

# **Coping with Loss:**

## **Implications of Neuroscience and Contemplative Wisdom**

### **Part Two**

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#### **Preface**

In the previous issue of the Bulletin (Vol. 1, #8), Part One of this article reviewed basic information about your own brain, and then explored the latest science about what goes on inside it when you experience a loss, or merely anticipate one. Now, in Part Two, we'll weave together methods from psychology and contemplative practice – both informed by neuroscience – that you can use to bear and cope with and heal and grow from your difficult experiences, and those of others you care about.

Because it is central to this article as a whole, I'm going to repeat most of the Introduction just below, which also appeared in Part One; you can skip it if you've got a great memory!

#### **Introduction**

We all must face losses of one kind or another. For example, my mother died two years ago, plus I've had to anticipate the loss of my 88-year-old father – who happily is still going strong. Besides the dramatic losses of loved ones, there are other, sometimes as wrenching, losses having to do with animal companions, place (e.g., refugees), or limbs or faculties. Subtle, even abstract losses – such as reputation, standing, trust, or innocence – can also tear at your heart.

Then, of course, there are the many losses woven into the fabric of everyday life. Once in Yosemite, when our son was maybe six or seven, he was watching a rugged-looking rock climber (who, we found out later, had just received his MBA) play chess with himself in a café. Wally – the climber – invited Forrest to play a game with him, which our son enjoyed immensely. When he was finally checkmated (after a valiant struggle, I'm proud to say!), Forrest tried nearly as valiantly to persuade Wally to play another game. Wally smiled, and then said, "You know, all good things have to come to an end."

Whether it's a warm snooze in bed, a hot fudge sundae, a vacation, a great conversation, or old friendships when we move on to new situations . . . all good

things must indeed come to an end: an irrevocable loss forever of that particular moment of experience.

This fact of loss, ranging from trivial to shattering, is so central to the human experience that all the world's major philosophies and religions have grappled with how to find meaning in it, and ways to cope. Consider Existentialism, developed mainly in refined European intellectual circles in the 20<sup>th</sup> century, whose central theme is the confrontation with personal mortality. Or these words, written down somewhere in a small village or dusty caravan over two thousand years ago:

*To every thing there is a season, and a time to every purpose under heaven: □*

*A time to be born, and a time to die;*

*□ A time to plant, and a time to pluck up that which is planted; □*

*A time to kill, and a time to heal; □*

*A time to break down, and a time to build up; □*

*A time to weep, and a time to laugh;*

*A time to mourn, and a time to dance; □*

*A time to cast away stones, and a time to gather stones together; □*

*A time to embrace, and a time to refrain from embracing; □*

*A time to get, and a time to lose;*

*A time to keep, and a time to cast away; □*

*A time to rend, and a time to sew;*

*□ A time to keep silence, and a time to speak; □*

*A time to love, and a time to hate; □*

*A time of war, and a time of peace.*

*Ecclesiastes 3:1-8*

Every time must come to an end – whether it is pleasant or unpleasant, ugly or beautiful, wholesome or evil – because of the inherent nature of the universe: if things did not naturally end, then there would be no change; the universe would be static, eternally the same, and life could not exist. Who knows, perhaps there may be universes of that sort, but the one in which life can occur – this one, which contains the life that is reading these words – must endlessly change. It is precisely that which enables new things – loves, children, sunrises, teachings, pleasures – which also brings their endings. And our losses.

In Buddhism, this impermanence is regarded as one of the three fundamental “marks” of existence (the others are interdependence/“not-self,” and suffering). In a traditional formulation, it is said that all beginnings are followed by an ending, all gains by a loss, all gathering together by dispersal. In the modern vernacular: rust never sleeps.

We suffer in large part because we both cling to pleasant things that must inevitably change, and resist unpleasant things that are going to change anyway. We are fighting time, to no avail.

Of course, this way of life comes from the blueprint of our evolutionary heritage: our sorrows are the unfortunate by-product of primal mechanisms – holding onto the pleasant, fighting or fleeing the unpleasant, and moving on from the neutral – that increase the odds of having grandchildren. Suffering is collateral damage.

Nonetheless, because we are human and aware and able to observe ourselves and reflect on the results of our actions, we can gradually disengage from this ancient machinery. We can find other wellsprings for living happily and lovingly besides reacting and craving and clinging.

Many paths both embody this peaceful happy wisdom, and lead to its complete fulfillment. For example, the ultimate aim of Buddhist practice is to be free of the machinery of grasping, and awakened from the enchantments it uses to beguile us to reach for the booby prize: this is why it's called a path of Liberation.

In Western psychology, efforts to help people with their losses have ranged from Freud's theorizing about instincts for creating and destroying, to more recent protocols for healing trauma. And these approaches are becoming integrated with our growing understanding of the nervous system, particularly as neuroscientists develop technologies that can examine living brains in both joy and misery.

## **Nurturing the Grieving Brain**

While many parts of the nervous system are involved with recovering from loss, five are central:

- Parasympathetic nervous system (PNS)
- Frontal lobes
- Cingulate gyrus
- Insular cortex
- Amygdala

Let's go through a variety of "skillful means" targeting each one of those neurological systems – using the mind to change the brain to benefit the whole being. The point is not some remarkable new approach, but the systematic application of mainly well-known methods to well-chosen neurological targets. Throughout, a central theme is that the simple activation of circuits strengthens them, making their activation easier the next time.

Here's an illustration of the brain – a right-side view of someone facing forward to the right – that you can use to get a feeling for its geography. (The PNS is not shown since it spreads throughout the brain and nervous system, and the insular cortex is buried deep within the brain, close to limbic system – emotional processing – structures such as the hippocampus.) As you read through the methods below, you might like to imagine occasionally what is occurring inside your own brain as you experiment with some of them.

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

## **Parasympathetic Nervous System (PNS)**

This wing of the autonomic nervous system was covered in the first Train Your Brain class – along with the whole stress-response system, and its lingering effects – and you can download the article for that class at <http://www.wisebrain.org/ParasympatheticNS.pdf>. It contains detailed descriptions of the PNS and how to activate it, so that information is mainly just listed below.

Main features:

- Handles maintenance functions: "rest and digest"

- Balances the “sympathetic” wing of the nervous system (the SNS): “fight or flight”
- Is primary; unlike the SNS, the PNS is necessary for life

General methods for activating and strengthening the PNS include:

- Breathing, especially exhaling
- Relaxation
- Improving heart rate variability; check out the HeartMath Institute
- Yawning
- Positive emotion
- Fiddling the lips (really!)

Contemplative methods for the PNS:

- Lovingkindness for oneself and others is a relaxing, heartfelt, and positive emotion that lights up the PNS like a Christmas tree. You can do lovingkindness informally, simply by wishing someone well. In a more formal, Buddhist practice called “metta” meditation, you repeat phrases sincerely in your mind that take the form of “May you \_\_\_\_\_.” The classic phrases are:

- May you be safe.
  - May you be healthy.
  - May you be happy.
  - May you live with ease.

You can change these phrases however you like, and the people they can be applied to include yourself, a benefactor, a friend, a neutral person, and a difficult person.

- Intense types of positive emotion can be experienced and even cultivated through contemplative practice, including joy, contentment, tranquility, bliss, and rapture. In fact, two of the five primary factors that lead to the non-ordinary states of consciousness in Buddhist meditation known as “jhanas” are rapture and happiness.

If you like, try to call up memories or thoughts or images that make you feel happy. Experiment with this and find the “cues” that work for you. Notice the nature of the experience in your body. Try to intensify it, then let it calm, then intensify it again. As

with any positive state of mind, see if you can develop a strong “sense memory” of the experience so you can re-activate it deliberately if you want.

- Resting in core consciousness, “fair witness” – This is the place of simple observation that registers experiences without judgment. For more on core consciousness, see Antonio D’Amasio’s book, *The Feeling of What Happens*.
- Abiding as “true nature,” Bodhicitta, (the Divine?) – At the deepest levels of consciousness, great teachers have said there abides a fundamental core of beingness that is the essence of who we are. And some have gone a step further, and have said that this nature is identical with the nature of a posited Transcendental . . . Something. To whatever extent any of this is meaningful to you, you could explore taking refuge there. A simple step is to try on the possibility that your true nature – always with you, simply covered over by reactive mind – is aware and peaceful, happy and kind; presume for some moments that that is indeed the case, and live as that and from that, and see how that feels.

## Frontal Lobes

Literally the front portion of the cortex, these regions – which encompass a good deal of brain volume – handle many functions, including these that are involved with grieving:

- Finding meaning
- Planning responses to loss
- Bringing verbal influences to intense emotional and somatic processes
- Controlling problematic expressions of feelings and desires

General methods for the frontal lobes include:

- Have conscious reasons for self-care; be for yourself. This was the subject of the third Train Your Brain class, whose article can be downloaded here: <http://www.wisebrain.org/YourPreciousLife.pdf>.
- Deliberately exercise the will.
- Make intentions conscious, multi-modal, and vivid; call to mind a strong sense of the desired state.
- Give instructions to yourself.

- Re-intend at short intervals.

Contemplative methods include:

- Hold helpful perspectives on loss. For example, reflect on how everything is impermanent, and that it is the inevitability of death that enables life.

Or consider the compounded and interdependent nature of everything; the departed loved one is part of everything and goes on as everything. (An interesting variation on this theme is found in what's called process theology, in which some have suggested that God partakes of the lived experience of every being, and so that experience lives on forever in the eternal Divine.)

From a Buddhist perspective, this fact of existence means, ultimately, that there is no "I" or "me;" much suffering comes from taking things personally or trying to glorify the "I." This view finds support in modern neurology, which has found that the functions of the psychological self are distributed widely throughout the brain; there is no homunculus localized somewhere and looking out through your eyes.

Or find what is personally helpful in the beliefs of different religions, such as the Christian and Muslim belief in heaven, or the Buddhist and Hindu doctrine of reincarnation.

- "Channel" a teacher or mentor. This means deliberately bringing to mind such a person, intentionally focusing on his or her qualities, and then imagining you are that person in some regard, such as how you are approaching a difficult matter.

A commonplace example of this happened once when I was rock-climbing. For a while, I watched a really great climber moving with beautiful fluidity and precision and grace. I tried to get a sense within my own body of what he could be experiencing, and key aspects of his approach to the rock. Then, when it was my turn, I just imagined I was him and tried to climb in the same way, "playing back" the "recording" of him I had made in my mind. I felt really different, and sure climbed more effectively.

A profound example of this modeling is contained in the simple question, "What would Jesus (or Buddha or?) do?" (If you'll forgive a political reference, the power of that simple question echoes in the bumper sticker you may have seen: "What would Jesus bomb?")

- Give yourself over to wholesome practices and precepts. There are many ways to do this, including writing out some affirmations at the start of each day, or adopting precepts such as never taking that which is not freely offered.

This guidance for your mind can be visual as well. For instance, I make collages sometimes, perhaps at the start of the new year, or related to a theme such as my hopes for my family. You might like to try this yourself if you haven't already.

## Cingulate Gyrus

You may recall that it was the cingulate gyrus which lit up during deep meditation or prayer (the pale “caterpillar” in the picture at the start of this article. It helps us cope with loss in many ways:

- Retrieving autobiographical memories (i.e., with the person)
- Integrating emotion and memory, and thinking and feeling
- Controlling attention
- Interest in other people

You can activate and strengthen the cingulate gyrus by:

- Activities which call for monitoring performance (e.g., meditation, careful crafts, precision sports).
- Deliberately linking emotion and memory (e.g., scrapbooks).
- Linking thinking and feeling (e.g., speaking one's experience or reflecting about it in present time, therapy).

The premier contemplative methods for strengthening cingulate gyrus functions are meditation and prayer. As mentioned, regular, longstanding practice leads to measurable thickening in the anterior cingulate region – especially relative to comparable individuals who are more elderly; meditation may actually slow the cognitive declines of aging.

Researchers have also found other benefits for meditation, including better control of attention, more ability to be aware of bodily states, greater empathy, better integration of thinking and feeling, improved mood, and a stronger immune system. Not bad at all for a method that can be done anywhere at any time, costs nothing, and takes just a tiny fraction of your day.



There are certainly many kinds of meditation and prayer, and there is preliminary evidence that some of the variations in meditative practice and experience correlate with observable differences in the brain. For example, mindfulness practice – relaxed presence with whatever passes through consciousness – activates different regions than concentration practice, which seeks absorption in a single focus of attention.

Concentration practices probably have a particular benefit for the cingulate gyrus, since they require close attention to . . . attention, which is a prime function on the cingulate. Similarly, reflections or visualizations that integrate emotion with thinking or with imagery also stimulate this region of the brain; examples include chanting, repeating the Lord’s Prayer, Tibetan tonglen practice, and lovingkindness meditations.

Whatever you choose for yourself, consistent practice will make the most difference for you. If you do not have a regular meditation practice, try to commit to meditating at least one minute every day, and then build from there.

## **Insular Cortex**

This part of the brain (sometimes called the insula) is very involved in sensing the internal states of the body, and therefore may play a central role in what’s called “core consciousness” (see the references to this in the section on the parasympathetic nervous system above). When you’re grappling with a loss, there’s often an increased sense of your own bodily (especially visceral) states. Further, grieving often feels heavy or weighty, and the insula is probably involved in that experience, as well.

Here are some general methods for stimulating the insula and gaining more conscious control over its functions:

- Internal sensing activities (e.g., sensory awareness, Feldenkrais, yoga)
- Abiding in physical pleasure

The main contemplative practice that stimulates the insula is whole body awareness. Most of the time we sense just one part of our body at any given moment. Just observe your own body for a minute or two, and you’ll see different and localized sensations claiming your attention as the seconds tick by. Then, by contrast, try to sense your body as a whole. You’ll probably get a global, “gestalt” sense for a few seconds at a time, and then it will crumble to be replaced by a more particularized sensing; when this naturally happens, just keep regenerating the whole body sensing.

By the way, this method also probably stimulates the right hemisphere of your brain, which has a calming influence and thus increases the benefits of whole-body awareness. Other ways to stimulate the right hemisphere include visualization, singing, and meditations on spaciousness (e.g., blue sky).

## Amygdala

You have two amygdalas (amygdalae?) actually, one on each side of your brain. They are about the size and shape of an almond (whence their name), and they have an incredibly central role in everyone's emotional life. For example, when you are coping with a loss, these little nodes:

- Interpret stimuli (internal and external) as unpleasant or pleasant; when they're unpleasant, the amygdala sends instructions to resist or avoid them (fight or flight), and if they're pleasant, to move toward them.
- Get overly active in nightmares
- Play a major role in any *traumatic* components to grieving

There is a growing, applied science for how to incline the amygdala in a more positive direction. For a summary, take a look at the slide show for the Neurology of Awakening workshop ([http://www.wisebrain.org/Neuro\\_Dharma.pdf](http://www.wisebrain.org/Neuro_Dharma.pdf)) and its Summary of Methods (<http://www.wisebrain.org/WiseBrainMethods.pdf>).

Here, I'll emphasize just one of these general-purpose methods, which makes use of the fact that the brain continually reconstructs your memories (unlike a computer, which simply grabs the complete record out on the hard drive). If you infuse the reconstruction with positive qualities, then when the memory is stored anew, it will carry with it some of the positive associations you imbued it with. Over time, that will increasingly shade the atmosphere, the context, the meaning, the frame of the memory in a positive direction. You will never forget the facts of what happened, but your experience of those facts can become more peaceful and resolved.

There are many ways to do this, by recalling what occurred:

- In a context of spaciousness
- With compassion and encouragement for yourself
- While remembering that you coped and got through

- And acknowledging factually the good qualities in yourself that helped you with the experience or which remained present at least some of the time even though things were hard
- And to the extent you can, bringing a sense of letting go of the painful feelings . . . even to the point (if it feels right to you) of forgiving others – and even yourself.

In contemplative practice, cultivating equanimity – or its close cousins, calm and tranquility – is a very direct training of the amygdala. For example, in Buddhism, the chain of events that leads to suffering includes this crucial sequence:

- Contact with stimuli (both internal and external) . . . leads to:
  - A “feeling tone” of pleasant, unpleasant, or neutral (produced mainly by the amygdala) . . . leading to:
    - Craving, the experience of grasping after the pleasant or wanting the unpleasant and the neutral to become pleasant . . . leading to:
      - Clinging, a more stable state of mind that clutches at the objects of its desires . . . leading to:
        - Suffering

Equanimity practices involve not reacting to our reactions (see <http://www.wisebrain.org/Equanimity.pdf>), and thus cut the chain of suffering, at least for a time. They include:

- Become more aware of the feeling tone of your experience.
  - In particular, be mindful of the neutral tone – which is easy to miss since it is . . . neutral, beige, the taste of water. Besides helping you become more mindful, and drawing you into the peacefulness of the neutral, this practice will be sensitizing your amygdala to neutral stimuli so that it will react increasingly to them, and not just flag pleasant or unpleasant stimuli.
  - Notice how pleasant, unpleasant, and neutral come and go endlessly on their own. This growing insight helps you relax more with whatever tone your experience contains at any time.
  - Develop a growing impartiality toward the ten thousand things. “Good,” “bad,” “beautiful,” “ugly,” etc. are all just labels, and “empty” of any inherent nature or

truth. To be sure, that does not mean becoming immoral or callous; consider how the spiritually developed people in human history were characterized by both great equanimity and great kindness. But we can relax judgmental labeling – unpleasant is not “bad” – and bring compassion and lovingkindness to our experience and to the people in our lives, no matter what.

This impartiality is at the heart of the development, in Buddhism, of disenchantment, and then dispassion, signs of mature practice.

As the Third Zen Patriarch said:

*“The Great Way is easy. For one with no preferences.”*

## **Conclusion**

We’ve covered a lot of ground at a brisk clip, and it all might seem a little overwhelming. The key point is that there are many effective things you can do to help your brain – and therefore your mind and whole being – cope with difficult experiences, including the loss of loved ones.

May you and all beings be safe, healthy, happy, and at ease.