the meaning of "freeze" in military and police parlance).

[Bracha 2004 p680]

PART I: AFFECT REGULATION IN CHILDHOOD AND DYSFUNCTIONAL PROCEDURAL LEARNED TENDENCIES

1. Neuroception – A subconscious system for detecting Threat and Safety [Porges 2011]

1.1 General Introduction

Health and Well-Being depend, amongst other things, on a delicate interplay between the various components of our Autonomic Nervous System [ANS]. In order to survive and live, we have evolved to have neural systems that can distinguish between danger and safety. As humans, we share aspects of our nervous system with both vertebrates and mammals. In danger, we may flee or fight: that is, our Sympathetic Nervous System [SNS] is activated.

Immobilisation with FEAR

However, in extreme and life threatening situations (i.e. extreme fright), we may become immobile as the unmyelinated (vertebral) vagal system shuts down / down regulates our physiology: for example, slowing of the heart, slowing of respiration, and reduction of blood pressure. This may result in total immobility if we faint; while such total immobility in reptiles was often adaptive, in humans it is problematic as it can lead to brain anoxia. [Reptiles' brains are far less sensitive to reductions in oxygen perfusion than those of primates / humans.]

Social Engagement with Safety

During evolution, mammals – and humans in particular – developed pro-social systems (involving Social Engagement) which utilise the newer myelinated vagal systems⁵ [Porges 2011]; these pro-social systems come into operation in situations that are perceived (consciously and unconsciously) to be safe.

Immobilisation without FEAR

Finally, humans also have evolved to use the (primitive) reptilian unmyelinated vagal [PSNS] immobility system⁶ in a modified way – in the context of feeling safe⁷ – to facilitate the following:

- Childbirth;
- Nursing (mothers – i.e. breast feeding); and the origins of these:
- Physical Intimacy; this can be particularly the case for women in love making becoming relatively immobile and at the same time this is / can be associated with Social Engagement [myelinated vagal] for both partners.

Such immobilisation “raises our pain threshold” [Porges 2012 p 14]; of great help in, for example, childbirth.

The ability of mammals and humans to distinguish between danger and safety is mediated by the various autonomic systems described above; much or most of this is at an unconscious⁸ / preconscious level – and Porges uses the term neuroception for these dynamics. “I have coined the term *neuroception* to describe how neural circuits distinguish whether situations or people are safe, dangerous, or life threatening” [Porges 2011 p 11].

Social engagement, it is important to emphasise, can only really occur when our (unconscious) neuroception has assessed that the situation we are in is safe. Porges comments:

⁵ i.e. part of the Para Sympathetic Nervous System [PSNS]; myelinated nerves conduct impulse much more quickly than (the older) unmyelinated nerves.

⁶ i.e. that originally evolved in extreme danger as the Fright and Faint response in reptiles [see page 3].

⁷ i.e. not in the life threatening situations already described.

⁸ “Independent of conscious awareness, the nervous system evaluates risk in the environment and regulates the expression of adaptive behaviour to match the neuroception of an environment that is safe, dangerous, or life threatening” [Porges 2011 p 17].

- A neuroception of safety is necessary before social engagement behaviours can occur. These behaviours are accompanied by the benefits of physiological states, associated with social support.
- Social behaviours associated with nursing, reproduction, and the formation of strong pair bonds requires immobilisation without fear.
- Oxytocin, a neuropeptide involved in the formation of social bonds, make immobilisation without fear possible by blocking defensive freezing behaviours.

Porges 2011 from p 17

[numbers replace by bullet points]

The dynamics of the Social Engagement that can occur when we are feeling safe will be discussed in the next section [i.e. Section 2 – for example, Figure 2].

Note the role of oxytocin in the quote above from Porges. Oxytocin, per se, acts as an antidote to FEAR and RAGE circuits [Panksepp 1998; see also B3 Part II on this website].

1.2 Appropriate responses to Safety and Danger in terms of the Autonomic Nervous System

From the perspective of human interactions with our environment, it is helpful to look at some of the above dynamics in the reverse order from that in which they developed in terms of evolution, starting with safety. As already indicated, the neuroception of safety or danger is – initially at least – modulated through unconscious, sub-cortical, dynamics.

Type of Neuroception	Approach or Withdrawal behaviour	Autonomic System activated
I. Neuroception of Safety	1A: Social Engagement – general	Myelinated Vagal system fosters positive human communication through facial expression, tone of voice, gestures etc [See Figure 3] <ul style="list-style-type: none"> • Also: formation of strong pair bonds
	1B: Intimate Social Engagement <ul style="list-style-type: none"> • Immobility without fear 	Un-myelinated ⁹ Vagal System resulting in immobility without fear for: <ul style="list-style-type: none"> • Sexual intimacy [especially in females]; and formation of strong pair bonds [via oxytocin¹⁰]. • Giving birth; • Nursing mothers.
II. Neuroception of Danger	2A: Fear resulting in Flight [FEAR]	SNS No positive Social Engagement [See Figure 2]
	2B: Anger resulting in Fight [RAGE]	SNS No positive Social Engagement [See Figure 2]
III. Neuroception of overwhelming Danger [Life Threat]	3A: Fright <ul style="list-style-type: none"> • Immobility with FEAR 	Unmyelinated vagus
	3B: Faint <ul style="list-style-type: none"> • Immobility beyond FEAR 	Unmyelinated vagus

Figure 1

Neuroception and Resultant Behaviours– *extrapolated from Porges 2011 & Panksepp 1998*

⁹ In evolutionary terms thought to have been co-opted from the reptilian unmyelinated system for specific intimate social engagement activities

¹⁰ Note that oxytocin, which is released in both women and men during love making, is also associated with what Porges calls the “monogamy switch” – which may be activated where the couple remain together for prolonged post-coital periods [Porges 2011 p 183-185]

1.3 Children, neuroception, and Well Being

As children develop, it is crucial that they develop an appropriate neuro-physiology that can distinguish between real danger and true safety; otherwise, disturbances in affect regulation and Well-Being may occur.

Social engagement and defence behaviours may be adaptive or maladaptive, depending on the level of risk that is present in the environment. From a clinical perspective, the defining feature of psychopathology may include either a person's inability to inhibit defence systems in a safe environment or the inability to activate defence systems in a risky environment – or both. Only in a safe environment is it adaptive and appropriate to simultaneously inhibit defence systems and exhibit positive social engagement behaviour. Faulty neuroception – that is, an inaccurate assessment of the safety or danger of a situation – might contribute to the maladaptive physiological reactivity and expression of defensive behaviours associated with specific psychiatric disorders.

Porges 2011 p 12-13

These underlying concepts will help us to understand what follows in this essay. [A more detailed review of Porges' work can be found on this website – see A7 & A8.] The part played by neuroception in terms of the ANS are closely inter-connected with our primary process emotions [Panksepp 1998; Panksepp & Biven 2012], and it is to these that we will now turn.

2. Stressors, traumas, and sub-cortical responses

2.1 Introduction

Panksepp has described seven sub-cortical primary process emotions that we share with other mammals¹¹ (Panksepp 1998). These are associated with primary, affective consciousness (Panksepp & Biven 2012 p 13).

Stressors in childhood and adulthood can activate several of these primary process emotions¹² [also called Emotional Operating Neuro Circuits or Systems – EONS] causing great distress and Affect Dysregulation. It is probably true to say that psychotherapy during the last few decades has moved from the so called “talking cure” towards focusing on affect regulation, which has been termed “affect communicating cure” [Ogden 2009 p 204]. Affect Dysregulation is certainly a major component of childhood traumas, dysfunctional families, and adult distress [Schoore 2003A; 2003B; 2003C; 2012].

2.2 Adaptive learning in early childhood can become dysfunctional later on and in adult life

Several of our primary process emotions (EONS) are activated when we are subjected to danger / stressors; this is clearly an adaptive response. However, if children are subjected to repeated / recurrent stressors (e.g. an irritable violent parent), these responses can become learned and potentially maladaptive – especially when they are re-activated later in life.

Some forms of learning are described as procedural; that is, we learn a procedure such a riding a bicycle; once learned, these are generally not forgotten – even after some decades [Ogden 2009 p 205]. If one of our parents is abusive, this behaviour pattern will result in activation at the time of, for example, our FEAR circuits. The behaviour of the parent is, in effect, an unconditional stimulus¹³ which produces the unconditional response in us – i.e. FEAR; it could also be RAGE. This may result in us becoming chronically

¹¹ These are: SEEKING; FEAR; RAGE; PANIC /GRIEF [from primordial Separation Anxiety]; LUST [Sexually related circuits]; CARE and PLAY [see B3 Part I and II for further details]

¹² Such as: FEAR; RAGE; Separation Distress /PANIC.

¹³ Pavlov's original terms, correctly translated, were conditional & unconditional [Ridley 2004; p 704]; and not conditioned & unconditioned; the correct Pavlovian notation will be used in this article.

tense in childhood because of the mere presence of the abusive parent – even when he or she is not being abusive. Their mere presence has now been paired [in neuro-physiological terms] with the abusive behaviour and so has formed a conditional stimulus which then produces in us a conditional response – of chronic tension. In this case, the chronic tension is actually a manifestation of our sub-cortical FEAR circuits¹⁴. It is unlikely that these can be resolved by pure “talking therapies”. Furthermore, in adult life we may become tense simply in the presence of someone who resembles such an abusive parent.

In this scenario, as we grow up we are likely to develop “trauma related tendencies” in which our FEAR / RAGE circuits are activated¹⁵ – in situations where in reality there is no danger; the response now is clearly no longer adaptive. This will mean that it is very difficult to develop and make friends – as our Social Engagement systems are switched off by FEAR / RAGE.

2.3 FEAR and RAGE circuits deactivate our Social Engagement – and CARE – circuits

FEAR and RAGE circuits are inter-related to the overall dynamics of the SNS, and when activated¹⁶ these tend to inhibit neo-cortical cognitive processes. At the same time, they down-regulate / switch off our myelinated vagal system that is crucial to Social Engagement (Porges 2011). In these circumstance, it can become more or less impossible for the child living in a threatening environment to develop their own Social Engagement skills; this will result in a poverty of childhood (and essential human) development – as illustrated in Figure 2.

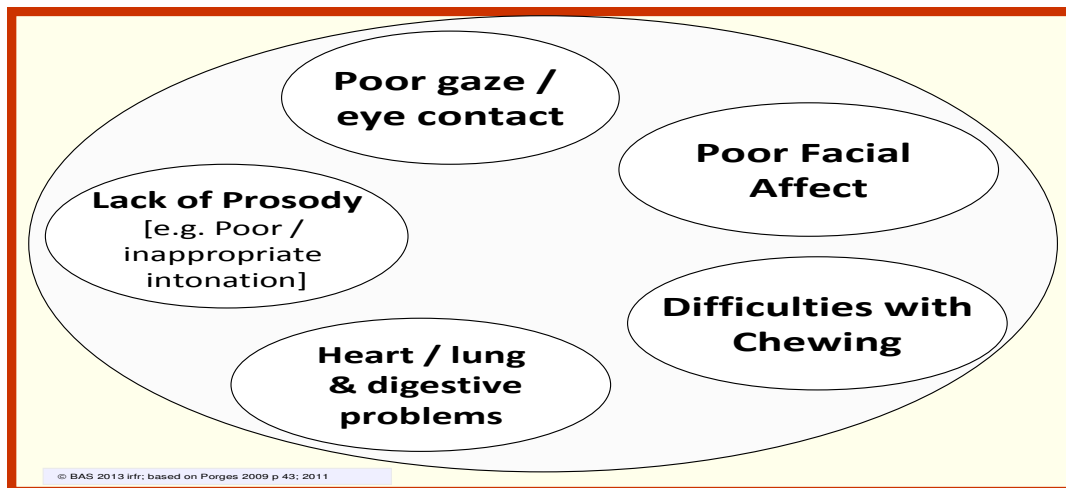


Figure 2

Examples of some of the characteristics resulting from lack of activation of the Social Engagement System in childhood

[Adapted from Porges 2009 pp 42-43; 2011 pp 14-15]

Comments on Figure 2:

- Lack of Social Engagement is revealed in, for example, drooping eyelids, loss of voice inflection, loss of positive facial affect, reduced ability to distinguish human voice from background noise, and reduced sensitivity to the social behaviour of others (Porges 2011 p 15).
- Prosody /

¹⁴ It is possible that (chronic) hyper-vigilant states [Dobbin & S. Ross 2012] may be associated with such procedural learning – for example, producing tensing of skeletal muscles such as those in the neck and shoulders.

¹⁵ Other procedural learned tendencies are associated with other emotions such as shame and guilt; these are not primary process emotions per se, but involve neo-cortical elaborations of various distressing feelings.

¹⁶ Their activation will be axiomatically associated with increased SNS efferent [brain to body] neural activity, and therefore with increased *afferent* neural signals [from the body to the brain] indicating to the brain that “everything in the periphery is not calm”; this will result in the distressed / agitated / fearful state persisting. [See also Craig 2005; and C12 in this web series.]

- Prosody, in this context, implies inappropriate or poor patterns of stress and intonation in language.
- The heart and lung problems can be associated with hypervigilant states resulting from increase SNS activation – such as increased heart rate and disruptive breathing patterns, such as hyperventilation.

In contrast to increased SNS activity reducing Social Engagement as depicted in Figure 2, increased activity of the myelinated vagal (PSNS) is associated with increased Heart Rate Variability [HRV], overall slowing of the heart, and increased Social Engagement.

2.4 Positive Affect Regulation and Social Engagement skills depend upon the mother's CARE circuits and the mother and infant's myelinated vagal system

Babies and small children are not able to Affect Regulate themselves because the Pre Frontal Cortex is too immature [see, for example, Sunderland 2006]. However, myelination of two groups of nerves in the foetus begins between the 24th and 28th week of gestation:

- Myelinated vagal to the viscera (e.g. the heart) [Porges 2005 pp 39-40];
- Motor pathway to the head and muscles of facial expression [Porges 2005 p 36].

This means that the mature baby is born with the ability to communicate through facial expression (via cortico-bulbar pathways) with his / her mother at birth – even though the full term infant does not have significant control over, for example, loco-motor muscles of the trunk and limbs (via the cortical spinal pathways¹⁷).

However, the infant will not be able to communicate if she / he does not feel safe. If the child's mother is fit and well, with healthily operating CARE /oxytocin circuits, then the mother who is socially engaged with her offspring – through facial expression and smiles and gentle vocalisations – will communicate this with her child: this will switch on the child's myelinated vagal system which will reduce the heart rate [via the myelinated vagal brake¹⁸], and at the same time allow the child's own Social Engagement system to interact with her / his mother's communications. So in this sense, the small child's affect regulation depends upon the mother /caregiver's nurturing and social engagement skills. If the mother, for whatever reason, is not able to engage in this way with the child, then there will be no / little opportunity for the child's Social Engagement system to develop. The poly-vagal theory underpins fundamental aspects of a healthy mother – infant dyad [Porges 2005].

To recap: in order for us to develop Social Engagement skills, we need the nurturing CARE circuits of our mother / parent¹⁹ to be regularly active in the mother-infant dyadic transactions. Social Engagement embraces several crucial components for our well being, and these are summarised in Figure 3 on the next page.

¹⁷ Cortico-bulbar and cortico-spinal pathways: Wikipedia give a helpful summary. "The corticobulbar tract is composed of the upper motor neurons of the cranial nerves. The muscles of the face, head and neck are controlled by the corticobulbar system, which terminates on motor neurons within brainstem motor nuclei. This is in contrast to the corticospinal tract in which the cerebral cortex connects to spinal motor neurons, and thereby controls movement of the torso, upper and lower limbs." – http://en.wikipedia.org/wiki/Corticobulbar_tract

¹⁸ And this will at the same time down-regulate the child's FEAR and RAGE (defences against danger) circuit; i.e. the child's activated Social Engagement system deactivates the child's flight / fight responses. This is a slight oversimplification in that positive Social Engagement between mother and infant is sometimes, of course, also associated with PLAY circuits, when the heart rate may increase – probably through subtle modulation of myelinated vagal efferents to the heart [i.e. reduced vagal neuronal impulses to the heart and thus speeding up the heart – see also Porges 2011 pp 102-117] and appropriate balanced activity between the SNS and PSNS.

¹⁹ And of course, as already indicated, the mother's own well functioning myelinated vagal system which allows her, in the first place, to be in an internal safe neuro-physiological milieu that enables her CARE circuits to operate.

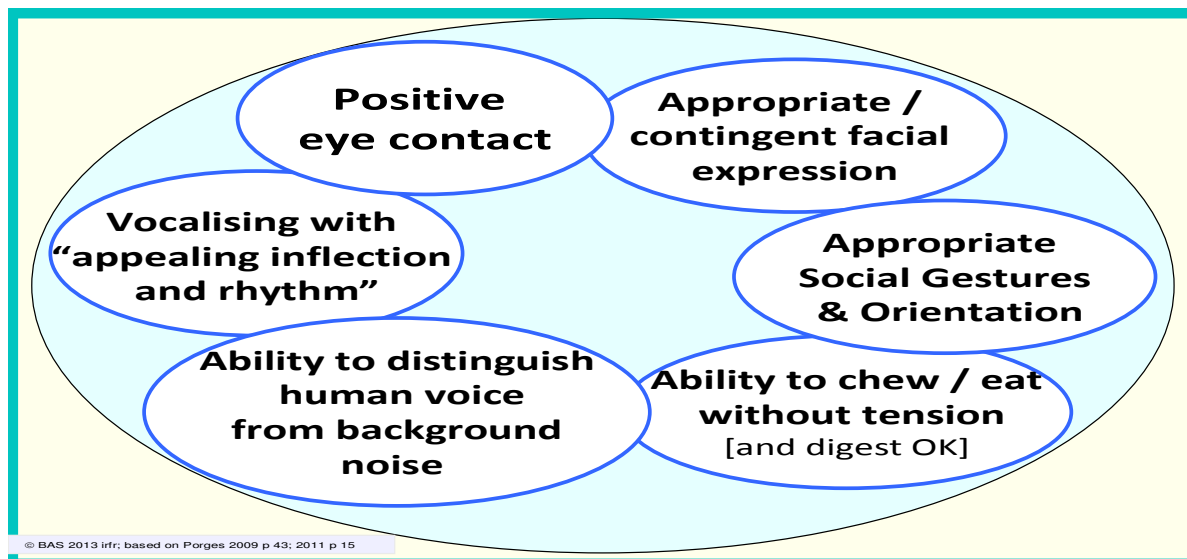


Figure 3
Characteristics of positive Social Engagement associated with
Myelinated Vagal activation [PSNS]
 [Adapted from Porges 2009 pp 42-43; 2011 pp 14-15]

Comments on figure 3

- All of these characteristics facilitate two way communications with the person(s) we are with.
- Social gestures and orientation are modulated by, for example, the muscles that control head movement.
- Positive eye contact and gaze can be particularly important in developing trust and a feeling of safety [e.g. Wilkinson 2010 p 18].
- The ability to distinguish human voices from background noise is a function of middle ear muscle modulation (note that this ability can deteriorate with age).
- When we are relaxed with others we can eat and digest easily and “without thought”; when we are tense this is not the case – for example, our mouth no longer has watery saliva.

The mother-infant dyad alternates between SNS and PSNS (myelinated) activity, and this facilitates appropriate affect regulation, PLAY, and SEEKING dynamics within the infant / child (Porges 2011 pp 275-277; Sunderland 2007). Note (as already mentioned) that infants / young children do not have the ability to affect regulate themselves as their Pre-Frontal Cortex [PFC] is not sufficiently developed (Sunderland 2007); rather, it is the healthy mother-infant interactions that enable mutual Social Engagement to occur, and the nurturing physical contact between mother and child acts as a prime mover in affect regulation of the child.

2.4a Dibs and PLAY therapy

In the classic account of a child initially deprived of appropriate parent-child interactions, the disturbed Dibs (aged about 6 years old) initially exhibits some of the feature of Figure 2 – with poor eye contact, very little speech, and often distressing behaviour. Gradually, he develops a positive one to one relationship with his play therapist “Miss A”, and is able to act out in play therapy the traumas and upsets that he has experienced. During the several months of therapy, he shifts from some of the features illustrated in Figure 2 to those of Figure 3; he then starts to interact positively with the other children at school, and with his mother and father and sister [Axline 1964]. The implication of this is that appropriate early (PLAY) therapy intervention in children can prevent the development of ingrained trauma / procedural learned tendencies.

2.4b Social Engagement when distressed:

If we are distressed, as adults, we may seek help / comfort from another being. In some respects, this is a re-enactment of the Separation Distress we will all have experienced as small children. If we are comforted, then the distress settles. One of the distressing facts some children have to face is that their parent / care-giver may also be the person that abuses them – including neglect. In this situation, turning to the caregiver initially will be activating their Myelinated Vagal and Social Engagement systems; if there is no (or no appropriate) response to this approach – the Myelinated Vagal system may become switched off – and possibly be taken over by the unmyelinated dorsal vagal system: a sort of immobility the far side of Separation Distress. This may result in subsequent dysfunctional “clinging behaviour”. Annie Sturgeon, an Autogenic Therapist and former teacher, comments: “My work with young children suggested to me that this behaviour [i.e. clinginess] was the result of insecurity (as a result of separation distress or the anticipation thereof).”²⁰ For footnote on clingy behaviour in the context of Ainsworth’s “Insecure Ambivalent / Resistant” group.

Patients with reliance on relation-seeking actions tend to overuse clinging and proximity seeking behaviours.....

Ogden 2009 p 209

3. Sequential Adaptive means of dealing with danger / stressors [based on Ogden 2009 model]

We can look at the adaptive means of dealing with stressors / danger in terms of three physiological modalities that Ogden argues are normally adopted in the following sequence:

- i. Human-contact SEEKING behaviour (Myelinated Vagal); if this fails we move on to:
- ii. Mobilising / activating defences (SNS); and if this fails we move on to:
- iii. Immobilisation (SNS and /or unmyelinated PSNS – see below).

However, such adaptive means can become ingrained in childhood – and as a result they can become mal-adaptive procedural learned physical tendencies in the adult (Ogden 2009). We will now look at these in turn.

3.1 Human-contact SEEKING behaviours

The most primordial anxiety mammals and humans suffer from is probably Separation Anxiety, which triggers the PANIC circuits in younglings [Panksepp 1998^P]. This will, naturally, first manifest itself in the infant / small child crying out for their mother – and at the same time SEEKING to find the mother / parent figure. So from this perspective Separation Anxiety can be seen to be adaptive as it results in behaviour that is likely to re-establish contact with the mother. The mother, on hearing her baby’s cries, is also primed to re-establish contact through a combination of her nurturing / CARE circuits, SEEKING circuits, and the activation of her myelinated vagal system facilitating specific Social Engagement with her offspring.

Separation Anxiety implies either physical separation, or psychological separation, or both. The practice of babies / young children being put into their cot / bed in a separate room from the parents’ bedroom is problematic and non-biological. The idea that a crying baby, if left alone, will eventually stop crying and all will then be well is to misunderstand what is going on within the physiology of the baby.

²⁰ The research by Mary Ainsworth, (who at one time worked in John Bowlby’s research team at the Tavistock Clinic, London), identified three forms of attachments in infants with their mother (in the “Strange Situation Procedure”): Secure; Insecure Ambivalent (or Resistant); and Insecure Avoidant. The Insecure Ambivalent / Resistant group are the ones that tend to show clingy behavior [Ainsworth & Bell 1970; also <http://www.simplypsychology.org/mary-ainsworth.html> accessed 02-04-2014; and http://en.wikipedia.org/wiki/Mary_Ainsworth accessed 03.04.2014]. [See also B19 on this website for a fuller discussion Ainsworth and Main’s research on attachment.]

^P Panksepp describes the plight of young otters when their mothers dive for food; the younglings make repeated vocal distress calls, which allow the mother otter to find them again amidst the wind and waves [Panksepp 1998 pp 261-262]

Such a baby is crying out for the physical presence of their parent because, as already indicated, their Pre Frontal Cortex is not at this time sufficiently developed to affect regulate themselves; in such situations, if they are simply left to cry, they will eventually, of course, stop crying: but this is not because they have become OK, but rather because they have ended up physiologically exhausted and psychologically distressed. If such a pattern occurs again and again, they will end up not just distressed but also psychologically traumatised [Sunderland 2007; Ainsworth 1967; Ainsworth & Bell 1970; Schore 2003B & C; Schore 2012].

Historically, Asian and other cultures have not followed such practices; in China Sudden Infant Death Syndrome is rare / unknown [Sunderland 2007 pp 70-77; see also Liedloff 1975].

In adults, loss of any form can re-activate these Separation Anxiety circuits, and in these circumstances it generally manifests itself as GRIEF rather than PANIC (Panksepp & Biven 2012). Here again, comfort is often sought from other human beings²¹. However, those who have experienced recurrent Separation Anxiety in childhood may have developed a learned procedural tendency that in adult grief becomes mal-adaptive. [In a healthy mother-child dyad, separation from the mother leads the child to SEEKING behaviours which can be seen in terms of consummatory behaviour²² – the consummation being the re-united close union with the mother.]

Distress of any form will often result in us SEEKING human comfort and support; it is probably best to accept this as a primordial and sub-cortically induced response which can lead to the nurturing and CARE that we need at such times. Seeking social engagement in this way is generally the most appropriate way of dealing with a physical / psychological threat to our integrity²³. If this approach does not work, then we may resort to the next line of defence, which involves mobilising our own sub-cortical defence systems.

3.2 Adaptive responses through our FEAR and RAGE circuits

If we are in danger, the flight response can clearly be adaptive; we flee from the danger, and at the same time we SEEK out safety. As described above, such patterns can in childhood become ingrained if we are repeatedly subjected to, for example, inappropriate parental behaviour. Once again, in such circumstances, certain stimuli may activate the procedural (conditional) learned response. Ogden cites behaviour such as a person always leaving a meeting when it becomes a bit difficult / fraught as an example of one possible long term outcome of such childhood conditioning (Ogden 2009).

In a similar way, where escape seems impossible the best option may be to fight, and in this case the RAGE circuits will be activated – and in this context this can be adaptive. However, once again childhood conditioning may result, in our adult life, with the activation of conditional [RAGE] responses to a variety of conditional stimuli – including those that have been neuro-physiologically paired with the original unconditional stimulus. In adult life such (unconscious) fight / RAGE responses are often inappropriate, unpleasant, and highly counter-productive.

Patients with a tendency toward “fight” responses typically report tension in the arms, shoulders, jaws, and back....

Ogden 2009 p 209

In anger / RAGE, blood flow to the hands is increased.

Ekman & Dalai Lama 2008 p 41

²¹ While many have benefited from the “Intentional Crying Off Loading” exercise in Luthe’s modulation of Autogenic Training, from a neuro-physiological perspective this may be problematic: we do not want the intentional exercise to end up like the child crying for help in a room where she or he cannot be heard (i.e. with no human contact / warmth). Susan Hill’s compassionate passage in “In the Spring Time of the Year” [Hill 1974; 1989 p. 135] and Beethoven’s meeting with Baroness von Ertmann after her child had died [Robbins Landon 1992 p. 126] address this matter (loss) with sympathy and wisdom.

²² Consummatory Behaviour: (Psychol.) “Any behaviour that leads directly to the satisfaction of an innate drive, e.g. eating or drinking.” [Collins English Dictionary 2011 p 368].

²³ However, this is not straightforward as we have to feel safe – at least to some extent – for our Social Engagement system to operate (which can only do so if our myelinated vagus system has become activated – see Figure 3).

3.3 Adaptive Immobility Responses

If the above responses fail or are inappropriate, the third modality, that of immobility, comes into play. Such immobility manifests itself in at least three ways.

3.3a): Alert Immobility modulated by SNS

This can be seen as a most valuable precursor to any response, provided the danger is not absolutely immediate / life threatening; sometimes called the “FreezE”²⁴ response, this in effect gives us time to assess the situation, in the context of alert immobility in which, as already described, we “stop, look and listen” [Bracha 2004]. Note that this may be associated with priming of the SNS as a prelude to mobilising our defences for flight or fight.

A further note on notation and the FreezE response in the context of FreezE, Flight, Fight, Fright, and Faint [this expands the overview of this matter given in the preamble].

The footnote below on the freeze response discussed here is perhaps best amplified in the main text. What follows is my understanding of complex neuro-physiological dynamics that attempts to integrate the concepts of Ogden, Bracha, Porges, Panksepp, and LeDoux. Bracha’s notation is as follows:

- i. “FreezE” = “stop, look and listen”; this means that this is a conscious response and is what ethologists observe. While this may be associated with priming of our SNS, my feeling is that it may also be associated with vagal myelinated efferents which allow communications with our neo-cortex to remain intact so that we can cognitively assess the situation.
- ii. Flight [confusingly, this can be unconsciously activated before the conscious “stop, look, & listen” described by ethologists – see also LeDoux 1999 p 164; Dobbin & S.Ross 2012 p 138 Figure 1]. Flight will be associated with the activation of our FEAR circuits [Panksepp 1998].
- iii. Fight: where flight is not an appropriate option – Fight is associated with activation of our RAGE circuits [Panksepp 1998].
- iv. Fright: this is associated with tonic immobility, or “playing dead” and may be adaptive. Bracha indicates that this is what child psychologists (and others) sometime term the Freeze response – Bracha 2004 p 680.
- v. Faint: here the organism collapses due to profound hypotension, activated by the primordial reptilian unmyelinated vagus [Porges 2011]. While this was adaptive for reptiles, in humans it is problematic as the hypotension can lead to brain damage in the oxygen sensitive mammalian brain.

The freezing [i.e. FreezE] in such “alert immobility” is in a sense a bluff freezing, as it is associated with an active engagement in what is going on – hence my feeling that in this early stages of alert immobility the myelinated vagal will be involved; and note that if the danger seems real, there may be a reduction in the myelinated vagal efferent activity to the heart – which will result in a speeding up of the heart without at this stage the need for full SNS [neural and hormonal] activation [Porges 2011; 2005].

Ogden, quoting Siegel, states that the SNS activation of this alert immobility may possibly be associated also with the dorsal (unmyelinated) vagal system (PSNS) [Ogden 2009; Siegel 1999]. This may be the case, though I would have thought on theoretical grounds (as already mentioned) that the part of the PSNS activated would be the myelinated vagal [i.e. with the SNS], as the myelinated vagal would give us an alternative response to the danger: i.e. that of Social Engagement²⁵ and so solidarity with those we are with [see also the A1 in this series which covers the “Tend-and-Befriend Response”].

²⁴ The notation here is following that of ethologists as described by Bracha [Bracha 2004]; to avoid confusion, as already discussed, this ethologist’s take on freeze will be notated as FreezE in this article.

²⁵ Especially as Ogden goes on to state that this “alert immobility” state “may appear as complete stillness except for eye movement and respiration” [Ogden 2009 p 208]; such eye movement would I think be associated with myelinated vagal activity.

Integrating the Ogden and Bracha perspectives

The above perspective from Ogden does not entirely fit in with Bracha's model that includes Fright. Bracha distinguishes FreezE from Fright as discussed above, and I have equated Ogden's alert immobility with Bracha's FreezE response.

Bracha associates Fright with tonic immobility, but not with fainting – as then we could not escape if the situation changes. In the combined model I am suggesting, we would have:

- FreezE of alert immobility: “stop, look, listen”; SNS mediated [Bracha 2004; Ogden 2009].
- Fright: tonic immobility with un-myelinated vagus [PSNS] yet SNS still primed [Bracha 2004; Ogden 2009]. Bracha comments:

A captured prey that becomes tonically immobile rather than struggling and fighting may increase its chance of escaping if the predator temporarily loosens its grip under the assumption that its prey is dead. Tonic immobility may enhance survival and is therefore adaptive when there is no perceived chance of escaping or winning a fight. The tonic immobility survival response may be the best explanation for the behaviour of some rape victims during the assault.

Bracha 2004 p 680

See also Porges 2011 pp 179-183

- Faint: floppy immobility where the increased activity of the un-myelinated vagus [PSNS] produces hypotension and such reduced blood supply²⁶ to the neo-cortex as to result in fainting [Bracha 2004; Porges 2011 pp 290-292].

We could regard the Faint response as an extreme development of the Fright response.

We will now look in more detail at Floppy Immobility.

3.3b): Floppy Immobility [+ / - fainting] modulated by the unmyelinated vagus

This is a last resort type of adaptive response in which we not only “feign death” and look as if we are dead, but, as implied above, if the response is excessive, we may also faint as a result of profound hypotension / reduced blood perfusion of the brain.

Floppy immobility is underpinned by the dorsal vagal un-myelinated branch of the vagus nerve, which can cause the shut down of many bodily systems [Schore 2009 p 131; Schore 2012 p 90; Porges 2005]. Ogden describes it in the following terms:

Characterised by limp musculature, behavioural shutdown, slowed heart rate, and / or fainting (Lewis et al 2004, Porges 2001A, 2004, 2005; Nijenhuis et al 1998, 1999; Scaer 2001; Schore 2007), this defence variant occurs as a “last resort” when all else has failed. With profound inhibition of motor activity (Misslin 2003), coupled with little or no sympathetic arousal, this hypo-aroused condition is a shutdown state that reduces engagement with the environment and may be accompanied by anaesthesia, analgesia, and muscular-skeletal retardation (Krystal 1988, Nijenhuis et al 1999).

Ogden 2009 p 208

It is instructive to also have Siegel's perspective on this floppy immobile response:

²⁶ Note that in childbirth oxytocin may “protect the autonomic nervous system from reverting to this [i.e. unmyelinated] primitive vagal system” [Porges 2011 p 291] and so prevent severe hypotension and fainting.

..... If the individual's prefrontal region assesses a situation in which there is felt to be no strategy of escape from harm, a portion of the parasympathetic branch, the unmyelinated branch of the dorsal vagal nerve, is activated; the individual then experiences a "dorsal drive", in which blood pressure and heart rate are dropped and fainting may result. This is the helpless / hopeless state²⁷, or a "flaccid freeze"²⁸ response, sometimes attributed to a dissociative reaction. This is Porges's "polyvagal theory" Our reaction to threat is actually composed of two different elements: the activated sympathetic fight-flight-freeze response and the parasympathetic shut down state of collapse²⁹.

Siegel 2012 p 316

I think that in situations of danger where this floppy immobility comes into play, it will be modulated initially pre-consciously³⁰.

In the late 1950s, when on a short walking tour with my mother and brother Michael, we were walking through some lovely country far from any noise or disturbance; suddenly, a train travelling at speed appeared (to me out of the blue) fifty yards away or so (where we were to find that our path crossed the railway line). Before I had realised what this great noise was, I felt faint and as though I was about to collapse; my mother was quite taken aback by my response. In hindsight, this was I think the unmyelinated vagal system firing into action and creating short lived hypotension in a situation in which my body / physiology did not know how else to respond.

3.3c): Submissive behaviours modulated by the unmyelinated vagus

Ogden goes on to describe the third aspect of adaptive immobility, which is I think a particular clinical aspect of 3.3b above. Such submissive behaviour is characterised by "passive avoidance" (the opposite of the myelinated-vagal related a Social Engagement) and "avoiding eye contact or lowering the eyes, crouching, and bowing the back before the perpetrator"; and it may include "automatic obedience to the demands of the aggressor" (Ogden 2009 pp 208-209). This type of behaviour may involve "mechanical compliance" and a "lack of protest against abuse". [The inference being that this is a learned adaptive behaviour to minimise harm and increase chances of survival.] While this may have been adaptive in the context of being abused as a child, such learned behaviour in an adult context is clearly dysfunctional.

Some of the dynamics discussed above are summarised in Figure 4 below.

²⁷ I think Ogden would notate helpless / hopeless state under the term "submissive behaviour" [see section 4.3c in this paper].

²⁸ As already noted, in this paper we are following Bracha's and Ogden's notation and not calling this the "freeze" response; but the fright-faint response.

²⁹ See Section 2 and Figure 2 above. Also note that as humans we tend to like things being either / or (Cartesian dualism!); actually, some of the above modalities may have activation of both SNS and PSNS dynamics, and will fall into one or other category depending on the relative activation of the various components of the ANS.

³⁰ Similar in principle to the LeDoux model of our response to acute danger (e.g. a snake) where the initial neural pathways go direct to the unconscious visual thalamus and from there direct to the amygdala, which sets in motion the flight response before we have become consciously aware of the snake [see B10 on this website – page 1 Figure 1].

<p>FreezE</p> <p>Adaptive Immobility</p> <p>Assessing Situation</p> <p><i>stop, look & listen</i></p> <p>[consciously modulated]</p> <p>[Bracha 2004]</p> <p>alert immobility</p> <p>[Ogden 2009]</p> <p>? Myelinated Vagal initially</p> <p>SNS primed</p>	<p>Social Engagement</p> <p>SEEKING</p> <p>CARE</p> <p>PLAY</p> <p>Myelinated Vagus</p> <p>PSNS</p> <p>[Porges 2011]</p>	<p>Flight</p> <p>FEAR</p> <p>SNS</p>	<p>Fight</p> <p>RAGE</p> <p>SNS</p>	<p>Fright</p> <p>Tonic immobility</p> <p>“feigning dead”</p> <p>Un-myelinated vagus PSNS (see text)</p> <p>SNS still primed for possible escape</p> <p>[Bracha 2004 Ogden 2009]</p>	<p>Faint</p> <p>Floppy Immobility</p> <p>Un-myelinated vagus producing profound hypotension and so fainting</p> <p><i>Cf. Submissive behaviours modulated by the unmyelinated vagus</i></p> <p>[Ogden 2009]</p>
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© BAS 2014 irfr; based on Ogden 2009; Bracha 2004; Panksepp 1998; Porges 2011

Figure 4

Ogden’s Adaptive and Mal-adaptive responses

framed in terms of the work of Bracha 2004; Panksepp 1998; & Porges 2011

[FreezE here, as discussed in the text, is associated with the ethologist’s “Stop, Look and Listen” observations, and not with Fright or Faint]

Comments on Figure 4

The figure is based on the notations and work of:

- Bracha [Bracha 2004]; i.e. FreezE³¹, Flight, Fright & Faint in the context of:
- Panksepp [Panksepp 1998] and the Primary Process Emotions [e.g. FEAR; RAGE; SEEKING; CARE; PLAY]. Some maladaptive responses may also originate from primordial Separation Anxiety when this is associated with an insecure attachment in childhood [McLeod 2008; Hammond 2005; Ainsworth 1967; Bowlby 1969; 1980], and then also manifest in adulthood – in terms of both PANIC and / or GRIEF [see also B19 in this web series].
- Porges [Porges 2011] and his poly-vagal theory relating particularly to the myelinated and un-myelinated parts of the vagal nerve.

Also note:

- i. Tonic Immobility is the phrase used by Bracha in connection with Fright [Bracha 2004 p 680]; Ogden uses the term Floppy Immobility to cover Fainting, yet also what sounds like Bracha’s Fright [Ogden 2009 p 208].
- ii. Note that Positive Social Engagement behaviours are dependent on the activation of the myelinated vagus [Porges 2011].

4/

³¹ For the avoidance of any doubt: as already discussed in the text, in this article the notation FreezE means Freeze in the sense that Bracha [Bracha 2004] uses the term – in connection with the adaptive immobility of “Stop, look, listen”; [and not as is sometimes used to mean feigning dead etc].

4. Recap on Trauma Related Emotional Tendencies [Ogden 2009]

We will start with a helpful summary of Ogden's perspective.

To reiterate, animal defensive strategies and their corresponding emotions stimulated by threat are:

- adaptive in the moment of immediate peril, but
- tend to become inflexible tendencies in people with post traumatic stress disorder [PTSD] and other trauma-related disorders.

Once danger is assessed, emotional arousal, now commonly interpreted as terror or anger, serves to support instinctually driven animal defensive strategies [Frijda 1986; Hobson 1994; Rivers 1920].

These dys-regulated emotions tend to persist for traumatised individuals, who are characterised as suffering not only from "feeling too much*" but also from "feeling too little" [van der Kolk 1994]. Sympathetically mediated mobilizing defences entail an amplification of subjective emotional states – feeling too much – which is very different from the dampening and deadening of subjective emotional states – feeling too little – that typically accompany the immobilizing hypo-arousal defence [Ogden et al 2006; van der Hart et al 2006].

Ogden 2009 p 216

Bullet points and paragraphing added

We will be returning to the theme of "feeling too much" *** and "feeling too little"* in Part II of this essay. The figure below summarises some of the clinical problems and manifestations from these maladaptive learned tendencies; asterisk notation in Figure as above.

	Original trauma leading to:	Underlying neuro-physiology that then becomes dys-regulated....	Outcome of dys-regulated neuro-physiology leads to Disturbed Mental States, such as:
A	Flight response [Unconditional]	FEAR / terror Can now be triggered by various Conditional Stimuli [CS] For example, if the original trauma was caused by a tall man, tall men in future can act as the CS	Chronic fear precipitated in many social situations***
B	Fight Response [Unconditional]	RAGE circuits – again triggered by various CS	RAGE dys-regulation leading to recurrent responses of anger / violence***. Danger of individual becoming "at the mercy of bouts of rage with minimal provocation" [Ogden 2009 p 216]
C	Unmyelinated vagal response "Feigning dead" associated with increased unmyelinated PSNS / vagal activity	Submissive behaviour to deal with acute situation modulated by the un-myelinated [dorsal] vagal system	Leads to: i. Chronic immobilising responses associated with: <ul style="list-style-type: none"> • feelings of helplessness*** • loss of internal locus of control • lessening of self worth*** • inability to be effectively assertive [Ogden 2009 p 216] ii. Or possibly: "subjective detachment" from emotions / or absence of emotions* [Ogden 2009 p 216]

Figure 5

An attempt to link some Procedural Learned Tendencies that lead to chronic mental distress [Ogden 2009] with the poly-vagal theory [Porges 2011] and Primary Process Emotions [Panksepp 1998]

Comments and reflections on Figure 5

Sections A and B of the Figure are fairly well established; those of C are more problematic in terms of what specific systems are operating. However, C can lead to chronic immobilising responses, which are perhaps best seen in terms of autonomic nervous system dynamics rather than in terms of particular emotions, i.e. it is the autonomic response [ANS] in terms of the un-myelinated response that leads to the submissive type of behaviour, rather than an Emotional Operating Neuro Circuit / system [EONS] per se³².

From the point of view of the actual human being suffering from one of these un-myelinated PSNS modulated procedural learned tendencies, however, the crucial matter is the actual existential experience – and how this can be relieved – rather than the neuro-physiological underpinning. However, a clear grasp of the neuro-physiological underpinnings of the various distressing subjective mental states may in future lead to more efficacious treatments.

The range of chronic immobilising responses is summarised by Ogden as follows:

Chronic immobilising responses provoke feelings of helplessness, loss of internal locus of control, lessening of self worth, and an inability to be effectively assertive^[Krystal 1988]. Blaming themselves, patients then succumb to shame and further feelings of inadequacy and despair, particularly if they fail to understand that a lack of assertion is often the result of a tendency to depend on immobilising defences for safety and not merely a psychological shortcoming.

Ogden 2009 p 216

The shame in these situations is, as discussed, a procedural learned tendency that has become ingrained [just as leaning to ride a bike is a procedural learned tendency that is not undone even after years of not riding a bike – Ogden 2005 p 205]. In other words, these procedural learned tendencies lead to unconscious activation of immobilising (un-myelinated vagal) defence strategies that in adult life are usually quite inappropriate and counter productive; and they result in social dis-engagement rather than social engagement³³.

Ogden distinguishes between trauma related tendencies and mal-adaptive attachment related tendencies. Trauma related tendencies result from (repeated) childhood traumas / “overwhelming experiences” that lead to sub-cortical defence responses and “dys-regulated arousal” [Ogden 2009 p 206]. Attachment related physical tendencies result from emotional distress arising in the child as the result of the caregiver’s behaviour / attitude / speech that is repeatedly upsetting yet not experienced as overwhelming [Ogden 2009 p 206].

Note that the feeling related to the “chronic immobilising responses” mentioned by Ogden in the above quote may overlap with some of the underlying processes of a Fixed Mindset [cf Growth Mindset – see Dweck 2012; and B15 in this web series].

The dynamics discussed in the above sections are central to an understanding of Ogden’s concept of the “Window of Affective Tolerance” discussed in Part II.

³² This is OK perhaps as a working model; but actually every state we are in has ANS and EONS correlates.

³³ Which, as discussed above, requires activation of our myelinated vagal system

PART II: THE WINDOW OF AFFECTIVE TOLERANCE AND MINDFULNESS APPROACHES

5. Social Engagement as a possible means of dealing with extreme threat

Pat Ogden comments that “Social Engagement can sometimes manage, modulate, and even disarm or neutralise an interpersonal threat.....” [Ogden 2009 p 207].

In a remarkable article in the Guardian of 26th August, 2013, Gary Young recounted an extraordinary event that took place on Tuesday, 20th August in Georgia. “Twenty year old Michael Hill walked into Ronald E. McNair Discovery Learning Academy in Decatur, Georgia, with an AK-47-style assault rifle, 500 rounds of ammunition, and ‘nothing left to live for’. With 870 children inside aged between five and 11 years and Hill confessing that he had not been taking his psychiatric medication, the nation was, in all likelihood, staring down the barrel of yet another horrific school shooting” [Young 2013].

However, luckily Hill took “as his hostage” Antoinette Tuff. Luckily, because it turned out that Antoinette Tuff was able to talk to Michael Hill with understanding and sympathy – and “negotiated between Hill and the police”; and she eventually persuaded him to give up his weapons and give himself up.

So it would appear that by remaining calm enough for her own Social Engagement system to act effectively, Antoinette Tuff was able to engage at a meaningful level with the man, resulting in the dissipation of his latent FEAR and RAGE – and this changed mental state resulted in the positive outcome.

Over two thousand years ago, the Buddha was able to engage, in a similar way, with a man who had committed many murders; and the man, Angulimala, eventually became a follower of the Buddha (Kumar 2004).

In such cases, it appears that the threatened person is able to keep calm enough for the myelinated vagal to engage the Social Engagement circuits and her / his own CARE circuits, with the result that these gentle and positive and nurturing affects begin to resonate within the disturbed person³⁴, such that their negative and aggressive affect is dissolved. [See also Siegel 2010 and C3 on this website.]

6. Posture, Affective / Mental State, and internal physiology

Paul Ekman has commented that if we adopt a particular facial expression related to a particular emotion, we will begin to experience that emotion.

..... If you intentionally make a facial expression, you change your physiology. By making the correct expression, you begin to have the changes in your physiology that accompany the emotion. This was seen in both the work on the bodily physiology and some work by Richard Davidson on changes in the brain. The face is not simply a means of display, but also a means of activating emotion⁴.

Ekman; 2003; p 130

⁴ Davidson et al 1990

This means that the very posture and facial expression that we adopt can change our physiology.

Negative affective states such as FEAR and RAGE themselves profoundly affect our physiology. Anxiety and the related FEAR-circuits are associated in humans with increased blood flow to the legs,

³⁴ This internal resonance may also have the effect of activating the distressed person’s own CARE circuits, which themselves then act as antidotes to FEAR and RAGE [Panksepp 1998].

which can be seen as an appropriate adaptive response when we are faced, for example, by a bear. We also need to bear in mind that anger and the associated RAGE-circuits result in an increased blood flow to the hands: in this sense our RAGE circuits are primed to damage, and all the implications that this may carry (Ekman & Dalai Lama 2008 p 41).

Mindfulness approaches can help to dissipate negative affective states, and block the stimulus that caused the negative affect from resulting in inappropriate behaviours / actions [see B18 on this website]. If we say “I am angry”, we are in a sense identifying with the anger: the “I” and the “anger” are one. On the other hand, if we reconfigure our mental state with the words: “Anger is arising within me”, we can see that we are not that anger; we are separate from it; and so we are in a position to not let it take us over.

If we are feeling low and depressed, we tend to take up a slumped position; we will probably not be smiling. If we then stand up and take some deep, slow, breaths in and out, we may feel different³⁵. Body and Mind inter-are.

When we smile, we feel happier and when we feel happier we smile.... The feedback between layers or levels of the brain is bio-directional: if you activate a lower level, you will be priming an upper level, and if you activate a higher level you will be priming a lower level.

Ratey 2002 - 164
Quoted by Ogden 2009 p 231

7. Mindfulness dynamics; and procedural / learned tendencies

How can we begin to change automatic and now inappropriate responses that originally arose as adaptive responses to traumatic / very stressful childhood experiences and that now, in adulthood, are dysfunctional?

Developing mindfulness is one approach. In mindfulness, we note what is going on within, rather than enact or negatively ruminate about it – for example, we note that a procedural tendency is arising within us. If we focus on the experience, this can be a problem as we can then identify with that experience. For example, (as discussed above), in the domain of emotions, I can say: “I am angry”; such a formulation has the danger of me identifying with the anger. Rather than focusing on the distressing emotion, we *notice* what is going on within: for example, “Anger is arising within (me)”; this is very different from the “I am angry” formulation – as the anger is now separate from me.

In this context, an actual therapeutic encounter becomes an opportunity for both the client / patient and the therapist to observe / notice the “emergence of procedural tendencies in the here and now of the therapy hour” [Ogden 2009 p 221]. We come to see such tendencies in terms of what is going on within us not as aspects of psychological disease, but rather as learned tendencies that we can change – thanks to the “plasticity” of the brain.

Tension in our neck and shoulders can be a manifestation of a procedural learned tendency. In Autogenic Training groups I often draw on a flip chart the “Neck and Shoulders are Heavy” area, and then invite the members of the group to outline this area on each other’s back with their hands. On one occasion some years ago a member of the group declined this suggestion. There could be several reasons for this, but one is that in childhood we may have developed a procedural learned tendency to become tense in our neck and shoulder areas as part of a fear response – that was originally appropriate. If our neck and shoulders have become tense in this way, it will be difficult for us to engage socially at this moment as the tenseness indicates that the body is already preparing for flight [SNS] – and not Social

³⁵ This is meant as a general statement, not as a way out of depression. Deep depression is a “total body physiological state” and in itself is resistant to such simple postural changes; yet the positive idea behind altering our posture to change our physiology remains.

Engagement, modulated by our myelinated vagal system [see Part I of this essay]. Mental / Autogenic Training may of course help to dissipate such tensions; however, if the response is a deeply ingrained procedural learned tendency, then we may also need the one to one approach outlined by Ogden [Ogden 2009]. Mindfulness approaches are increasingly being seen as important in many areas of therapy, including Autogenic Training and within the therapeutic dyad [Ogden 2009].

Mindfulness has been described as: “paying attention, in a particular way, on purpose, in the present moment, non judgementally” [Kabat-Zinn 1994; p 4]. Implicit in this is our innate curiosity³⁶ as to what is going on in our inner and outer world; the motivation for this curiosity is underpinned by our SEEKING system [Panksepp 1998]. Segal, Teasdale, and Williams comment, early on in their book “Mindfulness-Based Cognitive Therapy for Depression”:

They [mindfulness teachers] did not try to fix or give solutions to problems raised. When patients said they felt sad or afraid, or that they had judgemental or hopeless thoughts, they were taught a [radically different] approach, one that encouraged them to “allow” difficult thoughts and feelings³⁷ simply to be there, to bring to them a kindly awareness, to adopt toward these thoughts and feelings a more “welcoming” than “need to solve” stance.

Segal, Teasdale, & Williams 2013 pp 52-53

Cf. Segal, Teasdale, & Williams 2002 p 55;
Quoted in part by Ogden 2009 p 221

Bringing such thoughts, feelings, and bodily sensations into a “kindly awareness” will, for many patients, initially be facilitated by the nurturing approach and CARE circuits [Panksepp 1998; Panksepp & Biven 2012] of the therapist; and this will in time facilitate increasing activation of the CARE circuits of the patient as she / he becomes more mindful and nurturing to her-/ him-self [see also Bromberg 2011].

Mindfulness is motivated by our curiosity [SEEKING circuits], and mindful self-awareness is facilitated by noticing what is going on within. As mentioned, Ogden suggests that noticing is different and more therapeutically effective than simply experiencing. So rather than ask ourselves (or the patient / client) “what is my experience right now”, we reframe this as:

- “What do I notice in my body right now?” [Ogden 2009 p 222].

As a result of reading the chapter “Emotion, Mindfulness, and Movement” by Ogden, I have now modified my handout on the three minute exercise³⁸ to emphasise the mental activity of noticing, as distinct from simply becoming aware of, what is going on within. This may seem a small point, but I think the difference is subtle and important. A client was once asked by his therapist what are you experiencing in your heart right now. The client was perplexed as he did not feel anything. However, had the therapist asked “What are you noticing right now in your heart?”, the answer could have been “I am not noticing anything” – which is itself significant: i.e. “I am noticing that I am not noticing anything in that part of my body” is itself a mindful observation.

Note that the English word Mindfulness is not entirely satisfactory, and may suggest a brain or Left Hemisphere emphasis; this is not correct. The concept of mindfulness has its origins in Buddhist philosophy: the Sanskrit word for mindfulness is *smriti*. This literally means “remember” or “remembering”. Thich Nhat Hanh says:

³⁶ The Seven Factors of Awakening in Buddhist psychology include “investigating phenomena” [Hanh 1998 p 216]; this is possible because of our SEEKING system [Panksepp 1998]; we investigate phenomena because of our innate curiosity.

³⁷ Ogden adds in “and bodily sensations and movements” – Ogden 2009 p 221.

³⁸ Based on: Segal, Teasdale, & Williams 2002; 2012

Mindfulness is remembering to come back to the present moment. The character the Chinese use for 'mindfulness'³⁹ has two parts: the upper part means 'now,' and the lower part means 'mind' or 'heart'.

The first miracle of Mindfulness is to be present and able to touch deeply the blue sky, the flower, and the smile of our children."

Hanh 1998 p 64-65⁴⁰

So our western translation of *smriti* gives it a misleading cognitive and left hemisphere bias: mindfulness that is not heartfelt is not mindfulness. The term would perhaps be better rendered as "Heart-Mind-Fullness" – or left un-translated.

Ogden comments that the concept of mindfulness overlaps with that of "mentalizing": "the process by which we make sense of the contents of our own minds and the minds of others (Allan 2008; Fonagy et al 2002" [Ogden 2009 p 222]. Mentalizing can be affected by many factors, including our posture. Both mindfulness (*smriti*) and mentalizing can play a significant part in changing procedural tendencies.

Although the process of mentalizing can be conscious, involving explicit reflective functioning, it often occurs automatically without thought or deliberation. Such 'implicit' mentalizing is influenced by many factors, including:

- posture,
 - sensation,
 - and movement of the body
- as well as chronic and acute emotional states.

For example, the mentalizing of an individual whose body is constricted and tense is different from that of an individual whose body is tension free; the mentalizing of one whose spine is slumped and shoulders rounded forward is different from that of another whose spine is erect and shoulders square⁴¹.

Through mindfulness, we become aware of such procedural tendencies as contributing to implicit mentalizing. The mentalizing can become more explicit as these implicit phenomena are brought into consciousness and reflected upon.

Ogden 2009 p 222;
Bullet points and paragraphing added

The Partial Exercise "My neck and shoulder are heavy", and Walking Meditation, can both help us to stay in touch with our bodies and be aware, at the same time, of our posture. In effect, these both help us to tune in to our autonomic afferents⁴² – and these methods facilitate increased afferent PSNS activity⁴³. In Walking Meditation, we tune in to our feet – especially the feeling as the soles of our feet come down on the ground / floor; thus we notice each step of the way.

8. /

³⁹ 念

⁴⁰ Hanh then goes on to describe the other aspects of Mindfulness in his chapter on "Right Mindfulness" (pp 64-83)

⁴¹ In this respect, if we are doing a visualisation or mindful reflection after an (advanced type) AT session, the Arm Chair Position may be more appropriate than the Simple Sitting Position – footnote by IR.

⁴² See C12 on this website: Presence in Mind – *Autonomic Afferents and Well-Being* [especially Figure 8A & 8B on p 19].

⁴³ And so the feeling that "Everything in the periphery is quiet" [Wallnöfer 2000]; the increased PSNS afferent (body to brain) activity is also an indication of an increased PSNS efferent activity (brain to body neuronal signals).

8. Windows of Affective Tolerance

8.1 Preamble

Siegel suggests that human psychological Well-Being comes about through emotional integration [Siegel 2007; 2009; 2010B]. If we are in a state of distress – for example, if we are suffering from anxiety / FEAR – we will not have an inner feeling of integration / Well-Being.

Mammalian defence systems and their related emotions evolved over aeons. Each of us alive today reflects the fact that our ancestors had very effective defence strategies. These defence strategies tend to become maladaptive in those of us who have suffered from severe / recurrent traumas in childhood (physical, mental and psychological): they subsequently manifest themselves as “procedurally learned physical tendencies” (Ogden 2009 p 206); in this sense they become inflexible tendencies. These tendencies will manifest themselves either in the direction of hyper-arousal, in which we feel “too much”, or hypo-arousal, in which we probably feel “too little” [von de Kolk 1994, quoted by Ogden 2009 p 216].

Human well-being can be seen in terms of the extent to which we are able to live our lives within reasonable physiological limits – thus avoiding recurrent hyper- or hypo-arousal states. If we move beyond these reasonable limits repeatedly, we may go beyond the “elastic limit” of our bodily systems, and ill health may be the result [McEwen⁴⁴ 1998; 1994; McEwen & Lasley 2003; and B17 of this website].

We normally think of disease as being caused by specific factors; Aaron Antonovsky was interested in the fact that many people remain well despite suffering severe stressors / abuse / deprivation. So he argued that we should put more emphasis on what keeps us well⁴⁵ rather than always focusing on what makes us ill. One of the factors that seems to promote well being is what he called a “Sense of Coherence”⁴⁶ (Eriksson, Lindstrom & Lilja 2007; Wikipedia A 2013 on Aaron Antonovsky). The modern discipline of Positive Psychology reflects in some ways Antonovsky’s concepts; and Autogenic Training [perhaps better called Autogenic *Resilience* Training⁴⁷], along with Positive Mental Training and Mindfulness, all focus in one way or another on restoring and promoting inner well being and a sense of coherence.

Pat Ogden’s model of the Window of Affect Tolerance [Ogden 2009 pp 223-225] has relevance for all of us, as it covers both those who have a narrow window of tolerance and those who have a wide window. If we are blessed with a wide window of affect tolerance, and don’t think much about these matters, then it may help us to understand better those whom we frequently find are distressed.

8.2. The Window of Affect Tolerance [Ogden 2009]

The ‘window of affect tolerance’ refers to an optimal arousal zone within which emotions can be experienced and processed effectively. Hyper- or hypo-aroused states exceed the window of affect tolerance and are not conducive to the efficacious processing and resolution of emotional states. Trauma and maladaptive attachment tendencies will narrow the window of tolerance, and it is essential to expand these boundaries⁴⁸.

Ogden 2009 p 223

⁴⁴ Bruce McEwen describes going beyond the ‘elastic limit’ in terms of Allostatic Load – i.e. “when protection gives way to damage”.

⁴⁵ He coined the term Salutogenesis to describe this. Wikipedia has a helpful entry regarding this: “Salutogenesis” is a term coined by Aaron Antonovsky, ^[1] a professor of medical sociology. The term describes an approach focusing on factors that support human health and well-being, rather than on factors that cause disease. More specifically, the “salutogenic model” is concerned with the relationship between health, stress, and coping” [Wikipedia B 2013].

- Note: Latin salus: health; Greek genesis: origin.

⁴⁶ Which in broad terms we can equate with emotional integration.

⁴⁷ Autogenic Training as developed by Johann Schultz in the 1930s [Schultz 1932; Schultz & Luthe 1961] is actually a form of resilience training. The term Autogenic is not widely known or understood [“generated from within”; a self generated healing and resilience life-training]; and it is suggested that Autogenic *Resilience* Training may be a more user-friendly term; note that this can be abbreviated to ART.

⁴⁸ i.e. in the context of psycho-therapy (and personal development) [IR].

^[1]Antonovsky, A. "Health, Stress and Coping"
San Francisco: Jossey-Bass Publishers, 1979

8.2A Narrowed Window of Affect Tolerance [Ogden2009]

If we are very distressed, it is very difficult to effectively deal with life, and day to day problems. We all have a comfort zone, which we can call the Window of Affect Tolerance [WoAT], in which our arousal is such that we can operate effectively. If our level of arousal is too low – say we are slumped and feel low, that is outside the WoAT; in the same way, if we are in a hyper-aroused state, we will be outwith our effective window.

Some of us will have a wide WoAT, whereas others will have a much smaller window. If we have a small WoAT, it means that any small upsets can result in us being, for us, too hypo or hyper-aroused. This narrow window of tolerance is illustrated in Figure 6.

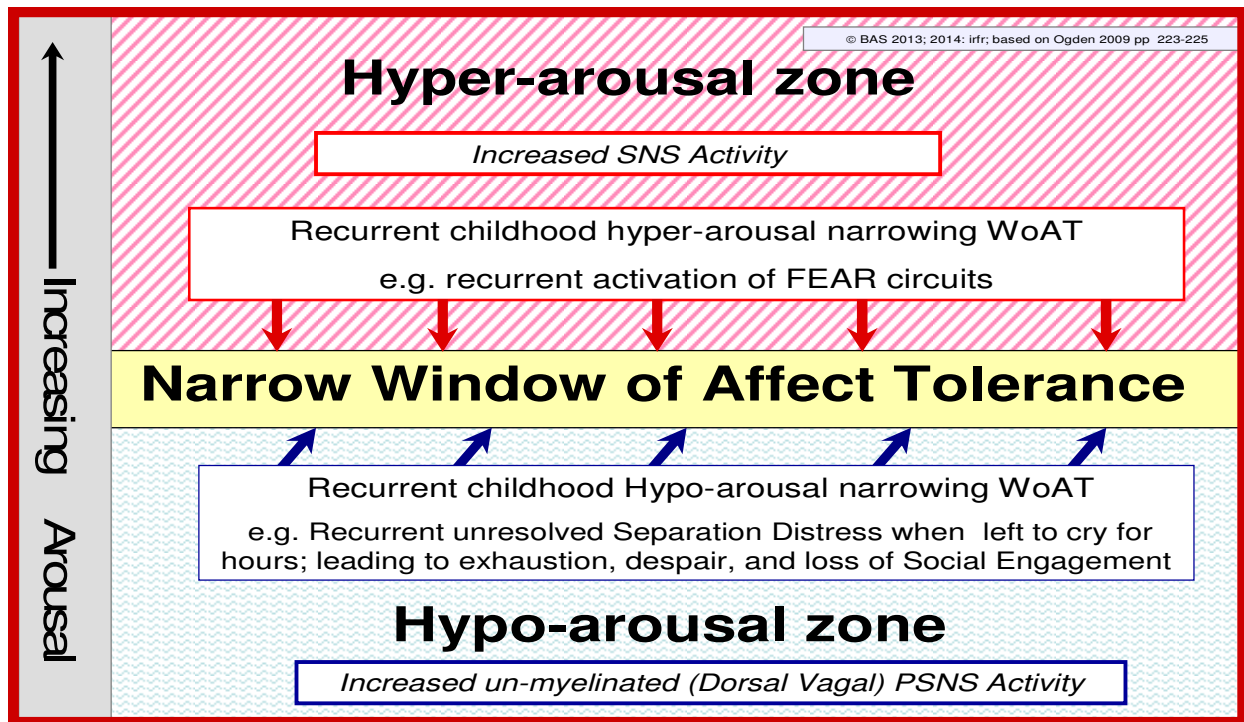


Figure 6

Window of Affect Tolerance narrowed by childhood traumas
 Based on, and extrapolated from, Ogden 2007

Comments of Figure 6

- This illustrates the situation in which we have a narrow Window of Affect Tolerance as a result of growing up in a dysfunctional family.
- This schematic model illustrates that most of the time we are in either the hyper-arousal zone or the hypo-arousal zone; so only infrequently are we in a zone of Affect Well-Being.
- As a result of recurrent hyper-arousal states in childhood [such as the repeated activation of FEAR and PANIC circuits], our WoAT will be, in terms of Figure 6, “squashed down from above”. Such hyper-arousal states are associated with excessive SNS activity.
- In a similar way, recurrent hypo-arousal states limit the WoAT. Such hypo-arousal states are associated [in the adult context] with activation on the un-myelinated vagus [Dorsal Vagal].
- It is as though the recurrent hyper and hypo states squeeze the WoAT so that it becomes narrower and narrower (as indicated by the arrows in the above figure).
- A narrow window of Affect Tolerance can be reframed to mean that most of the time we are not within the window – because we are in a distressed hypo- or hyper-arousal state.

If we have such a narrow window of Affect Tolerance, much of the time each day we will either be at the border of our tolerance zone; or have moved into the distressing hyper- or hypo arousal zone.

8.2B Widening the Window of Affect Tolerance [Ogden 2009]

One of the aims of therapy is to expand and enlarge such a narrow WoAT. This can be done by working at the margins of Affect Tolerance. If the therapist pushes matters too far in, for example, the direction of hyper-arousal, this can re-create the physiology of the original traumas and may actually exacerbate / re-traumatise the individual – partly by activating State Dependent Memory⁴⁹. This can also be a problem in those suffering from Post Traumatic Stress Disorder, where going over the traumatic events can make matters worse. On the other hand, if the “therapy” remains simply within the WoAT, this is unlikely to be effective.

This all implies that for (psycho-) therapy to be effective, it must be safe, yet not too safe [Bromberg 2011; Ogden 2009]; this means it has to embrace operating within distressing / painful areas, yet ones that can be monitored by the therapist to prevent the patient / client entering into excessive hyper- or hypo- arousal states that can end up re-traumatizing the individual. In the context of Autogenic Neutralisation⁵⁰, skilled therapists such as the late Vera Diamond, when the client is moving toward excessive distress, invite her or him to briefly return to, for example, “My right (left) arm is heavy.....” [RAH; LAH], which has the effect of stabilising / down-regulating the SNS over-activity and at the same time increasing PSNS (vagal myelinated) activity: and thus at least resulting in a partial return to Social Engagement / a partial Relaxation Response (through the conditional stimulus of the phrase RAH).

Figure 7 illustrates the “safe but not too safe” zones of effective therapy.

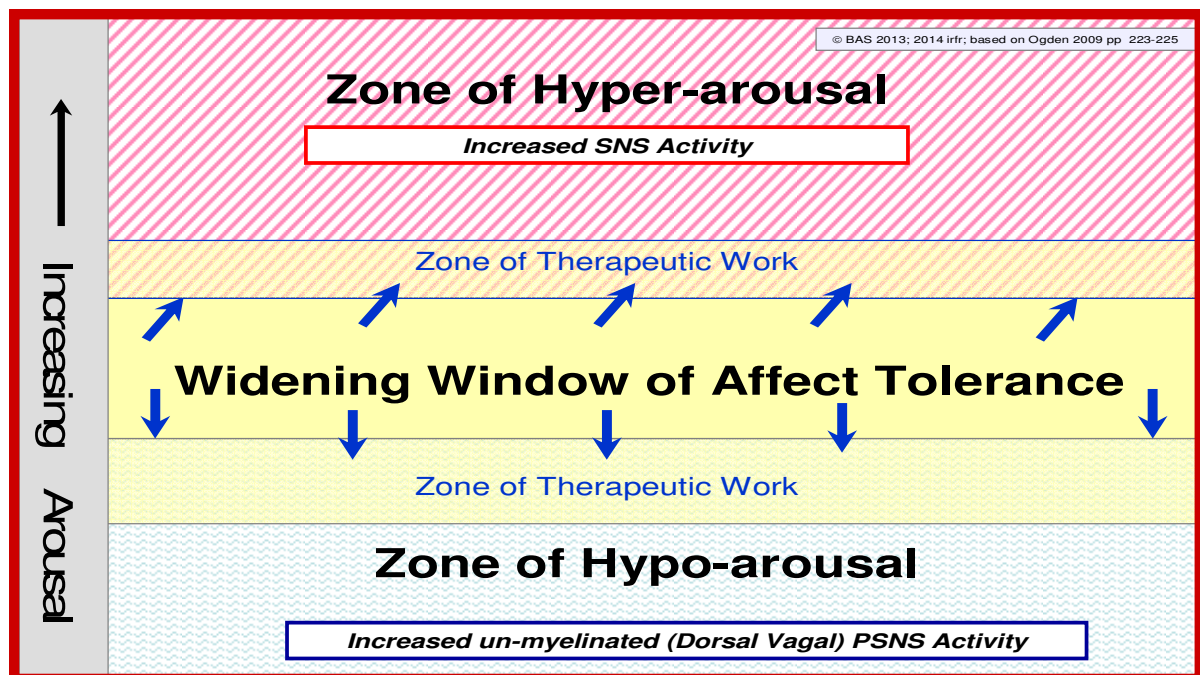


Figure 7

Window of Affect Tolerance being potentially widened by appropriate therapeutic work at the border of hyper and hypo arousal.

Based on Ogden 2007

⁴⁹ However, activating State Dependent Memory can also be used therapeutically; see for example: Rossi 2002 p 38; pp 347-349. Note: State Dependent Memories are those memories that are re-activated when the particular physiological state that the original memory was formed in recurs. I think that the reverse is true: the remembrance of a memory can bring back the physiological state we had with the original memory [e.g. Fear; Joy; Tender Feelings].

⁵⁰ The term “Autogenic Neutralisation” [AN] is not entirely satisfactory; the term “Autogenic Transformation” would seem to me to be more appropriate. [IR had about 12 sessions of AN with VAD over about 15 months (2003-2004); Vera also had some reservations about the term “Neutralisation” in this context. Traumas, when worked through, are better seen in terms of becoming transformed into rich compost from which new shoots can arise and flower in future springs.]

Comments on Figure 7

- The therapist by this stage will have established a reasonable working relationship with the person in therapy.
- For effective treatment, it is essential to move out of the present Window of Affective Tolerance and into the zones of hyper- or hypo arousal; yet not too much and not too quickly – which could lead to disintegration.
- Initially, it may be more important for the client's attention to be focused on the feelings in the body, rather than explicitly on a specific emotion. She or he is thus taught to tolerate some degrees of physiological distress at the zones of discomfort.
- The blue arrows indicate the potential widening of the Window of Affect Tolerance with such therapeutic work.

As indicated above, the zones of therapeutic work are at the borders between Affect Tolerance (and therefore reasonable comfort) and the distressing states of hyper- or hypo- arousal.

Ogden comments that such therapeutic work, especially in those who have developed inappropriate "procedural tendencies", is not about the client (at this stage) getting in touch with their emotions, which will in the early stages of therapy tend to be too overwhelming – and thus result in excessive hyper- (or hypo-), arousal. Rather, the client is invited to feel, to notice and note, what is going on within the body in terms of *bodily* sensations.

.....through attending preferentially and exclusively to sensori-motor processing when arousal is at the edge of the window of tolerance, patients learn that the overwhelming arousal can be brought back to the window. This can be done independent of any particular emotional or cognitive content. Noticing and changing somatic tendencies in the present to the exclusion of emotions and content limit the information to be addressed to a tolerable amount and intensity that can be integrated, facilitates affect regulation, and paves the way for future work with strong emotions without causing excessive dys-regulation.

Ogden 2009 p 226

At the heart of Ogden's approach to helping those who daily experience profound affect Dysregulation is a concept of "directed mindfulness". As already discussed, mindfulness embraces "paying attention, in a particular way, on purpose, in the present moment, non judgementally" [Kabat-Zinn 1994; p 4]. Ogden comments:

When patients' mindfulness is not directed, they often find themselves at the mercy of the elements of internal experience that appear most vividly in the forefront of consciousness – typically, the dysregulated aspects, such as panic or intrusive images, which cause further Dysregulation, or their familiar attachment-related patterns. An example of nondirected mindfulness would be a general question to a dysregulated patient such as: "What is your experience right now?" An example of directed mindfulness that guides a patient's attention toward meeting the goal of becoming more grounded would be: "What do you notice in your body right now, particularly in your legs?"

Ogden 2009 p 222

Ogden goes on to say that in such situations the patient is likely to respond that she (he) feels nothing in her legs, "which paves the way for generating sensation and movement in her legs by bringing her attention to them, thus promoting the therapeutic goal of groundedness⁵¹" (Ogden 2009 pp 222-223). As we become more grounded, we move towards integration. Being in touch, and staying in touch, with

⁵¹ Separate from this comment by Ogden, one of my Autogenic Students in recent years came up spontaneously with the lovely Personal & Motivational formula: "Nature Grounds Me"^{KC-2013 TYVM}.

what is going on in our body is crucial for our Well-Being and (ethical) judgements [Damasio 1994 – see below].

8.3 Being in touch with our bodies, background feelings, and ethical dimensions (after Damasio)

The ‘being in touch’ with our bodies overlaps with Antonio Damasio’s concept of ‘background feelings’. “Damasio uses the term Feeling to denote the subjective awareness of emotions (Damasio 1994; 2003). He also uses the term background feelings to denote the minute by minute subjective feeling state that we are in at any one moment that may or may not be a classical emotion such as fear or joy. We could say that the inner state of the body is constantly being monitored (in the brain and periphery) and that this gives rise to background feelings”⁵² [Ross 2010 p 271 – extracted from the Glossary].

It is probably true to say that background feelings are a faithful index of momentary parameters of inner organism state. The core ingredients of that index are (1) the temporal and spatial shape of the operations of the smooth musculature in blood vessels and varied organs, and of the striated muscle of heart and chest; (2) the chemical profile of the milieu close to all those muscle fibres; and (3) the presence or absence of a chemical profile signifying either a threat to the integrity of living tissues or conditions of optimum homeostasis.

Damasio 1999, pp 286-287

If we lose these (afferent) inputs from the body for any reason (such as brain trauma), we will not be in touch with these background feelings and this then denies us the “gut” feelings we have as to what we should or should not do [Damasio 1999 pp 212-217]. Over one hundred and fifty years ago [1848], Phineas Gage, a construction foreman for the new railways in North America, suffered a severe brain injury when a metal rod went through his brain, interrupting the nerve fibres that give us information from the body (autonomic afferents). As a result of the injury, his whole personality was changed: he appeared superficially normal, yet his social interactions became highly problematic, and his previous high standards in moral / ethical domains were destroyed [Damasio 1994 pp 4-51].

Brain lesions like the one that Phineas Gage and others have suffered alert us to the fact that without our gut feelings, relayed by our autonomic afferents [see C12 in this series], we cannot make good and ethical decisions despite the fact that our neo-cortex is intact: mind and body inter-are in health. This means effectively that we need the input from our SNS afferents to warn us that the body has picked up, unconsciously, that something is not right – and it is this warning that aids us in making the correct decision; and it is precisely this warning that Phineas Gage – and those with similar brain lesions, do not get.

8.4 Further reflections on directed mindfulness and widening the Window of Affect Tolerance

If we have a history of childhood abuse, the emotions relating to this can be too overwhelming (initially) for them to be expressed safely – including in therapy; they will be far outwith our WoAT. For this reason, Ogden suggests a directed mindfulness approach in which the focus of attention is not on the client’s emotions per se, but rather on her / his bodily sensations. What follows is an introductory account to the wisdom of Pat Ogden’s approach: for further details, please see “Emotion, Mindfulness, and Movement” – Ogden 2009 pp 204-231.

She gives an example of a woman who as a young girl was abused by her father; then, as an adult who had been celibate for years, she began to explore physical intimacy with her boyfriend, but this

⁵² Note that our ability to make appropriate decisions / judgements is modulated by healthy body feedback systems that are grounded in sub-neocortical systems; and the neuro-circuits of core consciousness and primary process emotions are also in deep mid-line structures [Panksepp 1998; Panksepp & Biven 2012 e.g. pp 12-17].

triggered severe Affect Dysregulation [See Ogden 2009 pp 226-228]. In working through the trauma and latent memories in such cases, the first realisation may be one of shame and feeling scared; by focusing on bodily sensations, her posture then begins to adopt the procedural learned tendencies – for example of submission⁵³. Her attention is drawn to her posture..... “Notice your present posture...”

In the course of such enactments, the therapist may notice, for example, micro-movements of the hands, revealing that at an unconscious level they were preparing for a different type of response; not submission, but rather preparing for fight [SNS; RAGE circuits – Panksepp 1998; Panksepp & Biven 2012]. By working through such somatic sensations and feelings, the patient can gradually move from submission and shame [PSNS un-myelinated vagus] to justified anger and RAGE associated with Social Engagement with the therapist [PSNS myelinated vagus]. In this context, the anger can be seen as a triumph [Ogden 2009 p 226-227].

When patients first turn their attention to the body, they typically become aware of disempowering, immobilising defences rather than triumphant actions⁵⁴. But as they learn to extend and refine their mindfulness of the body, they nearly always discover the impulses to fight or flee that were inhibited, for the sake of survival, during the original traumatic events but remain concealed within the body. These empowering actions often first reveal themselves in preparatory movements – barely perceptible physical actions that occur prior to the full execution of a larger movement.

Ogden 2009 p 227

In due course, the aim of treatment is to penetrate to the underlying core affect / emotion; this becomes possible in the developing therapeutic relationship that more and more frequently can enter into positive Social Engagement as a result of the increasingly frequent activation of the myelinated vagal systems [PSNS] bilaterally within the therapeutic dyad. The core emotions described by Ogden in this context are “joy, pride, love and deep resonance within the dyadic context” [Ogden 2009 p 228]; while the primary process emotions will be those of SEEKING, CARE, and PLAY. The positive reframing that can come about in such therapy may enable the patient to gradually make some sense of their traumatic childhood; note that research suggests that the best predictor “of a child’s security of attachment⁵⁵ is not what happened to his / her parents as children, but rather how his parents made sense of those childhood experiences” [Siegel 2010B p 171]. This implies that whether or not we become good / good enough parents ourselves does not so much relate to what actually happened to us as children, but rather, the extent to which we have come to make some sort of sense of our own childhood experiences. [If we are not able to make some such sense, then it is unlikely that we will be adequately *emotionally integrated* – a key aspect of *Well Being*.]

PLAY is crucial for our Well-Being, and can signal the beginning of healing / recovery following severe trauma. Bromberg cites a patient who misses an appointment because she had instead gone for a wonderful run⁵⁶ (in Central Park) – a sign that she is becoming well and no longer so dependent on her therapist [Philip Bromberg; Bromberg 2011 pp 80-88].

⁵³ Modulated by the un-myelinated vagal / floppy immobility that mirrors the adaptive postures that may have been an appropriate response to danger in the impossible childhood situation.

⁵⁴ Janet had commented in 1925 that traumatised patients are “unable to execute empowering actions, or ‘acts of triumph’ ” [Janet 1925 p 669 quoted by Ogden 2009 p 226].

⁵⁵ The dynamics of positive attachment in childhood are crucial for long term well-being [See Bowlby 1969; 1963; 1980; 1986; 1988; Ainsworth & Bell 1970; Schore 2003A; B; C; Sunderland 2007].

⁵⁶ I am here suggesting that such a jog for this woman at this time was a form of PLAY as she was running in a non striving mental mode: “I just had a really great run in Central Park and was walking home and feeling fantastic about the work out I had, *you* know, and saying to myself how great it felt to be able to do this on a Wednesday afternoon.....” [Bromberg 2011 pp 83-84].

Figure 8 illustrates some of the positive dynamics of the therapeutic relationship that can begin to widen the WoAT.

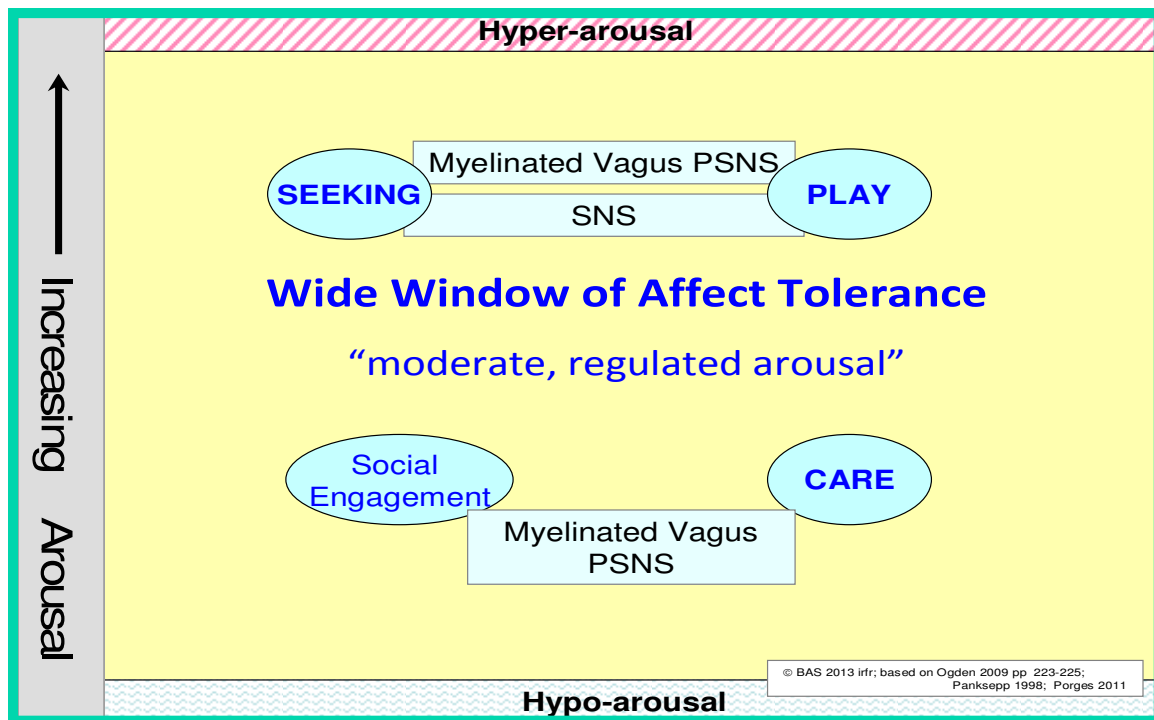


Figure 8

Some neuro-physiological dynamics facilitating a Wide Window of Affect Tolerance⁵⁷

As can be seen from Figure 8, there are at least three primary process emotions that can facilitate widening our Window of Affect Tolerance: CARE; SEEKING; & PLAY; and these are all underpinned by positive Social Engagement, brought about by activation of the myelinated vagus (Porges 2011). The dynamics of Affect Tolerance and PLAY go beyond the simplistic idea that the SNS and PSNS are mutually exclusive; for example, PLAY and SEEKING (fun) involve both the SNS and myelinated vagal system [see, for example, Schore 2003C pp 5-35; and Ross 2010 Essay E5 pp 173-194]. As the therapist-patient relationship develops with increasing trust, the therapist can use PLAY to facilitate positive Social Engagement: in this way high arousal [SNS] can become paired with Positive Affect – in marked contrast to procedural learned tendencies where high arousal was always paired with Negative Affect [Ogden 2009 p 231].

In the concluding paragraph of Pat Ogden's chapter in "The Healing Power of Emotions", she says:

Although addressing emotions (and cognitions) is essential treatment, it is no substitute for the meticulous observation of procedurally learned physical tendencies or the thoughtful interruption of them that teaches patients to use their own movement, posture⁵⁸, and sensation to regulate arousal and expand their own affect-regulating capacity.

Ogden 2009 p 231

This implies that psychotherapy / counselling should increasingly use directed mindfulness approaches to enable us as the client to increasingly notice what is going on within; this is also, of course,

⁵⁷ It may be more accurate to frame these discussions in the following way. Those whose Social Engagement system is normally switched on (as a result of an activated myelinated vagal system and an inner equanimity), will infrequently experience disturbing affect caused by hyper or hypo arousal – so they will normally be operating in a zone of Affective Tolerance.

⁵⁸ While reading over this section I became aware that I was feeling mentally tired and my posture was somewhat slouched; I sat up and realised I was smiling – at the fact it is so easy to know the theory yet not always put it into practice!

an important skill for all of us to develop in our journey through life. Such focused mindfulness will help us to become in touch with the on-going feedback from our Autonomic Afferents – whether these be Sympathetic or Para-Sympathetic [Craig 2005; and see also: C12 “Presence in Mind – *Autonomic Afferents and Well-Being*” on this website]. Mind training disciplines such as Positive Mental Training, Meditation, and Autogenic Training can facilitate this process.

One of the main aims of psychotherapy is to move towards wholeness and Well-Being, and this is reflected in the final sentence of the op cit.:

A comprehensive integration of work with emotion and elaboration of physical actions maximises therapeutic possibility and, over time, inspires patients to engage a wider range of life-enhancing behaviours and affects.

Ogden 2009 p 231

This can come about because our brains, throughout life, are not fixed; rather, we can enhance our potential by widening our own window of affect tolerance⁵⁹. The play therapy mentioned in Part I, in relation to the 6 year old Dibs, indicates how important PLAY can be for all of us – whatever our age. Note, for example, the expressions “to play the piano / flute” and “to play T'ai Chi”.

9. Origins of developing a Wide Window of Affective Tolerance

We will end this brief account of the work of Pat Ogden with a somewhat playful “cartoon” that emphasises the vital role of the myelinated vagus in allowing the young child to develop her or his Social Engagement skills in the context of a “good enough parent”.

This should be seen in the context of what happens if, for what ever reason, infants and children have a parent who is in some respects “not good enough”⁶⁰: this will then interfere with the youngling’s ability to develop her / his Social Engagement Skills.

Basically, the expression of social engagement behaviours is dependent upon the regulation of visceral state by the vagal brake. If visceral homeostasis is challenged and the vagal brake is unable to regulate the visceral homeostasis, then social engagement behaviours will be minimised.

Porges 2005 p 40

The vagal brake, as previously discussed, is modulated by myelinated vagal efferents (i.e. to the heart from the brainstem nuclei). Visceral homeostasis will be challenged in situations that are not felt to be safe – for the child this will include: fear [e.g. being shouted at]; and the parent repeatedly being absent in body or mind – both of which will lead to Separation Anxiety⁶¹.

⁵⁹ A general comment about the concept of the Window of Affect Tolerance: it seems to me that those who have a “wide” Window of Affect Tolerance may have this because they are normally operating with little hypo or hyper arousal – as these defence strategies are rarely activated in them. How such people would actually deal with the recurrent distressing hyper and hypo arousal states experienced by those with a narrow Window of Affect Tolerance is a moot point [See also B19 in this series]. Hyper- (and hypo-) vigilant states, in evolutionary terms, arose as a result of some danger, and to that extent are motivators to change the situation so that we are no longer in danger. Procedural learned tendencies arise as a result of dysfunctional family (parental) dynamics through Pavlovian type conditioning; as a result, these tendencies are “fixed” and the hyper arousal state becomes a de facto normal operating state – with the motivation to change the state eclipsed. Ogden’s works indicates that such tendencies are not permanently “fixed” in the hands of a skilled therapist; in order to achieve change and learn, we need to develop a “Growth Mindset” [see B14 on this website].

⁶⁰ In terms of nurturing skills etc; no judgement implied. [See also Sunderland 2007; Axline 1964]

⁶¹ Which can of course result from psychological as well as physical separation.

Figure 9 below illustrates a mother dealing appropriately with her distressed offspring.

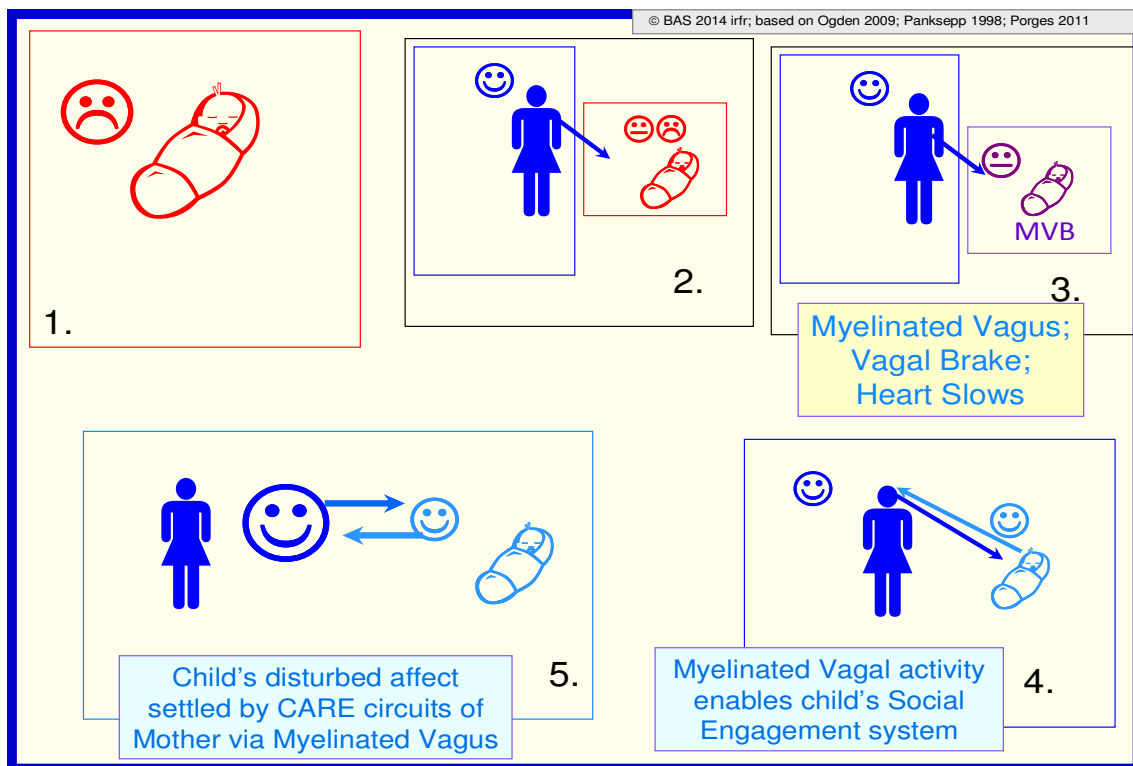


Figure 9

Cartoon representation of Mother's ability to settle her distressed child via own CARE circuits and child's myelinated vagal system

Reflections on Figure 9:

- i. The infant becomes distressed – for whatever reason.
- ii. The mother's gentle nurturing manner engages with her child (including close physical contact / cuddling – not actually illustrated in diagram).....
- iii.resulting in a stimulation of the child's myelinated vagal system to the heart, thus reducing the youngling's heart rate [MVB: Myelinated Vagal Brake];
- iv. as a result of this myelinated vagal activity, the special visceral efferents⁶² are activated – these innervate the striated muscles of the face [Porges 2005 p 41], and give rise to the child's social engagement smiling response.
- v. The original distress of the child has settled, and the mother-infant dyad now embarks on a two-way mutual dialogue – in terms of interacting facial expressions and vocal communications.

This mutual two way dialogue, repeated frequently on a daily basis, forms a firm foundation for the child developing both Social Engagement Skills and a wide window of Affect Tolerance.

Ian Ross
May 2013 – April 2014

Linked themes /

⁶² So called because they are derived, embryologically speaking, from the ancient gill arches [Truex & Carpenter 1969^{ref} Porges 2005]

[Linked themes in this Autogenic Dynamics section](#)

A1	The Stress Response, the Relaxation Response, and the Tend-and-Befriend Response
A7	Porges and the Polyvagal Theory – <i>reflections on clinical and therapeutic significance</i>
A8	The Polyvagal Theory and a more sympathetic awareness of the ANS
B3	Part I: The Origins of Affect and Affective Neuroscience – <i>and the misplacing of Affect in the neo-cortex</i>
B3	Part II: Emotional Operating Neuro Circuits – <i>a brief introduction to Panksepp's model</i>
B10	Snakes, Conditional Stimuli, and Equanimity - <i>approaches to treating mind body disturbances</i>
B15	Towards a Growth Mindset – <i>based on the work of Carol S Dweck</i>
B18	The Space to Choose – <i>reflections on the gap between the stimulus and the response</i>
B19	Reflections on a Secure Base – Attachment and Autogenic Dynamics
C3	Resonance Circuits, Mirror Neurones, and Mindfulness
C12	Presence in Mind – <i>Autonomic Afferents and Well-Being</i>
D1	Reflections on Foundations for Mindful Living

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⁶³ No relation to Ian Ross

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