

## The Space to Choose – reflections on the gap between the stimulus and the response [After Frankl]

Between the stimulus and the response there is a space.  
In that space is our power to choose our response.  
In our response lies our growth and our freedom.

Frankl [? 1946]

### 1. Introduction

Every day we encounter countless things, which affect our being and behaviour. From the scientific / psychological perspective, these countless things are regarded as stimuli, and in one way or another these often result in a response – in terms of physiological effects, emotions arising, and behaviour.

However, between the stimulus and the response there is a gap, a space: while this space can easily be taken over by unconscious processes that result in an automatic – and therefore often mindless – response, this is not inevitable. We can become mindful of what is going on in the gap, and this increased awareness (sometimes called meta-attention) can enable us to respond mindfully – rather than mindlessly.

Figure 1 illustrates a situation in which the stimulus leads to an automatic response which we may subsequently regret.

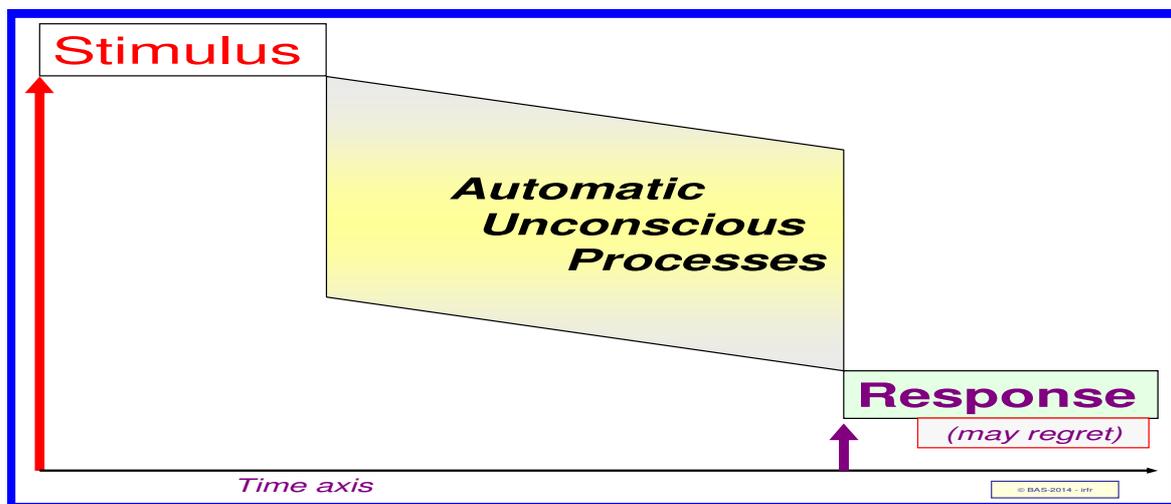


Figure 1

### The Gap between the Stimulus and the Response

The stimulus may be more or less anything – for example: a loud noise; an angry face; a letter or e-mail; a child smiling; a bird singing; or the thought of meeting someone next week.

The response to these, as illustrated in Figure 1, is the result of unconscious, automatic processes within the brain / body, leading to the action / behaviour that we may subsequently regret; for example, the stimulus may have resulted in anger / RAGE, which we then act out on “Automatic Pilot”. We can regard such a response as mindless, for it implies that we have, as it

were, fallen back on our in-built automatic response tendencies without engaging our Pre-Frontal Cortex (PFC).

In the second section of this paper, we will look at these matters in terms of the Refractory Period, a concept introduced some years ago by Paul Ekman; and in section 3 we will return to some other dynamics implied by Victor Frankl.

## **2. Emotional Triggers and the Refractory Period**

Epictetus once said:

“Men are disturbed not by things, but the views they take of them.”

Epictetus; first century Greek Philosopher.

How we respond to these things (the stimuli) will greatly affect our Well Being. As already indicated, the response is often largely determined by automatic and unconscious physiological processes that we may imagine we have no control over<sup>1</sup>. This is not exactly the case, in that mental training can alter the dynamics of our PFC, and this in turn can alter what we may previously have regarded as disagreeable feelings over which we have no control. Negative feelings can of course result in actions which we subsequently regret.

The gap between the disturbing event [i.e. the stimulus] and our automatic physiological response is sometimes called the Refractory Period<sup>2</sup> – and is associated with *unconscious* “Automatic Appraisal” (Ekman 2003 / 2007; Dalai Lama & Ekman 2008<sup>3</sup>). For example, an e-mail [the trigger] may result in fear, anger, jealousy, feelings of tenderness – or any other emotion. Figure 2, on the next page, illustrates a situation in which our RAGE circuits (Panksepp 1998) become activated.

During the Refractory Period, as described by Ekman, we are not able to be mindful; we are in effect taken over by the physiological state that has resulted from the trigger.

Emotions (also) filter the knowledge that is available to us. When we are in the grip of an emotion, I have proposed that we are in a “refractory period,” during which we can only remember information that fits the emotion. Often a refractory period is very short-lived, and when that is so, it can be helpful, by focusing our attention. For moods, a refractory period can last a whole day, and all of that time we are misperceiving the world. We do not have access to everything we know, only to what fits our mood.

Ekman 2008 p 13 IN: Dalai Lama & Ekman 2008

<sup>1</sup> The extent to which we have control over the physiological response to a given trigger is to some extent limited; for example, the visual thalamus–amygdala pathways set in motion behaviour patterns (such as running away from danger) before we have become conscious of the danger – see for example the work of LeDoux, discussed on this website: B10 – “Snakes, Conditional Stimuli, and Equanimity – *Approaches to treating mind-body disturbances*” [see especially Figure 1 on page 1]

<sup>2</sup> Please note that the Refractory Period is discussed more fully in B4 of this website [“Emotional Triggers and the Refractory Period”]; here we are using the Refractory Period really as a preamble to discussing Frankl’s concept of “the space to choose”.

<sup>3</sup> Note that Ekman sometimes describes this in term of the spark (the emotional trigger) and the flame (the behavioural emotional response) [Ekman 2008 e.g. page 44].

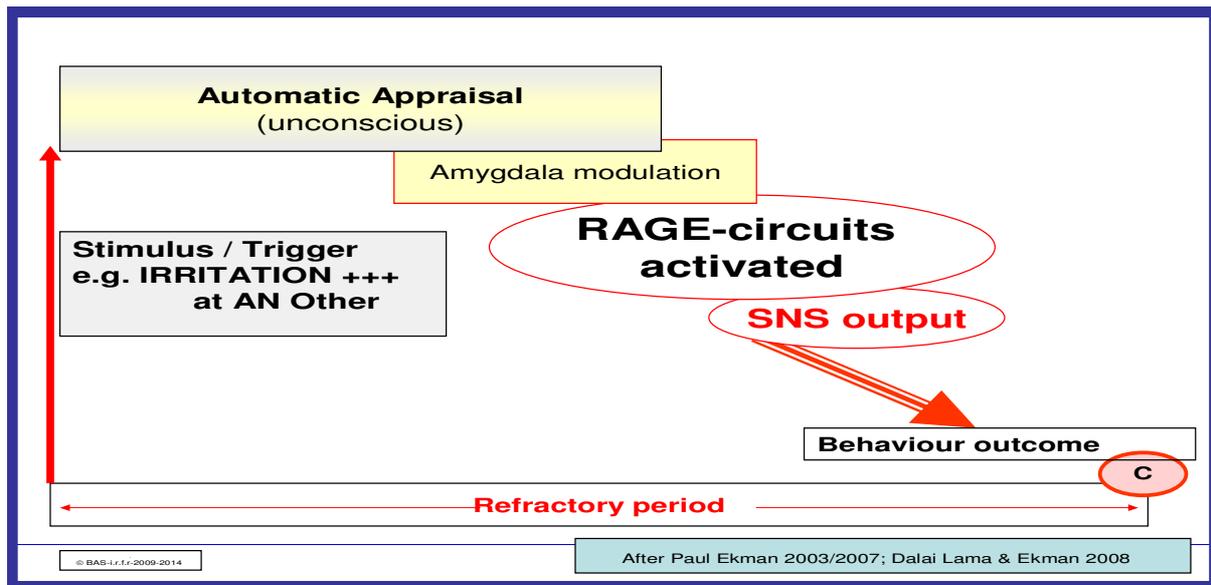


Figure 2

Irritation triggers can lead to RAGE-circuits being activated

Comment on Figure 2:

The RAGE-circuits are activated during the unconscious Refractory Period, when communications with the neo-cortex are closed down; only later can we become **C**onscious (and Mindful) of what is happening – depicted by **C** in the figure; by then our behaviour may already be manifesting itself.

Note:

- the extended refractory period;
- RAGE circuits are associated with an increase in blood supply to the arm and hands [Ekman 2008 p 41; Ekman et al 1983].

The example of Figure 2 above happens to be one associated with irritation. The trigger here may have been a remark by another person, which we may have mis-construed / made [false] assumptions about [Riu 1997]. On the other hand, the trigger might be a sad memory, a look of distress on a child's face, or a delicate flower. In each case, the stimulus can elicit different feelings – sometimes negative, sometimes positive, sometimes neutral. For example, a sad memory may activate our GRIEF circuits (associated with primordial Separation Anxiety – Panksepp 1998; Panksepp & Biven 2012; and B3 Part I & B3 Part II on this website).

One of the reasons for us misperceiving the world is that negative / destructive emotions – such as FEAR and RAGE and / or an inner desire for revenge and / or jealousy – result in a blockage of communications between the amygdala and the neo-cortex; so we can no longer access mental dynamics other than those imposed by physiological state of the activated emotion. [Some of these dynamics are illustrated in B16 (Figures 4 & 5) of this website].

The Dalai Lama and Paul Ekman in conversation

While discussing the role of emotions in the context of mindfulness with the Dalai Lama, Ekman says:

To have a choice about how you are going to enact an emotion you must be aware of the emotion as it is arising, of “the spark before the flame,” or, in Western terms, the impulse before the action. Then, if you are aware in your consciousness that an emotion is arising, you should be able to adjust the level and the way you respond.

Ekman 2008 p 23 IN: Dalai Lama & Ekman 2008

The Dalai Lama replies:

This is very true, because in the meditation texts there is the role of the two main faculties that are being constantly applied – one is mindfulness and the other is what Alan Wallace calls “meta-attention,” a form of self awareness<sup>4</sup>.

Dalai Lama 2008 p 23 IN: Dalai Lama & Ekman 2008

As we become increasingly mindful, we are able to tune in to the present state of the body [i.e. increased awareness / meta-attention], and so change the automatic response that comes about as a result of a prolonged Refractory Period, which by its very nature is unconscious. That is, by becoming conscious and aware, we shorten the refractory period and what might have been its inevitable, physiological, outcome [e.g. anger turning to RAGE with resultant physical or verbal violence]. Mindfulness practices, such as Positive Mental Training, Meditation and Autogenic Training, can reduce this refractory period, and such practices are associated with the development of meta-attention [Dalai Lama (Dalai Lama & Ekman) 2008 pp 23-24]. Some of these dynamics are illustrated in Figure 3.

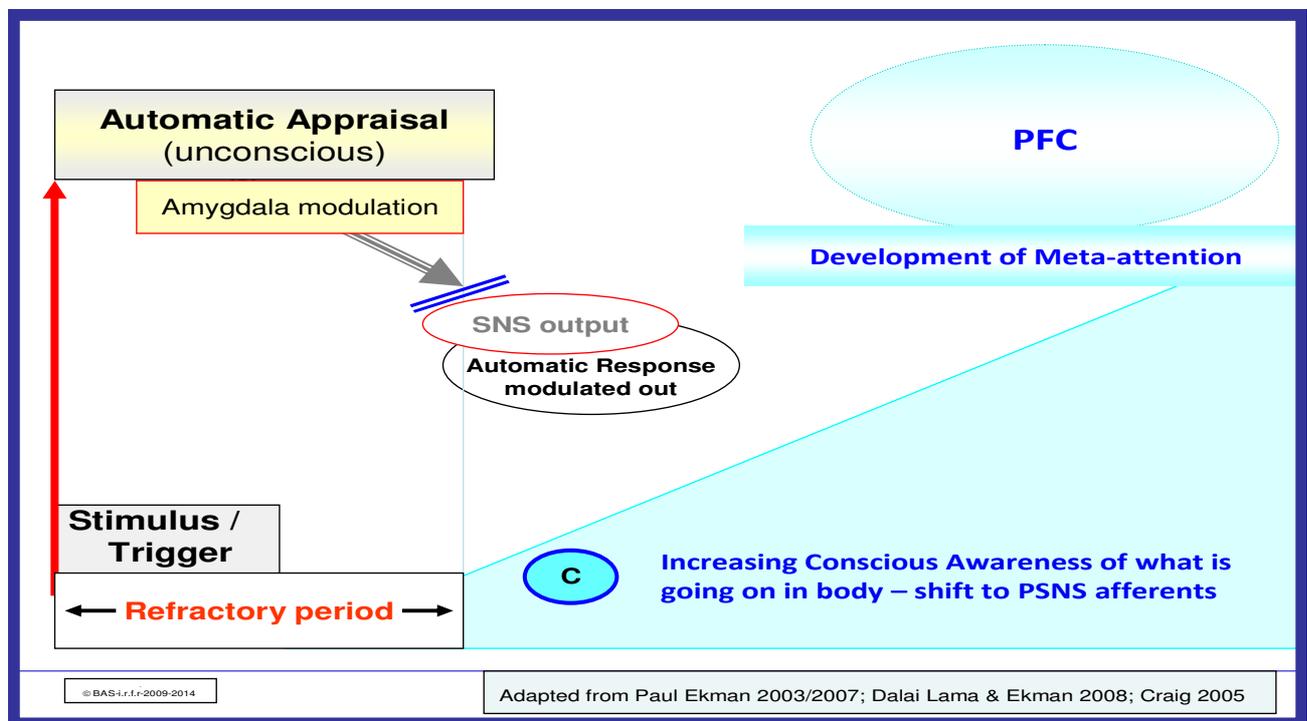


Figure 3  
Meta-attention and modulating-out inappropriate responses

Comment on Figure 3:

Meta-attention is modulated particularly in the Pre-Frontal cortex [PFC] region of the neo cortex; mental training facilitates changing the dynamics of the PFC – and thus in the development of meta-attention.

Note the much shorter Refractory Period compared to Figure 2<sup>5</sup>; and that the automatic response has been blocked at a very early stage. As in Figure 2, C signifies Conscious Awareness of the emotional state of the body, and thus the very early conscious realisation of a problematic physiological state of the body.

<sup>4</sup> Wallace 2007

<sup>5</sup> Note that Figure 2 and 3 above are combined, in a somewhat different format, in the complementary article on this website, B4: “Emotional Triggers and the Refractory Period” [Figure 5, page 5], reproduced here in the Appendix (on page 10).

As we become increasingly mindful, we are able to tune in to the present state of the body [i.e. increased awareness / meta-attention], and so change the automatic response that comes about as a result of a prolonged Refractory Period, which by its very nature is unconscious. That is, by becoming conscious and aware, we shorten the refractory period and what might have been its inevitable, physiological, outcome [e.g. anger turning to RAGE with resultant physical or verbal violence]. The development of this meta-attention cannot be brought about simply by conscious will; that is, it depends upon changes in the dynamics of the PFC brought about by Mental Training.

## **2. The Space to Choose**

Returning to Victor Frankl:

Between the stimulus and the response there is a space.  
In that space is our power to choose our response.  
In our response lies our growth and our freedom.

Frankl [1946]

“In our response lies our growth and our freedom”; that is a remarkable statement. Each day, we have the opportunity to grow and develop our freedom – as we develop mindfulness / meta-attention<sup>6</sup>. On the other hand, if we “always do as we’ve always done”, then there is little opportunity for growth and development – and the refractory period will remain prolonged.

“Between the stimulus and the response there is a space.” The stimulus may result in us feeling angry: and we say “I am angry”. This statement implies that at a deep level we have become attached to our anger. We could say the anger and RAGE circuits have taken over our being. On the other hand, [with mindfulness], in the space we can reformulate what is going on: “Anger is arising within me.” In this phrase we are no longer our anger<sup>7</sup>; it has not taken us over; we “have gone down another street!” [See Autobiography in Five Short Chapters - Portia Nelson (also handout Zz-12)].

Mindfulness type practice help us to become more in touch with our bodies, and what is going on within them; in terms of the Autonomic Nervous System, this means that, separate from any primary process emotions that may be arising within us from the deep, midline, sub-cortical structures of the brain [Panksepp 2010; Panksepp & Biven 2012], we will also be getting feedback from the body through both Sympathetic and Para-Sympathetic Afferents [see C12 in this web series]. This can actually alert us to arising emotions within us.

At one stage in the Dalai Lama–Ekman conversations, Ekman suggests that breathing exercises [as in meditation] can help. The Dalai Lama initially disagrees, having misunderstood what Ekman is implying; the Dalai Lama does not feel that breathing exercises can help to off-set a

<sup>6</sup> Note that we cannot consciously, by cognitive effort, change / reduce the refractory period per se; however, mindful practices, for example, develop our meta-attention: this results in a shortening of the refractory period by unconscious dynamics.

<sup>7</sup> “Anger is arising within me” is a form of Affect Labelling [see B12 on this website]; whereas with “I am angry” we are not labelling the anger, we are the anger, as it were.

rising (negative) emotion once it has been triggered. Ekman responds: “Oh no, I am not saying that you should focus – I do not think in the midst of an emotional episode you can start focusing on the breath – but will engaging in meditative practice make it more likely that you will be aware of when you are being emotional?” Dalai Lama: “That is true, that is true, because you are cultivating the skill of mindfulness generally.” [Dalai Lama & Ekman 2008 p 204].

Once we are really in the grip of an emotion<sup>8</sup> [e.g. FEAR; RAGE] I think this is the case (i.e. that we cannot simply focus on the breath to settle the body); on the other hand, right at the beginning of a potential emotional upset I feel that we do have the potential to off-set / knock out the rippling start of a negative affect. A Partial Exercise for the Autogenic practitioner such as “Neck and Shoulders are Heavy” has already, experientially, primed the body to respond with a shift into the Relaxation Response [Benson & Klipper 1975]; and following on from the research of Craig [Craig 2004; 2005; 2008], this implies that the Partial Exercise (or equivalent – including the Three Minute Exercise) can down-regulate rising SNS afferents from the body, and replace them with PSNS afferents; this in turn will down-regulate amygdala activity of, for example, FEAR / RAGE circuits. In addition, by developing a nurturing and CARE-ing attitude to ourselves, it is more likely that we will be producing healing informational substances – such as oxytocin – which themselves can act as an anti-dote to potentially destructive emotions such as FEAR and RAGE [Panksepp 1998; also see B3 Part II on this website].

In human interactions between two people, a complex two way communication process is involved: if our bodies are tense – with resultant SNS afferents dominating – we will not be in a good space to choose an appropriate response to say a gesture on the face of another person, or what they say. In this situation, it is very easy for us to start watering the negative seeds in the other (see D3 on this web series). When this happens, if we are not very careful, we will find the negative interactions will result in a mutual watering of each other’s negative seeds – and this may well set in motion negative / toxic feelings within us – with a lengthening of the refractory period – so that the next thing we realise is a movement within us towards, for example, verbal or physical violence.

On the other hand, if we have started the day say with a Meditation or an Autogenic Sequence, it is more likely that the PSNS afferents will be dominant, and the brain interprets this as “Everything in the periphery is quiet” [Wallnöfer 2000]. This then enhances positive Social Engagement circuits [Porges 2005; 2009; 2011; and A7 & A9 in this web series]. In this situation, we are far more likely to be able to water each other’s positive seeds, and as we are relaxed the FEAR / RAGE circuits [Panksepp 1998], for example, will be down-regulated, and our cognitive / mindfulness abilities will be enhanced [this down-regulation – in terms of amygdala activity – is illustrated in Figure 7 of B1 in this series]. At the same time, our CARE and PLAY and spontaneous circuits will be enhanced, with a reduction in the refractory period. In this situation, we are not on “automatic pilot”<sup>9</sup>, but rather are entering the domain of Well Being – and hence we have the space to choose an appropriate mindful response.

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There was once a man who asked an expert: “Can you please tell me the way to Beijing?” The expert replied: “Well, if I was going to Beijing I would not start from here.” Sometimes in life, when things go wrong, we may feel the same: “I don’t really want to be here.” This can be

<sup>8</sup> When we are in the “grip of an emotion” the neuro-physiology of that emotion has actually taken us over.

<sup>9</sup> A term used by Segal et al in their excellent book: “Mindfulness-Based Cognitive Therapy for Depression” [Segal et al 2013; e.g. p 108] Actually, it is really a Mindfulness based approach for depression; many of the effective CBT strategies outlined were well know millennia ago in the context of Mindfulness and Meditative approaches.

especially the situation following severe loss – and for carers<sup>10</sup> there is often the added loss of the loss of a dream<sup>11</sup>. Yet to go around in our heads wishing we were not where we are is to get hooked into negative unhelpful ruminations and the mental “doing mode”, as opposed to the being mode. That is, we first have to accept that we are where we are.

### The Space to Choose in Positive Moments

In much of this article so far we have been focusing on negative type triggers – and how we can reduce their impact. We can also, of course, become mindful of positive experiences; once again, there is a space to choose; we can ignore the rain drop on a leaf, or we can look at it in wonder.

This morning Elaine from the care service was looking after my wife Maggie, and I went on a walk to Gullane Point. It was a grey day – with no sun and intermittent rain. I was thinking over this paper, which I had started yesterday – and ideas kept arising within me. As I was returning along a path, I became aware of the beautiful gold and yellow colourations of the dying bracken: and so floated as it were fully into the being mode: Present Moment, Wonderful Moment [Hanh 1990].

“Between the stimulus and the response there is a space.” Whenever we see the moon, hear a blackbird singing, or see the smile on a child’s face, there is a space that can transform our being if we choose in that moment to be<sup>12</sup>. There is no road to equanimity; equanimity is the way [after Hanh<sup>13</sup>].

### Epilogue

Everything that we experience in life can be seen in terms of a stimulus that then activates, in one way or another, parts of our brain and being; in the space between that stimulus and our response, with mindfulness, we can alter the outcome. This usually embraces acceptance of whatever is, non-judgmentally, non-reactively; at times it may embrace: a sense of wonder; a sense of gratitude.

Mindfulness can be seen as a boat that allows us to get across a river from the shore of suffering / anxiety / toxic states / depression to the shore of well being; only we ourselves can get to the other side – so we have to work at it [Hanh 1998 p 192]. Actually, moment by moment, step by step, we can be there: “...the true wisdom of life, is that in each step of the way, the other shore is actually reached” [Suzuki 1970 / 1986; p 65].

Some further ways of developing our meta-attention /

<sup>10</sup> This short paper was originally written for carers.

<sup>11</sup> Yet the “loss of a dream” may also mean that what was lost was important to us and that we cared. This may seem an odd remark – yet it reveals our potential for CARE and caring. In a somewhat different context, if we feel a profound loss and foreboding for what is happening to our planet, this actually means that we care for bio-diversity and the eco-system of our planet and future generation; and this can be a catalyst for action [see Macy & Johnstone 2012 – e.g. pp 57 -103].

<sup>12</sup> Remember: at heart we are human beings, not human doings.

<sup>13</sup> Thich Nhat Hanh has said regarding conflict: “There is no way to peace, peace is the way”. See also Hanh 1991: “Peace is every step”.

Some further ways of developing our meta-attention and mindfulness are indicated below:

	Reference <sup>14</sup>
Regular mind-training practice such a Meditation / Autogenic Training	
Autogenic Partial Exercises [e.g.: “Neck and Shoulders Heavy”]	AT-2.1
Off-loading irritations / negative mind states soon after they occur – once we have a suitable opportunity – and preferably at least before the end of the day. This can be by way of Expressive Writing – when appropriate.	EE-08
The Three Minute Exercise [See also Segal et al 2013: e.g. pp 198-197]	EE-10
Affect Labelling – <i>putting feelings into words</i>	Web B12
Developing Mindfulness	Web D1
Reflecting on Danna Paramita	Web D2
Avoid acting precipitously; it can be valuable to sleep before we take action.	
Going for a walk / physical exercise	
Being in nature	

Figure 4  
Some ways of developing meta-attention

#### Linked themes in this Autogenic Dynamics Section:

A7	<a href="#">Porges and the Polyvagal Theory – reflections on clinical and therapeutic significance</a>
A8	<a href="#">The Polyvagal Theory and a more sympathetic awareness of the ANS</a>
B1	<a href="#">Bears, Imagination, and Well Being</a>
B3	<a href="#">Part II: Emotional Operating Neuro Circuits – a brief introduction to Panksepp’s model</a>
B4	<a href="#">Emotional Triggers and the Refractory period</a>
B10	<a href="#">Snakes, Conditional Stimuli, and Equanimity – Approaches to treating mind-body disturbances</a>
B12	<a href="#">Affect Labelling, Autogenic Training and Reducing Emotional Distress</a>
B16	<a href="#">Antidotes to threats our minds create: the soothing and contentment system</a>
C12	<a href="#">Presence in Mind – Autonomic Afferents and Well-Being</a>
D1	<a href="#">Reflections on foundations for mindful living (after Kabat-Zinn)</a>
D2	<a href="#">Dana Paramita</a>
D3	<a href="#">Store Consciousness and Watering our Positive Seeds</a>

Interlinked themes and Handouts [These relate to handouts given to students attending Autogenic Training courses run by Ian Ross – the notations for these handouts were updated during 2013 with the double prefix – e.g. DD.]

• Towards the Authentic Self	DD-01
• Towards a concept of Happiness	DD-03
• Reflections on foundations of Mindful Living	DD-05
• Reflections on The Four Agreements	DD-20
• Positive Visualisation	EE-12
• The story of a King and a Ring	Zz-05
• The story of Li and Po	Zz-06
• Jen and our Original Nature	Zz-7B
• The Guest House	Zz-08
• A Cherokee story	Zz-09
• Autobiography in Five Short Chapters	Zz-12

#### References/

<sup>14</sup> These relate to handouts given to students attending Autogenic Training courses run by Ian Ross – the notations for these handouts were updated during 2013 with the double prefix – e.g. DD.]

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Note: The Appendix on page 10 is based on Figure 5 from the related web article, B4; and what follows is best seen as an integral part of this B18 paper.

Thanks to Annie Sturgeon for her helpful suggestions and proof reading.

## Appendix

As mentioned in footnote 5 on page 4, Figures 2 and 3 of this present paper are combined, in a somewhat different format, in the complementary article on this website, B4: “Emotional Triggers and the Refractory Period” [Figure 5, page 5]. This is reproduced below, followed by a brief [and updated] commentary from the B4 article.

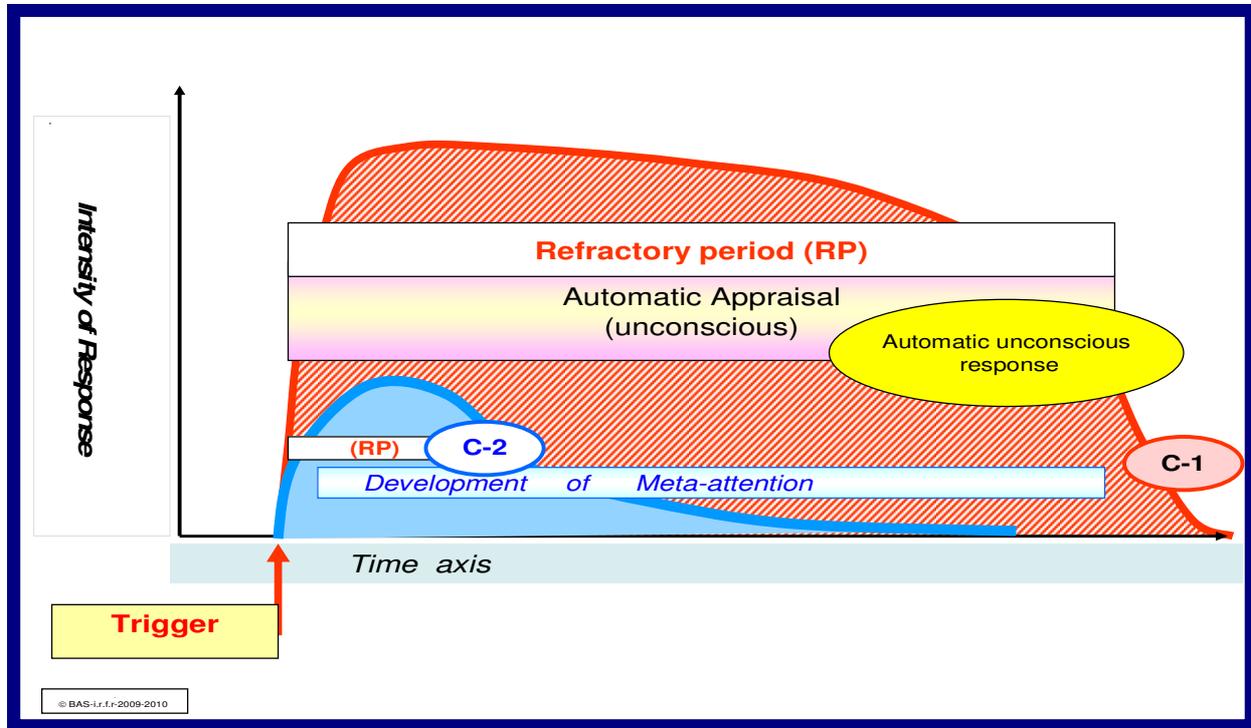


Figure 5

The development of Meta-attention in contrast to the un-skillful (and unconscious) response to a stimulus / emotional trigger [Based on Ekman 2008]

### Comment on the above Figure

- i. The normal response is shown by the red graph, with an extended Refractory Period (RP) associated with the unconscious Automatic Appraisal, and then the automatic response which starts before the conscious awareness (C-1) of the situation develops.
- ii. The development of the skill of meta-attention results in a much reduced Refractory Period (RP) and this is shown in the blue (lower) graph.
  - Here, Conscious awareness (C-2) is realised much earlier, and this effectively leads to the blocking of the unhelpful or counter-productive “automatic unconscious response”.
  - We can reframe this by saying that a shortened refractory period potentially *increases* the gap between the stimulus (spark) and the subsequent behavioural response; in fact, with mindfulness, we can develop the ability to abolish inappropriate emotional responses (the flame – Ekman 2008 p 44).

In conclusion: as we become more mindful of what is going on within us, we can reduce the Refractory Period, and deflect or change our previous inappropriate automatic responses. The space between the stimulus and the response can become part of our training ground, every day, in developing mindfulness, growth, and freedom.