

Reframing, Reappraisal and Well-Being

Introduction

Our health is related to the views and perceptions that we have of the world. Positive outlooks are associated with health and flourishing (Fredrickson 2009; Fredrickson & Losada 2005). Negative views and feeling have the reverse effect. Epictetus, a first century Greek philosopher once said:

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

Epictetus

Recent research into stress has confirmed Epictetus's insight: the most potent cause of the chronic stress response is more to do with our perceptions of the stress(or) we are under than the actual stressor itself (Sapolsky 2007; Ross 2010 pp 44-96). This all means that if we can change our negative views and perceptions of ourselves, others, and the world, this will be of benefit not just to ourselves but also those we are close to. Negative and even entrenched views and perceptions that we have can be changed, or reframed, because our brains have built in systems to allow us to do this.

The systematic training of the mind – the cultivation of happiness, the genuine inner transformation by deliberately selecting and focusing on positive mental states and challenging negative mental states, is possible because of the very structure and function of the brain..... Neuroscientists have documented the fact that the brain can design new patterns, new combinations of nerve cells and neurotransmitters (chemicals that transmit messages between nerve cells) in response to new input. In fact, our brains are malleable, ever changing, reconfiguring their wiring according to new thoughts and experiences.

Howard Cutler 1998 p 31
(in conversations with the Dali Lama)

Our ability to reframe, or reappraise situations, is dependent upon certain crucial areas of the *dorso-lateral* pre-frontal cortex (*dI*-PFC) of the brain, with important connections to the amygdala. Specifically, reappraisal activates the *dI*-PFC, which in turn inhibits fear circuits in the amygdala (see below).

Now if we are feeling fine about something, or some memory of something, we do not (usually) have a need to reframe it. On the other hand, re-appraisal and reframing is a good idea if we are feeling upset / distressed about something, as such reframing has the potential to change our perception of what is troubling us at a neuro-chemical level.

An example of Reframing

Let's say I am entering a bakery / coffee shop on a Saturday morning to buy one loaf of bread – when a man rushes in in front of me to. He starts to order a long list of cakes and loaves of bread, and I become irritated. Now the irritation has nothing to do with the man: it is purely of my own creation. I then reflect that perhaps the man has had a very busy week, and has been sent out by his wife to get these provisions before his in-laws arrive for coffee. Such a reframe can dissipate our irritation / anger; and at the same compassion may arise in us for the other person.

Reframing can be of particular value if we are feeling low or depressed: in this condition we tend to see the glass as “half empty” (rather than “half full”), and the depressed state is associated with negative ruminations and “catastrophising” – that is, always imagining the worst possible outcome in a situation, without realising that this is what we are doing. This tends to lead to a

downward spiral of negative thoughts / ruminations (Segal 2002; Williams 2007). Hence the importance of learning skills that prevent or limit such responses: reframing is one of these.

Negative thoughts and feelings from our past – particularly from childhood, can sap or energy and be very difficult to deal with. Reframing, in the context of meditative practices such as Autogenic Training, can be of great value in such situations (see also C8 & C9 in this Web series).

From the perspective of neuro-anatomy, it seems that the reframing and reappraisal neuro-circuits were built to some extent on pre-existing neuro-circuits to do with Pavlovian type fear-conditioning, and the so called extinction of such fears. So we will now turn briefly to these neuro-circuits, before returning to the theme of reappraisal.

Neuro-circuits relating to extinction of conditioned responses

In the classical Pavlovian research on conditioning¹, it will be remembered that a bell is paired with food, and the dog naturally salivates. If this pairing is repeated several times, we eventually get to a stage when the dog salivates at just the sound of the bell, without any food. The salivation in this context is the conditional response to the sound of the bell, the conditional stimulus.

Now if, over the coming weeks, the bell is repeatedly rung without any food, the conditional salivation response becomes weaker and weaker until it stops, a process called “extinction”. [This is really a misnomer, as it is not extinguished in a permanent sense: for example, if the bell next time is paired with food, then that will re-establish the conditional response immediately – if the bell is subsequently rung without food. However, ‘extinction’ is the word that is used in research.]

The relevance of this is that in humans the FEAR circuits can be set in motion by the equivalent of the bell. If we have a very tall boss, who often shouts at us, we may become fearful. Later, we may become fearful of all tall men (or women). So here tall men become the conditional stimulus, and the fear is the conditional response. These processes are all working at an unconscious level: this means that we will usually have no idea why we are reacting in such a way to all tall men. In actual fact, such conditioning is more likely to be the result of childhood traumas.

In theory, this conditional fear response can be extinguished, just as the salivation was when the bell repeatedly sounded without the food. [We say “in theory” here because in humans fear conditioning is complex and it may become difficult to extinguish; see Ross 2010 pp 275-276 (ex A.E. Dobbin) for a more thorough review of this matter.]

Such extinction circuits involve activation of the ventro-medial pre-frontal cortex of the brain, which reduces fear circuits in the amygdala: this is shown schematically in Figure 1.

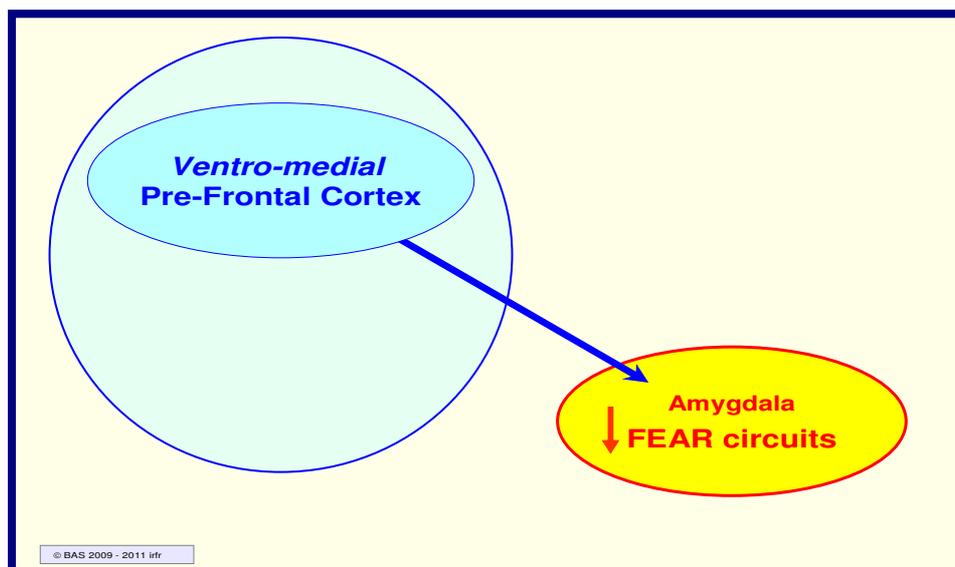


Figure 1
Basic Extinction Circuits

Note: research has shown that the activation of the ventro-medial Pre-Frontal Cortex is associated with reduced activation of the fear circuits within the amygdala (e.g. Delgado et al 2008).

¹ Pavlovian-type conditioning is a complex subject; and here we are simplifying the matter considerably.

With this as background, we will now look at the neuro-physiology of reframing / re-appraisal.

Neuro-circuits of reframing

Re-framing (or re-appraisal²) is associated with increased activation of the *dorso-lateral* Pre-Frontal Cortex (*dl*-PFC) – in contrast to extinction which, as indicated above, involves the *ventro-medial* Pre-Frontal Cortex. There do not appear to be any direct neuronal communications between the *dl*-PFC and the amygdala: however, there is direct communication with the *ventro-medial* Pre-Frontal Cortex (*vm*-PFC), which in turn communicates directly with the amygdala.

Research suggests that the neuro-circuitry of re-appraisal overlaps with that of extinction, and that this forms the neurological basis for the efficacy of reframing (Gross 2002; Delgado et al 2008). In fact, Delgado et al (Delgado 2008) suggest that the re-framing circuits, during evolution, co-opted the pre-existing extinction circuits for their own purpose. These dynamics are illustrated schematically in Figure 2.

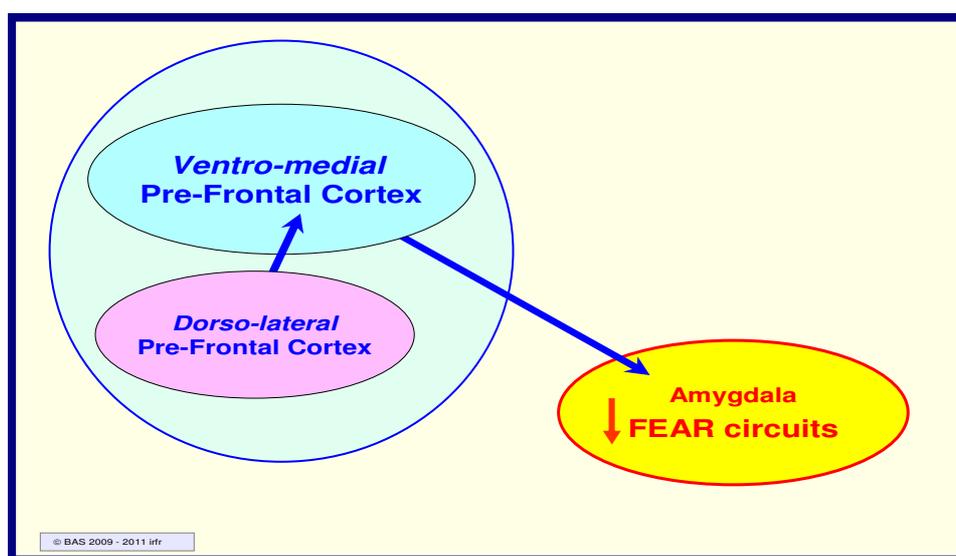


Figure 2

Re-appraisal circuits

Note that these diagrams are highly schematic and do not indicate the actual anatomy of these brain areas.

Reappraisal activates the *dorso-lateral* pre-frontal cortex: and this then is thought to reduce fear circuits in the amygdala via the *vm*PFC (Delgado 2008).

Why is re-appraisal important?

As indicated in the introduction, negative thinking and negative feelings are associated with a lack of well-being. On the other hand, positive feelings and positive thoughts are associated with flourishing.

It may sometimes happen that we have automatic critical thoughts about others (and ourselves) that we are not really aware of: as we become more in touch with our body and our inner feelings, we can reduce these automatic negative thoughts (see B6). Naming or labelling a thought, such as “critical thought arising”, is in itself a type of reframe, and has been shown to reduce negative affect: this skill is associated with the development of Mindfulness (Creswell 2007). We are seeing the thought as something separate from ourselves, with the realisation: “I am not my thoughts” (see C7).

By reframing and re-appraisal we can often move from a negative mental state to a much more positive one. It is the “view we take of things” that affects our well-being. Maggie, my wife,

² Which is sometimes discussed in the context of cognitive approaches to Affective Regulation (Gross 2002; Delgado et al 2008)

was diagnosed as suffering from Alzheimer's disease a few years ago; and it is now in an advanced stage. It is very distressing for all of us in the family. The other day I was reflecting on Beethoven; he died aged 57. Now had Maggie died at that age, it would have been back in 1992. This is a type of reframe, that allows me to see how blessed I was that Maggie remained in good health for a further fourteen years. Despite the on-going distress, there is also a feeling of gratitude for the wonderful years we had together when she was in good health (see also D2).

Mental Training facilitates reframing / reappraisal

Mindfulness approaches are associated with an increased ability to reframe. As already mentioned, depression in particular is associated with negative ruminations – especially recurrent forms of depression. New and effective approaches to depression embrace mindfulness concepts and forms of meditation / yoga (e.g. Segal 2002; Williams 2007). Furthermore, mindful approaches facilitate the development of crucial middle pre frontal cortex functions, such as empathy, increased attunement to ourselves and others, and reduced fears / anxieties (Siegel 2007; B9): these are all aspects of flourishing and well-being.

Please note that after the references section there is an appendix that includes two simple diagrams of brain anatomy.

References and sources include

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Linked themes in this Autogenic Dynamics section

B6	Perceptions, flowers, and reality
B9	Mental Training, the Pre-frontal Cortex, Resilience and Equanimity
C2	Mindsight – our seventh sense and associated pre-frontal cortex functions
C4	The Hub of Mindsight
C7	Being in touch with our feelings – Hemispheric Integration (includes the concept of Affect Labelling)
C8	Lost or disturbing memories – Memory Integration
C9	Making sense of our lives – Narrative Integration
D1	Reflections on foundations for Mindful Living
D2	Dana Paramita

Appendix - Brain Neuro-Anatomy /

Appendix - Brain Neuro-Anatomy relating to Reappraisal and Mindfulness

Brain neuro-anatomy is complex and I find it at times confusing. This appendix starts with the basic anatomy of the various lobes of the brain (Figure 3). We then look at different functions of the frontal cortex in the context of mindfulness and reappraisal approaches; and then finally, in Figure 5, we look at a simplified model of the frontal lobe.

Appendix 1: Basic macro-anatomy of the brain

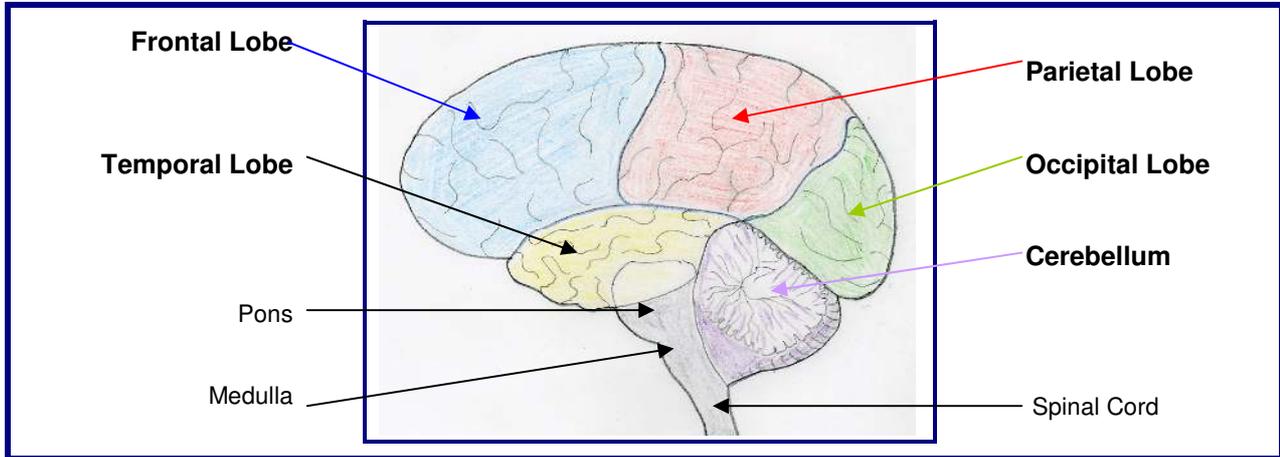


Figure 3
Brain Lobes and Areas
 (Imported from Ross 2010; Figure 4A-20A; page 170)

Appendix 2: Pre-frontal cortex functions in relationship to mindfulness

Pre-Frontal Cortex (PFC) area	Associated Mindfulness functions	References
Medial (middle) PFC	9 specific functions	Siegel 2007 (pp 341-345); 2010. Also C2
Medial (Middle) PFC	Affect labelling	Creswell, Baldwin et al 2007
Ventro-medial PFC	Extinction	Delgado 2008
Ventro-medial PFC	Affect labelling	Creswell, Baldwin et al 2007
Dorso-lateral PFC	Reframing	Delgado 2008
Dorso lateral PFC	Meditation	Cahn & Polich 2006
Ventro-lateral PFC	Affect labelling	Creswell, Baldwin et al 2007

Figure 4
 Various functions of the pre-frontal cortex

Please note:

- Extinction is probably not an attribute of mindfulness; its neuro-anatomy predates mindfulness by millennia.
- Affect labelling is an important mindfulness skill that can “reduce negative affect and improve health outcomes” (Creswell et al 2007; see also C7).
- This Figure is provisional as much crucial research is still underway.

Appendix 3: Some areas of the Pre-frontal cortex associated with mindfulness / mindsight

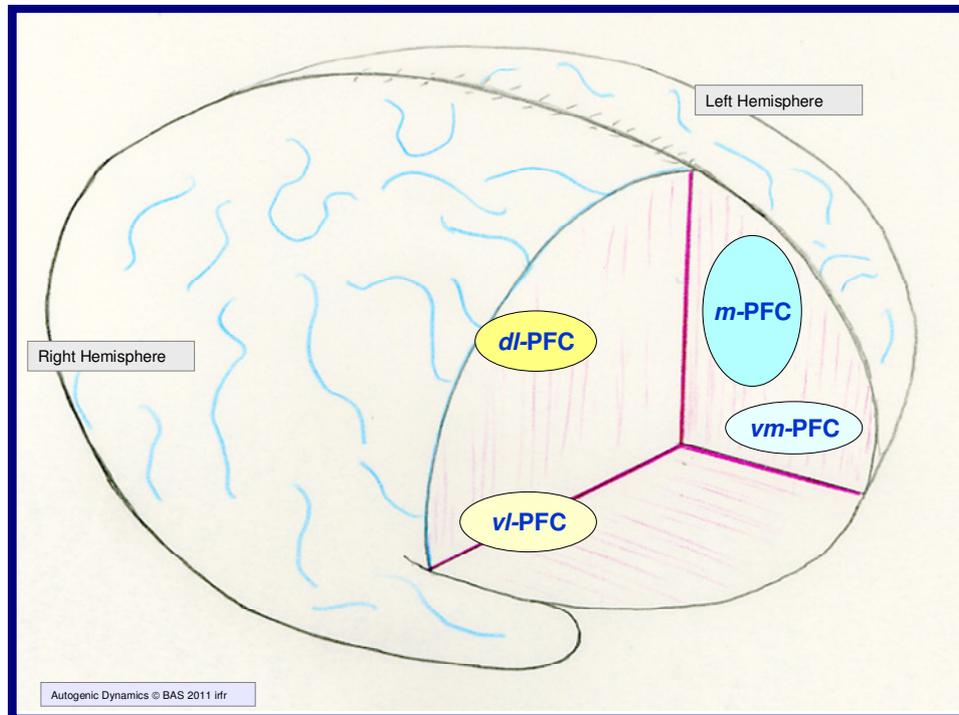


Figure 5
Some crucial areas of the pre-frontal cortex in terms of
the development of Mindfulness

Comment on Figure 5

- i. This is a view of the brain from the front right side.
- ii. The left hemisphere therefore is only partially seen.
- iii. The right pre-frontal cortex has been opened to show the relative positions of four key pre-frontal lobe areas. These are:
 - *m-PFC*: *middle (or medial) Pre-Frontal Cortex*
 - *vm-PFC*: *ventro-medial Pre-Frontal Cortex*
 - *dl-PFC*: *dorso-lateral Pre-Frontal Cortex (right)*
 - *vl-PFC* *ventro-lateral Pre-Frontal Cortex (right)*