

A WHOLIST PERSPECTIVE

Presentation to the Australasian Society for Traumatic Stress Studies Conference Hobart 2003

Introduction

20 years ago an American, Russian, and a Chinese were asked, “What is your opinion of the meat shortage situation? The American says, “What is shortage?” The Russian says, “What is meat?” The Chinese says, “What is opinion?”

The point is, that if we start to think about a threatening experience like the lack of food, we may approach it from three very different angles – biological (hunger pangs), psychological (cognitive and emotional assessments of the experience) and social (social reasons and consequences for the lack of meat).

The three are very different but inseparable, like three facets of the same thing, or three faces of a pyramid. Other examples are war, or rape – they are concomitantly and inseparably a physical/biological event, a mind event, and a social event. And so are its repercussions. Inevitably, any traumatic situation has concomitant biological, psychological, and social facets.

My talk has been listed as a biopsychosocial view of post-traumatic illnesses.

I will refer to the topic and cover it to an extent, but as happens after one has to give an abstract 9 months before a conference, the intervening 9 months are like a pregnancy, and at the end you get more than you at first thought you would. So I will place biopsychosocial aspect of traumatic stress in a wider context, and the word I give this context is wholist. I will explain the word as we go.

The **road map** to this talk is as follows. First, I will refer to the biopsychosocial issue in trauma. Then I will note that biopsychosocial refers to the opposite of trauma too, i.e. well-being or fulfilment. Then I will note how biopsychosocial events ramify, branch or arborise, through our evolutionary ever more complex brains into aspects of the mind and the soul.

Perhaps I do not need to apologise too much for treading into previously forbidden areas, as the theme of the conference is called, courageously but aptly for the times, I think, *Mind, Body and Soul*. Perhaps it is time to crystallise some of our knowledge. However, take this talk as speculation, as an initial foray into perhaps new areas.

I believe that as traumatologists we are in a unique, historically unprecedented position, to expand the view of humankind. We have been for too long cringing, insecure about our identity, such as in a corner of DSM, or behind a single label such as PTSD. Perhaps to avoid the perennial repression of trauma again, we should reveal the breadth and depth of what we have to offer.

So, I hope you do not mind, but this will be a relatively broad and deep talk. If you want *the* simple answer to trauma, this is not the talk you want to hear.

Let us put this talk in wider sweep of current scientific context, and we will see that we are following the hard sciences by going broad and deep.

The last century was the century of the small. Small was big, the atom had explosive power over the large. The smallest atom, hydrogen had the greatest bomb power. In medicine, killing bacteria and viruses, and rectifying molecular distortions, held promise of whole body cures. So small was big in science.

But physicists moved to seeking grand unified theories as they saw that atoms and were ruled by similar laws. Physicists and mathematicians moved from linear certainty to principles of uncertainty, from linear to non-linear equations as in quantum mechanics and chaos theory. I think that in this century the live sciences will move to more uncertain but unifying scientific concepts too. Today is perhaps a kind of start.

In what I say, I want to acknowledge some recent first class neuropsychophiles. They include Antonio Damasio and Robert LeDoux who have explored mind-body-soul interconnections; Jaak Panksepp who formulated certain survival strategies as basic neural circuits that radiate through the mind, and Allan Schore who has distinguished right and left brain functions in early life and trauma. I will also draw on the philosopher Arthur Koestler.

You might ask why we should bother with philosophical concepts at all. One answer is that our clients do.

A patient whose partner was murdered in front of her eyes said, "Don't tell me I have PTSD, and that it is normal for me to have these symptoms. That doesn't mean a thing to me. I want you to give some purpose to my life." She felt some relief when she decided to help other widows of murdered men.

Another reason is that suffering and death are stressful and traumatic. To have a sense of meaning and purpose that can pacify us in the face of suffering and death provides evolutionary advantage. Myths and religion have pacified, and given that evolutionary advantage. However, when they do not fulfil their promise, they can add to meaninglessness and trauma. I believe that our brains and knowledge have recently evolved to a degree where we can attain non-mythical, more worldly and pragmatic meanings of life, which are less likely to let us down.

I maintain that traumatology is in a unique position to give word to a more solid soul. I will come to that later.

But first we have to undo a kind of reverse Faustian bargain. In the struggle between religion and science, we agreed that science would keep the body and brain, religion would keep morality, the sacred, the spiritual, and the soul. We are breaking this bargain today.

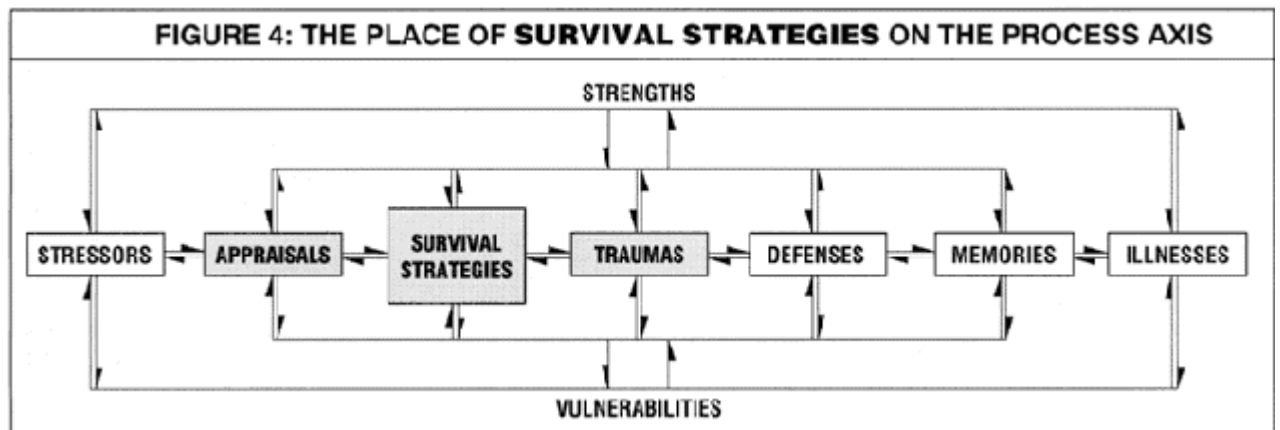
So after this lengthy introduction, I would like to share with you a very personal journey, which has awed me.

Biopsychosocial

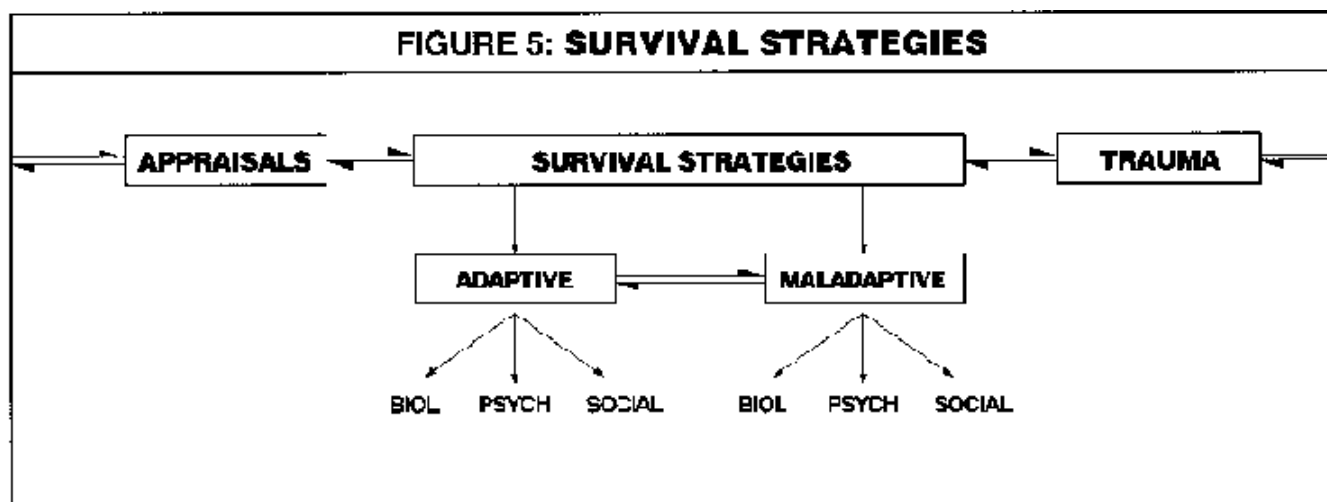
SLIDE OF 3 BIFURCATIONS

In physics, the uncertainty principle states that it is impossible to pinpoint at the same time the position and the momentum of a particle. In a similar vein, it is impossible to attend in one's mind in equal measure to the biological, psychological, and social aspects of traumatic events. That difficulty has resulted in different specialist branches dealing with each aspect. The different specialties may never cohere. They may even vie for ownership of the victims.

Let us try to do the opposite, and think of three cherries represented in a triadic stem. Biological, psychological and social still have their contributions in the stem, but we may view them more simultaneously than before. Let us see then what happens biopsychosocially in the process from stressors to illnesses.



< A >



< A >

Not only survival strategies, but all components of the process from stressors to illnesses have biopsychosocial aspects.

Let us consider say two examples of car crash or rape. You may imagine a different situation.

The stressors have biological (such as lacerations and fractures), psychological (such as being overwhelmed) and social (such as being assaulted) components. Appraisals include biological pain, psychological sense of wounding and impending death, and social appraisals of the perpetrator and oneself. Survival strategy responses such as of fight or flight include biological arousal responses such as fast heart rate, and muscle tension; psychological fear, rage, and social struggling, running away or submission. Defences include physiological arousal of the immune system inflammation and abscess formation, psychological dissociation and encapsulation, and social withdrawal and fortress building. Memories include immune response and endocrine sensitivities to similar stressor agents, intrusive reliving or forgetting, and social avoidance or re-enactments. A great variety of physical symptoms and illnesses may result. So may a gamut of psychological disorders. Apart from PTSD, anxiety, phobic, depressive, psychosomatic and other disorders may result. Similarly, a range of social disorders may result such as social phobias, risk-seeking behaviour, drug abuse, antisocial personalities, and so on.

The benefits of a biopsychosocial approach in traumatology and other human welfare disciplines, is that the whole person is attended, not just a specialist chunk.

Not applying a biopsychosocial approach means that major aspects of suffering or potential well-being are ignored, or even pushed away. Here is an example.

A 65 year old man presented to the emergency department with a minor stroke. His greatest worry, when allowed to talk about it, was not his stroke, but the fact that a week prior he had to give over his lifetime's work to a young inexperienced man while he was forcibly retired. His suppressed but fulminating rage came to a head (literally) with increasing headaches, culminating in the stroke.

By ignoring in this case biological consequences of severe stress, traumatology has excluded itself from a wealth of psychophysiological and psychosomatic symptoms and illnesses.

This then is the end of the part of my paper on biopsychosocial view of post-traumatic illnesses. (Let us pause a few seconds, take a few deep breaths, or stand up for 10 seconds.) If you have absorbed my message thus far, I am satisfied. We may consider the rest of the talk a bonus.

A Tree of Life / Complexity

Let us take the biopsychosocial cherry situation further. It can be applied to different evolutionary parts of the brain and mind.

SLIDE ARTHUR KOESTLER

This slide is from Arthur Koestler's book "*Janus: A Summing Up*". In representing the body, Koestler shows different levels of organization. Each level is remarkably self-sufficient, with its own organization and rules. For instance, atoms, cells, organs and body systems have their own rules and language of communication, as it were.

From any level, one can face down or up. Janus was the god with two faces facing diametrically away from each other. Facing either way is valid.

Facing down, one sees ever smaller components of phenomena. Facing up one sees ever more complex syntheses of such components. Each node and its branches may be considered as a bunch of cherries

From each bunch one can face up or down. Each direction merges into infinity.

So we can face down and see ever smaller components of our biological, psychological and social cherries. Or we can face up and see ever more integrated wholes. This picture might be called a General Systems Theory schematization of hierarchical complexity, or more fancifully, a tree of life.

**WE MAY SAY THAT LOOKING UP WE SEE THE EVER
HIGHER SUPER-ARCHING, INTEGRATIVE GESTALTS
OF THE BRAIN AND ITS FUNCTION.
BIOPSYCHOSOCIAL APPLIES TO ALL LEVELS IN**

THIS PICTURE, BUT MANIFESTS DIFFERENTLY AT EACH LEVEL. THE LEVELS ARE

Levels of human functioning

1. ATOMS
2. MOLECULES GENES, DNA
3. NEUROPHYSIOLOGICAL
4. DRIVES, INSTINCTS, REFLEXES
5. SURVIVAL STRATEGIES
6. EARLY MORALITY
 - VIRTUE
 - WORTH
 - JUSTICE
7. EARLY MEANINGS
8. PRINCIPLES
9. ETHICS
10. SYMBOLS
11. RELIGION, BELIEFS
12. IDENTITY, SELF
13. CREATIVITY, AESTHETICS
14. SACREDNESS
15. REASON, SOUL

Let us apply this to our view of traumatic stress.

If we face downwards toward smaller and smaller components, we find reductionist theories of traumatic stress. Those with a biological bent may maintain that the amygdala or the hippocampus, or say, cortisol or nor-epinephrine is the crucial aspects of the trauma illness. Those with a psychological bent may insist that fear of death, dissociation, or conditioned reflexes are the problem.

The language on this level is that of current mainstream attempts to speak the language of empirical science.

If we go a level higher in the integrative direction, we come to a clinical level. Here all the cherries of the process axis and their biological, psychological, and social components are gathered up into a stem and another node inclusive of all prior components.

At this clinical biopsychosocial node, PTSD reliving and avoidance is a principle followed by all illnesses in the form of remissions and exacerbations.

On this level, the multiple and complex biopsychosocial components of illness present themselves in unpredictable patterns. One requires different rules of engagement and language than the previous level of empirical science. Clinicians may discern and label complex patterns akin to physicists reading chaos patterns, using what is called clinical acumen and intuition.

This is part of the basis, I suspect, for the reason that within our Society we are divided among clinicians and researchers. Each uses the rules and language appropriate to their level of interest.

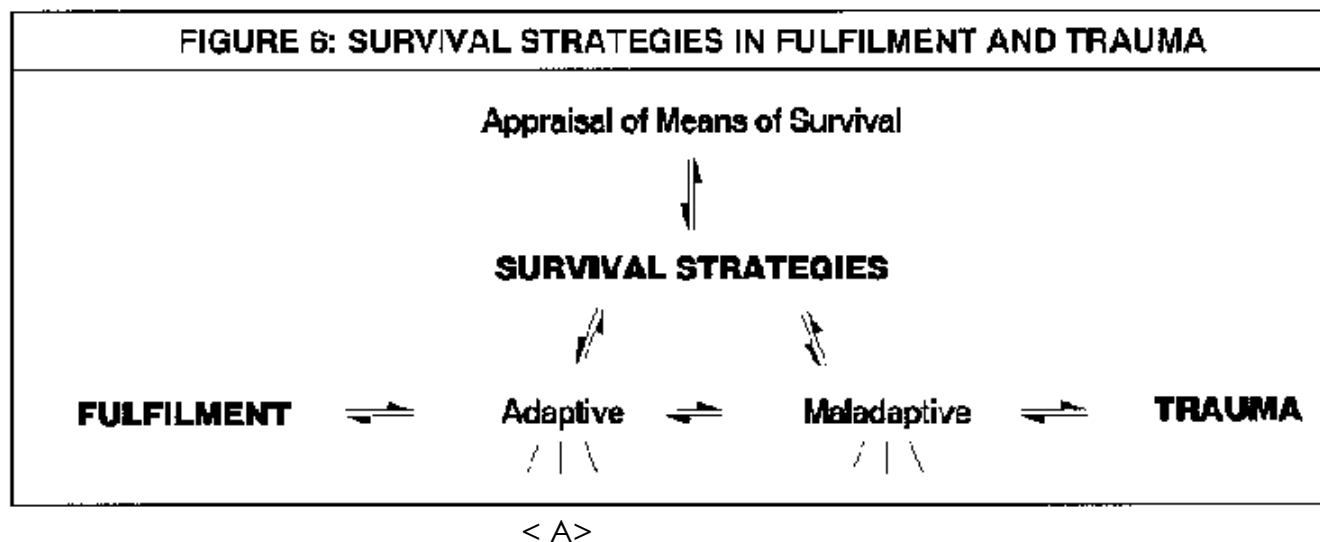
A hierarchy of human levels of potential fulfilment is not a new concept. Aristotle's and Maslow's hierarchies roughly were survival, followed by belonging

and love, self-esteem, morality, aesthetic sense, reason, wisdom, and actualization of all potentials.

This exploratory schema is not dissimilar. I will refer to each level shortly.

Survival and Fulfilment

I want to add to the cherry picture. Each cherry, whether biological, psychological or social has, like the moon, a bright side, with the sun shining on it, and a dark side away from the sun. In traumatology we deal with the dark side of life. That is reflected in the process axis slide that I showed, where the ripples from stressors travelled through trauma to a variety of illnesses. However, in this slide I imply that for each traumatic aspect there is a dialectical being well, or life-fulfilling opposite.



Life is really a dialectic between survival or keeping alive, and fulfilment, or fulfilling the potential of life. We carry this dialectic from our bodies to our souls.

Right brain and Left brain views

So far, you may have noted that I have presented flat diagrams. I will now both tax and enrich your views by asking you to put on your three dimensional spectacles. In order to see the cherry tree in three dimensions, we need to use both eyes. In this case, right and left brains.

To pre-empt, left brain functions will radiate from cognitive perceptions of survival needs and lacks, to what neurophilosophers call consciousness, and philosophers called reason, which embraced self-awareness, knowledge and wisdom. Right brain emotional responses at similar early levels will radiate ultimately to the sense of the sacred and the soul.

GOING UP THE EVOLUTIONARY TREE

As we reach up the depth axis or our evolutionary tree, we come against ever more super arching and embracing notions. However, we will find that within them still nest biological, psychological and social components from lower levels.

Survival Strategies Level

Let us for the moment return to the slide where different biopsychosocial components proceed to traumatic illnesses (FIGURE 2). Let us remember that survival strategies can also proceed to satisfying outcomes and fulfilments

FIGURE 6

This whole process may be followed up or down hierarchical levels, but I will concentrate following the survival strategy component upward. We remember (Figure 6) that following it downward leads to ever smaller component of biological, psychological and social phenomena. Following survival strategies upward will reach levels with ever more ephemeral language, but you will be able to discern biopsychosocial components still nesting in them.

PTSD criterion 4 arousal phenomena are usually explained by two survival strategies fight and flight.

I suggest that there are 6 other survival strategies –

Attachment, rescue, assertiveness, adaptation, competition and cooperation.

Survival strategies are relatively complex survival and fulfilment manoeuvres anatomically situated in the midbrain, including the hypothalamus, amygdala and hippocampus, with close connections to the lower reptilian or spinal brain and the higher or specifically human in its complexity, neocortex.

Functionally they are above reflex actions and instincts, but below conscious thought.

In order to accommodate these survival strategies into our cherry tree picture, my last request of you is to imagine that the three dimensional cherries with their adaptive (on the left side of the next slide), and maladaptive (on the right side of the next slide) range through 8 colours of the rainbow, representing 8 survival strategies.

Each adaptive survival strategy containing specific pleasure responses is on its path to fulfilment. Each maladaptive survival strategy containing specific unpleasure responses is on its path to trauma.

TABLE 2: SURVIVAL STRATEGY COMPON

APPRAISAL OF MEANS OF SURVIVAL	SURVIVAL STRATEGIES	SUCCESSFUL / ADAPTIVE RESPONSES				UNSUCCESSFUL / MALADAPTIVE RESPONSES			
		BIOLOGICAL	PSYCHOLOGICAL	SOCIAL	JUDGEMENTS	BIOLOGICAL	PSYCHOLOGICAL	SOCIAL	JUDGEMENTS
MUST SAVE OTHERS	RESCUING PROTECT PROVIDE	↑ ESTROGEN ↑ OXYTOCIN ↑ OPIOIDS	CARE EMPATHY DEVOTION	RESPONSIBILITY NURTURE PRESERVATION	RESPONSIBLE GIVING ALTRUISTIC	SYMPATHETIC & PARASYMP AROUSAL	BURDEN DEPLETION SELF-CONCERN	RESENTMENT NEGLECT REJECTION	IRRE- NEI- EC
MUST BE SAVED BY OTHERS	ATTACHING PROTECTED PROVIDED	? ↑ OPIOIDS	HELD, CARED FOR NURTURED LOOKED AFTER	CLOSE SECURE CONTENT UNION	WORTHY DESERVING LOVABLE	↓ OPIOIDS	YEARNING NEED CRAVE ABANDONMENT	CRY INSECURE DEPRIVED SEPARATION	UN- INCI- RE
MUST ACHIEVE GOAL	ASSERTING COMBAT WORK	TE, NE ↓CORTISOL ↑IMMUNOCOMP	STRENGTH CONTROL POTENCY	WILL HIGH MORALE SUCCESS	STRONG CAPABLE SUCCESSFUL	↑ TE, NE DEPLETION E, NE ↑ BP, ?CHD	FRUSTRATION LOSS OF CONTROL IMPOTENCE	WILLFULNESS LOW MORALE FAILURE	INA- NCI- F
MUST SURRENDER GOAL	ADAPTING ACCEPT GRIEVE	PARASYMP AROUSAL ↑CORTISOL	ACCEPTANCE SADNESS GRIEF HOPE	YIELDING MOURNING TURN TO NEW	PITIFUL SYMPATHY TRIBUTE	↑ CORTISOL ↓ IMMUNOCOMP ↑ INFECTION, ? ↑ CA	OVERWHELMED DEPRESSION DESPAIR	COLLAPSED WITHDRAWAL GIVING UP	P DE
MUST REMOVE DANGER	FIGHTING DEFEND RID	SYMP AROUSAL ↑N, NE ↑BP	THREAT REVENGE FRIGHTEN	DETERRENCE WOUNDING RIDDANCE	BRAVE NOBLE HEROIC	↑↑SYMP AROUSAL ↓CORTISOL	HATRED PERSECUTION KILLING	ATTACK ERADICATION DESTRUCTION	V MI
MUST REMOVE ONESELF FROM DANGER	FLEEING RUN, HIDE SAVE ONESELF	SYMPATHETIC & PARASYMP AROUSAL	FEAR TERROR DELIVERANCE	RETREAT FLIGHT ESCAPE	PITIFUL VULNERABLE REFUGEE	NE DEPLETION ↑ E & CORTISOL	PHOBIA PARANOIA ENGULFMENT	AVOIDANCE PANIC ANNIHILATION	P C
MUST OBTAIN SCARCE ESSENTIALS	COMPETING POWER ACQUISITION	↑TESTOSTERONE SYMP AROUSAL	WINNING STATUS DOMINANCE	CONTEST HIERARCHY POSSESSION	SUPERIOR RESPECTED HONORED	↓ TESTOSTERONE ↓ FEMALE HORMS ↑ CORTISOL	DEFEAT GREED, ENVY EXPLOITATION	OPPRESSION STRUGGLE PLUNDER	IF CON HU
MUST CREATE MORE ESSENTIALS	COOPERATING TRUST MUTUAL GAIN	↑OPIATES ↓BP, E, NE	MUTUALITY GENEROSITY LOVE	INTEGRATION RECIPROCITY CREATIVITY	TENDER POIGNANT BEAUTIFUL	↓ OPIATES ?↑PARASYMP AROUSAL	BETRAYAL SELFISHNESS ABUSE	DISCONNECTION CHEATING DISINTEGRATION	D PERV

I will give you a run down of pleasures and unpleasures associated with each survival strategy. I only choose one of each, though we see that there are more. Some pleasures and unpleasures are denoted by specific words, others need clumsier descriptions.

Nurturing/ being depleted; belonging / aloneness; Control / powerlessness; Grief / overwhelmed; Frightening/hateful; Escape / engulfment; Winning / defeat; Mutuality / abuse.

The philosophy of pursuing pleasure and avoiding unpleasure or pain has a long history. Hedonists saw pursuit of pleasure as the correct guide of life. The Epicureans thought of unpleasure and pain as evil. Freud thought humans were motivated by the pleasure principle.

In this and subsequent overheads, please do not try to memorize the various descriptions. You will quickly become exhausted trying to resonate with a range of opposite emotions. Here I only want to provide an intellectual demonstration how biopsychosocial fulfilling and traumatic consequences manifest at different evolutionary levels.

Level of judgements regulating survival strategies

At this level evolution has produced a primitive morality. Judgements of survival strategies including guilt (What have I done!), shame (“I mustn’t act dirty!”)

and a sense of fairness (“Why me?!” or I mustn’t push in!”) regulate survival strategies within social envelopes of genetically intermarrying communities.

The above examples demonstrate three types of judgements.

THREE TYPES OF BASIC MORALITY

1. **GOOD AND BAD** – HIERARCHICAL MORALITY
2. **ESTEEM AND SHAME** – WORTHINESS AND UNWORTHINESS
3. **FAIR AND UNFAIR** – JUSTICE AND INJUSTICE

Hierarchical morality implies that someone from on high like parents or gods reward good behaviour and punish bad behaviour. Reward and punishment is thought by some as the basis of human behaviour.

Trauma shatters good reward/bad punish morality - “But I did all I was told, and see what happened!” (Unless one assumes that after all, one was bad or sinned.)

The second type of judgement refers to a person’s worth or unworthiness. Worthiness is accompanied by esteem and self-esteem, unworthiness by rejection, humiliation and shame. “Something is wrong with me.” “Perhaps I was raped because I am a slut.”

The third type of judgement judges fairness. “Why did this happen?!” “Why me?!” Trauma shatters a sense of a just world. Unless one imagines retaliation for some unjust action of one’s own.

Let me show you how these primitive judgements play themselves out as feedbacks to different adaptive and maladaptive survival strategies. You will see that there are no absolute judgements. In fact, they may be contradictory, according to circumstances.

GOOD AND BAD; VIRTUE AND GUILT

RESC	ALTRUISM	SURVIVOR GUILT
ATT	OBEDIENCE	WRONGDOING
ASS	ACHIEVEMENT	FAILURE
ADAP	ADAPTATION	GIVING IN
FIG	DEFENCE	MURDER
FLIG	ASTUTENESS	COWARDICE
COMP	PRECEDENCE	PRIORITY GUILT
COOP	GENEROSITY	EXPLOITATION

Similar differentiations can be made for shame and esteem and fairness and injustice.

Diversion: Philosophical Crossroads

Do we have the right to savour the fruits of our cherry tree? We have been warned not to eat of the tree of the knowledge of good and evil, or we will lose paradise. Trespassing into this knowledge, and then knowledge of the soul, may be dangerous.

At this stage we may make a diversion to examine the philosophical crossroads of which traumatology is at its centre.

Traumatology is at the centre because specifically traumatology has new information. We have just had a glimpse of the roots of morality – in judgements that have nothing to do with a good principled universe, but everything to do with often spurious accusations and self-accusations stemming from specific traumatic situations. Traumatology dispenses with the notion of a just and good universe from on high. It acknowledges that one of the most difficult things victims have to deal with is the shattered assumptions of such a good universe. Trauma therapy unkinks

undeserved self-blame, shame, and culpability innocent victims use to maintain the assumptions of a just universe.

Non-judgemental trauma therapy changes the religious story of you must have sinned if this occurred to you, to a trauma narrative. The victim is not blamed for sins, but healed of wounds, including the loss of a God-directed moral world.

Humankind has had to suffer narcissistic blows before. We came to understand that the world was not the centre of the universe. Then that we were not created *de novo* in God's image. Then that we were not in total conscious control of our minds. Now we may learn that our moralities, religions, and souls are products of our brains adjusting to circumstances, rather than a divine cocoon.

We may even try to explain the illusion. The primordial judgements guilt, shame, fairness, are right brain emotions that hold sway in children up to the end of the magic years, say 7. Such children, and incidentally, early tribes believe that the universe has a blueprint, with everything knowable and occurring for a good reason. This cosmology is dominated by spiritual allies resembling parents, and monsters resembling predators. Obedience, prayer, and rituals control the threatening world, and death. If they occur, one must have failed in obedience, prayer or rituals.

A primitive cosmology also dominates traumatised people whose unbearable traumas are shunted or dissociated into the unconscious right brain.

Science was right to be suspicious of the right brain's tendency to fill in the gaps with imagination. But now we should see the evolutionary progress of the right brain of no less interest than the evolution of left brain cognitions.

After this diversion, let me now share with you the excitement of my personal journey and my speculations about a secular soul. Let me assure you that secular in no way diminishes the wonder of such a soul.

To summarise,

Even if the patient whose husband was murdered next to her, or the man with the stroke, could find a magic drug that would dissolve their fears and rage, they would be unsatisfied, because their lives would still be meaningless.

Trauma disrupts biological, psychological, and social life at all levels, from cellular physiological, to highest spiritual levels.

Traumatology, with its unique view, has hamstrung itself by addressing narrow biochemical, and illness levels. Let us address the higher evolutionary levels now.

We will now ascend the tree wearing our multifocal three dimensional spectacles, being sensitive to the variety of colours, and the light and dark sides of our view.

Early (Basic) Meanings

The first super arching integration I suggest is basic meanings. Basic meanings include situations, survival strategies that deal with them, and judgements of good and bad, esteem and shame, and fairness and unfairness. Basic meanings are usually subconscious, what Beck called automatic thoughts.

This overhead illustrates some basic meanings about oneself.

BASIC MEANINGS ABOUT ONESELF

RESC	GOOD CARER	CAUSE DEATH
ATT	SAFE AND LOVED	UNACCEPTABLE
ASS	CONTROL DESTINY	LEAF IN THE WIND
ADAP	ADAPTABLE	CRUSHED
FIG	HANDLE DANGER	VIOLENT
FLIG	FLEETFOOTED	PERSECUTED
COMP	SUPERIOR	INFERIOR
COOP	LOVED AND LOVING	ABUSED

You may note that the vertical arrangement of survival strategies is the different colours of the cherries, and the right and left columns are their light and dark sides.

One also makes early meanings of the world. They resemble biblical sayings. Here are some examples.

Regarding attachment, adaptive extracted meaning says, “If you do the right thing, things go well.” Maladaptively, “Bad things happen to good people.”

Regarding competition, “I need to accept my place in the world.” Versus, “In this world it is dog eat dog.” “To share and love brings you close to people.” Versus, “To love is to get exploited.”

Ideals, Values, Principles

At the next level, philosophers have attempted to find moral principles, under ideals, values and principles of justice. Ideals stem from good and bad, values from worth, and principles from judgements of fairness.

Ideals subsumed prior concepts of good. They vary according to roles in survival strategies. Thus, one could be an ideal mother, servant, warrior, or lover, depending on role and required survival strategy.

The same could be said of **values**, which subsumed earlier concepts of worth. Depending on the survival strategy, such values include charity, obedience, perseverance, humbleness, reputation, humility, pride, and loyalty. **Principles of justice** include protecting the weak, obeying precepts, freedom to achieve success, principles relating to prisoners and refugees, principles of conducting wars, behaving according to status, principles of fair trade, keeping promises.

By the way, if you feel that we have strayed too far from biopsychosocial principles, consider that biological is expressed in the sense of ‘natural’. That a mother tries to be ideal for her child’s needs is natural, and in it are nested the biological, psychological and social components of caretaking. Outrage at being cheated or lied to, nest earlier emotions of betrayal and abuse of cooperation and love gone wrong.

Note that right and left brains evolve in parallel. For instance, principles of natural justice we may say are right brain, while laws enshrining them are left brain.

Ethics; Codes, Dignity, Rights

We may speculate that ethics comprises the next evolutionary level from ideal, values, and principles. Ideals evolved into **codes** of good behaviour. Codes are verbal and nonverbal means by which communities regulate their dealing with each other. They include professional codes of ethics.

Ethics also maintain human **dignity** which subsume earlier levels of worth and human value.

Ethics includes **rights**, which evolved from principles of justice – going along the different survival strategies- rights of parents, children, territorial rights and right to pursue one’s talents, rights of orphans and widows, prisoners, right to defend life and property, rights of refugees, property rights and rights to trade, love, marry and universal human rights.

Symbols

Like mathematics was the symbols of the workings of the universe, so words became the left brain representations of the human world. They became platforms for ever more complex thought and technology. Right brain non-verbal postures and behaviours also evolved into symbols representing complex meanings and attributions. Clothing, flags, status symbols came to represent territory, friend, enemy, wealth, prestige, honour, and so on, representing aspects of different survival strategies.

Koestler said that symbols have been the cause of the greatest carnages in history. This is because they may represent primitive maladaptive emotions and meanings that are accepted without knowing their source.

This is similar to symbolic cues of past traumas being as potent as the original trauma, which may be forgotten.

Beliefs; religion, ideology; spiritual

Like physicists are searching for a Grand Unified Theory of the universe, humans have sought for some organizing theory that would encompass the complexities of survival, fulfilment, morality and meaning of life. We are now reaching a spiritual dimension.

Religion is the first such overarching possibility. Drawing on earlier cosmologies, it offers hope against meaningless trauma and suffering, by offering an interested God, and heaven. Further, religion offers fulfilment of every survival strategy, aided by powerful symbols of knowing and belonging. This envelope provides a numinous, spiritual or holy experience.

Caretaking survival strategy is represented in God who has unlimited resources and protects and provides one or one's tribe like favoured children. The Madonna holds and breastfeeds the eternal baby. The believer is lovable, and God is just and merciful.

Attachment is the reciprocal. The believer is obedient, prays, sacrifices, and obeys religious rituals. To insiders they have deep symbolic significance, no matter how illogical they seem to outsiders. Obedience may require martyrdom for God, and is rewarded immediately with heaven.

Goal achievement The religious person is promised success, and if not on earth, in heaven. God is on his or her side, giving power and potency.

Goal surrender and grief are very temporary as everything lost is eternally retrieved in heaven. Death is replaced by eternal life.

Competition is resolved by believers being superior and having precedence to God and heaven. Religious hierarchies maintain peace on earth.

Cooperation gives scope for kindness, love and creativity.

Ideologies are similar to religion, being all embracing. Instead of God and angels, we see cult figures. Instead of heaven in heaven, they promise heaven on earth; and if not for oneself, then for one's children. Different ideologies may accentuate one or other survival strategy. *Fascism* emphasises assertiveness, fight and competition. *Liberalism* espouses freedom to compete and achieve potentials according to ability. Revolutionaries may emphasise *cooperation* survival strategy such as in liberty, equality, fraternity.

Secular philosophers have tried to postulate **universal ethical principles or beliefs**, as keys to human happiness. Aristotle postulated the golden mean of moderation in all things. Kant postulated the categorical imperative, which stated that one was to act only in such a way that one would wish the act to be universal. John Stuart Mill developed the utilitarian idea of judging actions by maximum happiness for maximum number of people.

Critics say that these unifying beliefs are too unwieldy and artificial for everyday life. People shape religious, ideological, and other beliefs according to their own exigencies, and make up overarching beliefs to accord with their variable survival strategy experiences.

For instance, people may believe that devotion to the next generation is the way to happiness; or to follow precepts one was brought up with; or to follow success in work or role; or to accept the tragedies of the world; to defend one's security; or avoid ever-present dangers; to struggle in this dog eat dog world; or to love one's neighbour, in order to be loved in return.

Identity

Identity is a complex symbol of oneself. It includes awareness of one's whole being, and the attributes we have mentioned in prior function levels.

This self-awareness is called consciousness by neurophysiologists.

Self-awareness may be only partial, sometimes of symbols but not their roots. For instance, one may be aware of one's beliefs and wear a symbol denoting them, but not be aware of the roots of the belief.

Self-awareness of thought and higher function levels, but not their roots, is seen in the mind-body dichotomy, concretized by Descartes. The split has been utilized to overcome death. Thus one may concede death of the body, but eternity of the mind, relabelled as soul.

Creativity and Aesthetics

Creativity combines different parts and synthesises them in new ways. Tools of left brain creativity include thinking and science, and result in technology. Right brain tools include play, fantasies, dreams, and humour, and they result in art.

The addition of aesthetic delight to creativity results from beauty, harmony, symmetry, proportion, and economy.

Sacredness

Sacredness connects prior function levels to a larger universal whole. This produces feelings of reverence, awe, existential joy, a cognitive holism and ethical compulsion.

Einstein in *The World as I See It* described this as "...a sort of intoxicated joy and amazement at the beauty and grandeur of this world. This joy is the feeling from which true scientific research draws, its spiritual sustenance, but which also seems to find expression in the song of birds."

Einstein thought that it is among heretics and atheists that this true religious feeling is at its highest. He also believed that its roots and its ultimate expression were in experience.

We find that even on the sacred level each survival strategy has its specific expression.

SACRED AND SACRILEGIOUS

RESC	GIFT OF LIFE	MARTYRDOM
ATT	DIVINE CARE	CHILD SACRIFICE
ASS	rites of passage	STASIS
ADAP	ACCEPT LIFE CYCLE	DETERMINE DEATH
FIG	DEFEND LIFE	MURDER LIFE
FLIG	SANCTUARY	MASSACRE
COMP	UNIVERSAL ORDER	CHAOTIC STRUGGLE
COOP	LOVE, CREATION	PERVERSIITY

Caretaking manifests life being passed through the generations, or the strong to the weak. *Attachment* may manifest as being a valued part of the universe. *Goal achievement* manifests in sacred rites of passage and challenges throughout one's life. *Goal surrender* and grief indicate the natural rhythms of life, death and regeneration. *Fight* manifests as sacred defence of life, sacred sanctuaries offer refuge. The universe has a hierarchy of structure in which one may find one's place. Finally, the creative force of love brings forth new life.

Each sacred experience has its specific joys and ecstasies.

Reason and Soul; Existential Meaning and Purpose

The pinnacles of human potential have been seen by philosophers as reason (or mind), and soul.

Reason includes truth, knowledge and wisdom, which may be seen as highest level left brain scanning of the universe. In terms of consciousness, reason shows a high degree of awareness of self and others. I would add that it also shows awareness of unawareness, that is of unconscious roots of thought and behaviour.

In traumatology, we know the truth of trauma, and we know things about trauma. For instance, we know that unawareness is a way to mitigate trauma, but it carries costs in the personality. Awareness of trauma and suffering may be painful, but it preserves the personality and may expand wisdom.

In terms of the current discussion, reason includes awareness of “the tree of life”, including the fulfilling and traumatic manifestations of survival strategies through its branches and fruits.

The soul we may speculate, is a more emotional right brain term that encompasses fulfilment of desires from the physiological to sacred universal levels. It includes everything from satiety to what is called mystical consciousness, and every level of love, from harmonious physiological reverberations of baby with mother, to a mature person’s reverberations with the universe.

Trauma disrupts all levels, including reason and soul. Evil may be the perverse pleasure of someone doing so on purpose. A patient said, “My father disrupted my continuity with nature. He destroyed my soul.”

Trauma therapy restores reason and soul by revisiting traumatic situations, and their tree-like projections to all function levels. They are all gathered and translated into a new whole brain story. It includes new and enlarged truth, knowledge, awareness, and wisdom, and a regenerated soul. The person regains their path in life.

CONCLUSION

Attempts to savour of the tree of knowledge of good and evil cannot result in us being thrown out of paradise. That has already happened. But we can continue Eve’s curiosity, when she started to doubt the power of God.

As traumatologists, we are in a unique position to continue the enquiry. We have privileged views of good and evil, we see the building, shattering and regeneration of moral views, and people’s minds and souls.

Sometimes we are compared to latter day priests. That is unfair, because priests provide illusions against trauma. We face the music, and by helping to reveal the truth, we heal the mind and soul. We provide mind and soul therapy. The benefits are in this world. To the extent that they are in the next world, they are in future generations.

We should not shy away from the wholist perspective, which I tried to provide today. I hand you back to our forward looking organisers who chose the theme of “Body, Mind and Soul” for this conference.