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Reference Style examples

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Applying intensive short-term dynamic psychotherapy to the treatment of medically unexplained symptoms: Integrating theories of cause and theories of change

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Abstract

In this article we outline an approach to understanding and treating Medically Unexplained Symptoms (MUS). A theory of causality is derived from the literature on affective neuroscience, attachment, and the autonomic nervous system. A theory of change is described based on Intensive Short-Term Dynamic Psychotherapy (ISTDP) drawing on principles of somatic work outlined by Abbass (2015) and of attachment-based ISTDP developed by Neborsky and ten Have-de Labije (2012). This is further illustrated through the use of clinical case study vignette.

Key Words: Conversion, functional neurological symptoms, medically unexplained symptoms, short-term dynamic psychotherapy, somatisation.

Background[1]

Patients with Medically Unexplained Symptoms (MUS) report physical health problems where there is a difficulty in accounting for symptoms based on known pathology such that traditional medical approaches are unable to resolve the patients' complaint (Edwards et al, 2010). They present frequently to health physicians in primary and secondary care services (Reid et al, 2001), leading to repeated medical investigations, long inpatient stays, and unsatisfactory outcomes for patients.

MUS account for approximately 20% of GP consultations, are associated with 20-50% greater costs, and 30% more hospitalizations (Royal College of General Practitioners, 2011). Service-users frequently experience unnecessary referrals to medical specialties, whilst the evidence indicates that high health care utilization is actually associated with poorer outcomes for this client group (Richardson and Engel, 2004).

MUS can be viewed as an umbrella term for a range of clinical presentations from somatisation to health anxiety and factitious disorder. Here we present one way of integrating theories of cause and change that can be applied to clinical presentations of somatisation. Patients with these problems may present with pain symptoms, gastrointestinal problems, sexual or menstrual symptoms, or pseudo-neurological symptoms that cannot be explained by traditional medical models (Kenny and Egan, 2011).

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In the Diagnostic and Statistical Manual of Mental Disorders IV (APA, 2000) these patients would often be diagnosed as suffering from “somatisation disorder,” “conversion disorder” or “pain disorder.” The literature on the treatment of somatic problems supports the professional consensus that these difficulties are caused or maintained by psychological factors (Edwards et al, 2010).

PART ONE: A THEORY OF CAUSE

When service-users hear of the idea that their somatic symptoms are caused by psychological factors, all too often they are left with a sense that this is a magical and mysterious process which ultimately leaves them with the impression that their symptoms are not real, a science-fiction that is not to be believed. Indeed it was a science-fiction author, Arthur C Clarke, who once astutely implied that magic is just ‘science we don’t understand yet’ (1985). Here we draw on the science of evolution, neurobiology and attachment to explain how we might demystify the seemingly magical process of somatisation.

Scaer (2012) observed that the mammalian brain has been profoundly shaped by the unique demands that it has faced in the evolutionary journey to equip mammals to become more sophisticated creatures than our reptilian cousins. The trade-off for our great cognitive potential is that unlike reptiles we are profoundly vulnerable at birth and none more so than our very own human species. As a consequence of this vulnerability, we require greater parental investment to develop physically and mentally in order to survive. The mammalian brain has been shaped over time in favour of facilitating behaviour that supports us in eliciting to elicit care from our parents to improve our chances of surviving into adulthood.

There is a compelling case that it is within this framework that our emotionality evolved, providing a mechanism to guide our behaviour in ways that foster infant-parent bonds. This conclusion is drawn from Panksepp (2011) who has undertaken extensive research and literature reviews on models of emotion in the brain. He argues that there is now incontrovertible evidence for at least seven emotional systems that are ‘hard-wired’ into the sub-cortical structures of the brain acting as unconditioned stimuli to guide our behavior in ways that support our attachment and help us elicit care.

Panksepp (2011) illustrates these different emotional systems using deep brain stimulation of the associated brain circuitry. Each of these emotion systems is linked to forms of arousal that when triggered in animals are experienced by them as either rewarding or punishing (Panksepp and Biven, 2012). Four emotional systems appear to be reinforcing (Seeking, Lust, Care and Play Systems) and three to be punishing (Rage, Fear, and Grief/Panic Systems) and each with its own associated behavior or impulse, considered to have an attachment value.

Picture a baby that has been separated from its care-giver. The baby’s attachment need for proximity and care are thwarted by this sudden parting. This activates the ‘unconditioned stimulus’ emotional system of grief/panic. The impulse of grief is to cry out. This signals to the parent the child is in distress and alerts them to its location. At the same time the averseness of grief acts as a potent motivator for the child to avoid straying too far from the safety of its caregivers again. This guiding emotional response is not learned from our parents, it is built into our brain by the ‘ancestral memories’ of evolution (Panksepp and Biven, 2012: pp20).

IN HEALTHY ATTACHMENT WITH EFFECTIVE ATTUNEMENT as the child grows older it will need to regulate these inbuilt (unconditioned stimulus) emotions in order to separate from their parents, form new relationships, and explore the world. In healthy attachment this

is achieved through a process of co-regulation where the parent attunes to child's emotions and actively models effective emotion regulation (Ainsworth, 1967; Marganska, Gallagher and Miranda 2013).

The field of affective neuroscience is beginning to demonstrate how attunement in attachment shapes the development of the brain to foster the neurological capacity for affect regulation throughout life. For instance, Schore (1999, 2008) has suggested that at the level of the brain the attunement process is linked to the growth and development of the Right Orbital Frontal Cortex (ROFC). He has identified an apparent association between healthy attunement and the development of the ROFC through functional MRI studies of infant brains. Strikingly the ROFC appears to be a primary regulator of emotional and autonomic function (Scaer, 2012).

IN INSECURE ATTACHMENT WITH POOR ATTUNEMENT the unconditioned stimulus feelings become unhelpful as they may provoke emotional abandonment, threat or actual harm from the attachment figure. Fortunately, the mammalian brain has an adaptation linked in with ancient survival threat centres that provides a secondary process fail-safe mechanism to 'override' the expression of unconditioned stimuli in these circumstances. This mismatch in feedback creates the possibility of maladaptive emotional learning. Whether and how this becomes 'hard-wired' into the child's implicit emotional systems depends on the timing and degree of the mismatch.

The limbic system is especially implicated in this implicit emotional learning process, acting as an "alarm system so fast and powerful that, when activated, it overrides all other brain activity" Scaer (2012; p55). It has profound links with the autonomic nervous system and certain memory centres that equip infants to adapt to their environment to inhibit primary affect and non-essential activity and to promote either mobilisation or immobilisation depending on the perceived nature of the threat (Scaer, 2012, 2014).

It follows that in infant-parent bonds where the attachment is traumatising there is a process of conditioning that pairs emotion with the threat response system such that even before being consciously registered these feelings trigger specific patterns of anxiety. Instead of acquiring affect regulation the infant resorts to affect dissociation, first through activation of anxiety and secondly through the incremental development of interpersonal and intrapersonal behavioural defences that function to keep their feelings out of conscious awareness.

This pattern of inhibition and anxiety will effectively mirror the parent's own affect regulation deficits such that where a parent cannot tolerate their own unconditioned emotion responses, the child is forced to inhibit theirs, leading to conditioning over time between the specific inhibited (or 'taboo') emotional response and anxiety and defensive habits to dissociate from the original affect. The most taboo emotion will of course be rage towards the care-giver themselves, for failing to meet the infant's attachment needs. In summary, emotions that provoke threat or abandonment from the caregiver are not regulated and come to be associated with danger, triggering anxiety and defence mechanisms aimed at affect dissociation instead of affect regulation (Neborsky, 2010).

SOMATISATION COULD BE UNDERSTOOD therefore as the outcome of a conditioned fear response employed to keep unconditioned emotion at bay. The Amygdala is a major protagonist in conditioned fear response (LeDoux, 1998) and can be seen as being an engine room for 'emotion linked memory' (Scaer, 2012). When the Amygdala is 'highly activated' this influences arousal states in the body by a series of neural connections that lead to a range of possible physiological responses (See Scaer, 2012 for a detailed description of these connections). For instance, one of these connections is with the ROFC, which

has the capacity to regulate activation of the amygdala. The ability for this to happen will depend on the sophistication of the development of the ROFC, which as we have seen appears to be dependent itself upon an attuned attachment experience.

Let's take a moment to recap on what this might mean in practice. A person who has received good-enough attunement in the past would experience grief/panic upon separation from their care-giver (unconditioned emotional response), but is able to down-regulate their emotional response based on their learned experience and neurological capacity for affect regulation developed through adaptive co-regulation (conditioned response).

In contrast, a person who has experienced aggression or abandonment in response to previous iterative episodes of grief will have classically conditioned the emotion (unconditioned response) with the activation of the amygdala and the threat response (conditioned response). They will not be able to down-regulate the affect or the anxiety themselves, having not had the opportunity to acquire this capacity through adaptive co-regulation causing them to experience a prolonged period of threat response and the subsequent physiological concomitants of this. The physiology of anxiety is an extremely complex area beyond the scope of a single review. Below we offer three ways in which the physiology of the conditioned threat response may lead to clinically identifiable pathways of anxiety manifestation, causing the presentation of real somatic symptoms. We also outline the possible causal role of defence mechanisms in some cases of medically unexplained symptoms.

1. 'FIGHT AND FLIGHT' AND THE SYMPATHETIC NERVOUS SYSTEM: Following activation of the amygdala, reciprocal links between the right hippocampus and thalamus lead to an interaction with the hypothalamus that regulates autonomic and endocrine functions. Perhaps the most familiar of these to medical and psychotherapy professionals is the Sympathetic Nervous System (SNS), associated with the fight or flight response, which includes the hypothalamic-pituitary-adrenal (HPA) axis.

When activated by Corticotrophin Releasing Hormone (CRH) from the Hypothalamus, the Anterior Pituitary triggers release of Adrenocorticotrophic Hormone (ACTH) and endorphins, which stimulate the Adrenal Cortex and Release Cortisol, which prepares the body for prolonged and sustained state of threat. This also forms a negative feedback loop to suppress productions of CRH and ACTH. The Adrenal Medulla releases adrenalin and noradrenalin, through the corticospinal tract that is linked to activation of striated muscles (muscles under voluntary control) in the torso, and upper and lower limbs. The adrenalin leads to mobilisation of glucose, which accumulates lactate and decreases oxygen debt. Adrenalin also constricts blood vessels in skin and the abdomen, whilst dilating blood vessels in skeletal muscles. It also inhibits the gastrointestinal tract, whilst increasing pulse rate, blood pressure, cardiac output and cognitive alertness.

The overall physical impact of the Sympathetic Nervous System is high metabolic output linked with striated muscle activation and smooth muscle inhibition in the gastrointestinal tract. The endorphins also blunt pain reflexes and stimulates the sweat glands.

Porges (2001) considers the 'fight and flight' aspects of the ANS as the second stage of evolution of the threat response system. This response fosters 'mobilisation behaviour' which could be considered as 'active avoidance' (Scaer, 2012). This implies the perception of danger but an experience of potential agency to escape the danger through action.

***ASSOCIATED PATTERNS OF ACTIVATION*:** Abbass, Lovas and Purdy (2008) describe a major pattern of somatisation observed in MUS patients as an outcome of this kind of physiological activity. Activation of Striated Muscle Tension in response to emotion can be

observed by the patient moving from hand clenching, to arm tension, neck tension, sighing respiration and whole body tension. They have observed that this is associated with health complaints associated with neuromuscular and cardiovascular overreliance.

Chronic activation of the SNS in the face of emotion may also relate to a second pattern of somatic activation observed by Abbass, Lovas and Purdy (2008) of smooth muscle activation. Primarily, it would seem from the physiology of the SNS that certain symptoms related particularly to *inhibition* of smooth muscles may emerge.

***SOMATIC CONSEQUENCES*:** The pattern of Striated Muscle Tension is associated with **Fibromyalgia, Tension Headaches, Muscle Spasm, Backache, Chest Pain, Abdominal Wall Pain and Fatigue** (Abbass, Lovas and Purdy 2008). The pattern of Smooth Muscle Activation is associated with **Abdominal Pain and Irritable Bowell Symptoms** (Abbass, Lovas and Purdy, 2008)

2. VAGAL REGULATION AND THE PARASYMPTATHIC NERVOUS SYSTEM: Another way to understand physiology in threat is by drawing on principles from Polyvagal Theory (Porges, 2011). This theory highlights the specific importance of The Vagus Nerve and in particular of the Ventral Vagal Complex (VVC) and the Dorsal Vagal Complex (DVC). Porges (2011) argues that when faced with threat the former mediates between a social engagement system and our sympathetic nervous system response, whereas the latter has the capacity to trigger a more primitive physiological reaction to threat.

Porges (2001) describes that the VVC has connections with the Sinoatrial Node (the pacemaker of the heart) enabling it to function as a 'break' that can inhibit SNS adrenal influence. He argues that when the vagal tone is high this produces a resting heart rate and that when vagal tone is removed there is little inhibition to the pacemaker and as a consequence rapid 'fight and flight' mobilisation can be activated at times of threat or stress.

Porges (2011) outlines a further crucial function of the VVC is in social communication as it has primary efferent fibres (fibres that carry messages from the nervous system to the muscles or glands) to facial and trigeminal nerves, the pharynx, and the larynx, which appear to enable complex social gestures and vocalisation. In part therefore, the VVC also acts as a social engagement system; which may have evolved to manage threat as we developed the capacity to communicate instead of relying or fighting or escaping (Porges, 1998).

Providing a contrasting response to threat, the DVC has a number of quite different functions, including providing primary neural regulation of the subdiaphragmatic organs (e.g. digestive tract maintaining tone to the gut—also known as the smooth muscles), having an inhibitory influence on the HPA axis to reduce cortisol secretion, and being associated with a hypoxic response and the phenomenon of 'sham death' in animals (Porges, 2001, Scaer, 2012). Overall, the DVC appears to have the capacity to suddenly lower metabolic output, and as such would likely be associated with lower heart rate, drop in blood pressure, loss of muscle tone, relaxation of muscles in the bowel, bladder and sphincter, apnea, and oxygen debt.

Scaer (2012) proposes that dysregulation of the autonomic nervous system can occur in the form of rapid cycling between the parasympathetic nervous system being engaged by the DVC and the sympathetic nervous system engaged by the VVC. In this model, sympathetic and parasympathetic activation can occur rapidly in response to threat, in close proximity to each other or even simultaneously.

***ASSOCIATED PATTERNS OF ACTIVATION*:** The Striated Muscle Tension pathway described above could be activated through sensitisation of the VVC leading to SNS activation and the fight-flight response. Abbass, Lovas and Purdy (2008) have observed three additional pathways of anxiety activation that may relate to the functioning of the DVC; smooth muscle activation, cognitive perceptual disruption and conversion.

Smooth muscle activation can be observed through service-users experiencing symptoms such as churning stomach or bladder urgency. The Therapist can observe a relative absence of Striated muscle tension and instead the service-user may report abdominal cramps or heartburn (Abbass, Lovas and Purdy, 2008). The pathway of smooth muscle activation may have its roots in the functioning of the DVC with its role in regulation of subdiaphragmatic organs and consequences of deficits in inhibiting HPA axis.

Cognitive perceptual disruption can be observed through service-users having difficulties concentrating and staying present in the room, reporting poor memory, or experiencing perceptual changes such as blurred and tunnel vision or experiencing tinnitus (Abbass, Lovas and Purdy, 2008). This could be a consequence of oxygen deficit caused by DVC activation.

Conversion can be observed by a relative absence of Striated Muscle Activation and instead the service-user will experience weakness in the voluntary muscle groups and appear flat (Abbass, Lovas and Purdy, 2008). This may well be analogous to 'sham death' caused by the activity of the DVC. This can be considered the extreme of learned helplessness or as passive avoidance, which would only be an adaptive response in attachment if exposed to trauma without resolution.

***SOMATIC CONSEQUENCES*:** The somatic consequences of these three patterns of activation have been described by Abbass, Lovas and Purdy (2008). Smooth muscle activation relating to DVC activity may cause somatic complaints with the gut, bowel, bladder or sphincter such as **Irritable Bowell Syndrome, Bladder Spasm, Stomach Ulcers, Gastric Secretion,** and **Collitus**. Cognitive and perceptual disruption could cause disorders relating to **Visual Disturbances, Cognitive Problems, Memory Loss,** and **Dizzyness**. Conversion could well relate to disorders of blood pressure such as **Falling, Weakness, Fainting** and disorders of the throat and voice such as **Aphonia** and **Swallowing Problems**.

3. THE AMYGDALA, MEMORY PROCESSES, AND KINDLING FOLLOWING THREAT: Scaer (2012) outlines the effects of the amygdala on our memory systems and subsequent possible somatic consequences of this. Activation of the 'amygdala' appears to inhibit the storage of declarative information in the right hippocampus, our more conscious and explicit information storage system. As a result this compromises storage of episodic memory of personal experience during times of high anxiety. This could also relate to the observation that incoherent and impaired personal narratives can be associated with suboptimal attachment (Neborsky, 2010) and such deficits have indeed been observed in episodic memory following trauma (Guez et al, 2011).

In contrast, the amygdala activation can stimulate arousal of procedural somatic memory via cortical and brainstem centres (e.g. the basal ganglia and motor cortex) that seem to be associated with organising physical motor defence behaviour. At the same time, motor defence behaviour may also be influenced via reciprocal corticocortical connections between the ROFC and the Motor Cortex (Scaer, 2012).

In Scaer's (2012) elegant thesis he describes how somatic procedural memory and brain circuits related to the autonomic nervous system can over time be subject to kindling. This is where iterative states of activation without resolution lead the related circuits in the brain to become increasingly sensitive to activation. As a consequence, increasingly less specific stimuli can activate the kindled circuits, such that eventually exaggerated responses to general stimuli can be observed. When procedural memories from the trauma are activated by increasingly general stimuli this will keep the body in a repeated procedural motor state of threat response.

***SOMATIC CONSEQUENCES*:** Scaer (2012) proposes that false procedural memories account for a number of the symptoms we observe in somatic presentations following trauma. These symptoms include **myofascial pain, neuromuscular dysfunction, head and neck myofascial pain, bruxing and binocular dysfunction**. Furthermore, we could conclude that amygdala activation following kindling could interrupt memory storage and cause **memory problems**.

4. DEFENCE PROCESSES IN SOMATISATION: A further cause of somatic symptoms appears to be the physical consequences of an empathic process that subjects the patients to the pain or distress inflicted by their unconscious impulses. Following attachment rupture, the child experiences unconscious rage, leading to massive unconscious guilt and grief over the aggressive impulse. **Projective Identification** is a primitive defence mechanism where the destructive impulse towards the attachment figure is re-internalised into the patient, as-if to protect the loved object, while simultaneously causing themselves to experience a parallel sufferance (Davanloo, 2005; ten Have-de Labije & Neborsky, 2012; Abbass 2015).

Whilst the neurological correlates of Projective Identification are unknown, the capacity to experience perceived bodily states in others is central to emerging evidence of so-called mirror-neurons. Domasio (2012, pp103) describes mirror-neurons as an as-if body loop system where the brain simulates in its own 'body maps' a "body state that is not actually taking place in the organism," which reflects the perceived state in the other. If this is demonstrated as active in imagined-other states then it could offer a potential neurological basis for projective identification. The somatic experience of guilt about this rage is clinically observed to remove or markedly reduce these symptoms in session (Abbass, 2015).

SOMATIC CONSEQUENCES: The somatic consequence or projective identification is idiosyncratic, with its presentation depending on the nature of the destructive impulse associated with the unconscious rage. Commonly observed examples of this include **choking panic attacks** when suppressing a guilt laden urge to strangle, **crushing chest pain** with an urge to crush another's chest or **headache** with urge to smash someone's head. The symptoms can be very specific in both location and sensation: for example an urge to stab in the right temple can result in a **stabbing sensation** directly in that area (Abbass, 2015).

SUMMARY: Emotions are hard-wired into subcortical regions of the brain to act as unconditioned stimuli to guide our behaviour in ways that support our capacity to elicit care. In unhealthy attachment the caregiver may respond to these emotions with abandonment, threat, or harm. The emotions become conditioned with anxiety and defensive habits to keep the feelings at bay. Later episodes that trigger emotion (or compromise defences) will lead to activation of anxiety causing patterns of physiological response that may account for somatic symptoms or to a defensive process that may re-internalise the pain associated with the emotional impulse towards the attachment figure. These processes will be automatic, unconscious, and outside of the individual's awareness.

PART TWO: A THEORY OF CHANGE

Based on the theory of cause outlined above, we propose that any sufficient theory of change would need to have the capacity to replace affect dissociation with affect regulation. This would involve addressing the defensive strategies that promote dissociation, addressing the patterns of anxiety manifestation that sustain the somatic symptoms, and investigating the underlying unconscious emotions.

Freud (1926) long recognised that the patient's unconscious feelings can become obscured by anxiety and defences, instead expressing themselves only as resistance to change and maintaining the patient's suffering. Whilst Freud had developed a profound theory of cause he struggled to find sufficient methods to frequently and reliably bring about change.

ISTDP is a method of short-term psychodynamic therapy pioneered by Habib Davanloo since the 1960s (Davanloo 1987a, 1987b, 1990). Through his experience working alongside grief and crisis specialists Alvin Semrad and Erik Lindemann, he had identified that unconscious emotion is uniquely available at times of crisis. This provides an exciting opportunity to rework the conditioning of the emotion with the threat response systems.

Davanloo developed a series of techniques with the aim of establishing an intrapsychic crisis within the patient, such that they would consciously and willingly abandon their pathological defences and allow their unconscious affect to rise into consciousness (Davanloo, 1990, Neborsky and Ten Have-de Labije, 2012, Coughlin and Malan, 2007).

In Davanloo's method, from the outset the therapist clarifies defences and addresses anxiety, and through pressure and challenge invites the patient to make an active choice to abandon old defences that maintain their suffering. This activates longings for closeness and complex transference feelings to emerge, leading to the uncovering of the affect relating to the original attachment trauma, which can then be worked through. This approach has been well documented by David Malan and has been further developed by students of Davanloo, including Neborsky (2001, 2010, 2012), ten Have-de Labije (2001, 2010, 2012), Coughlin (2004, 2007), Abbass (2015), and Fredrickson (2013).

The key mechanism of change is to create an intrapsychic crisis within the patient with regard to their affect dissociation by invigorating their healthy longings for attachment to oppose their no longer healthy learned response to suppress their own feelings and longings for emotional closeness. This enables core emotions[1] to emerge offering opportunities to reprocess through co-regulation leading to physiological changes that reduce or remove the physical cause of somatic symptoms.

The theory of cause outlined in this article has highlighted just a few of the significant ways the development of the brain is profoundly influenced in attachment. In order to understand how ISTDP brings about change, it is essential to understand how the brain itself can be changed.

One of the major advances of modern times in our understanding of how the brain changes is the discovery of 'neuroplasticity'. This is defined as "the ability of the nervous system to respond to intrinsic or extrinsic stimuli by reorganizing its structure, function and connections" (Cramer et al, 2011, pp1591). In other words, the brain has the capacity to change itself such that the 'architecture' of the brain can differ between people and even within a single individual across time depending on how the brain is used and on the environmental factors it is subjected to.

The Psychiatrist and Psychoanalyst Norman Doidge has been a passionate advocate of

the importance of neuroplasticity for understanding how to bring about change for people suffering from mental and physical health problems (Doidge, 2007). In particular he has championed the work of Edward Taub who demonstrated the property of neuroplasticity in monkeys and later applied his understanding of neuroplasticity to humans by developing the Taub Clinic to help rehabilitation of stroke victims. The recovery of Taub's patients far exceeded those who received only conventional rehabilitation and were beyond that expected based on received wisdom of stroke clinicians.

Taub essentially identified that to promote neuroplasticity to recover function, he needed to prevent stroke sufferers from using their substitute coping methods (e.g. using the unaffected limbs instead of their weakened counterparts). Using the unaffected limb causes the 'motor-map' in the brain responsible for common limb movements to "weaken and atrophy, according to the principle of use it or lose it" (Doidge, 2007, pp141). Three of the key methods Taub used to promote neuroplasticity and recovery function were; providing longer more intense rehabilitation sessions, 'shaping' behavior by rewarding any small activity that moved towards using the affected limb more, and most importantly to constrain the use of limbs unaffected by the stroke.

We argue that the attachment conditioning for patients with MUS has led neurological networks associated with facilitating affect dissociation to become strengthened whilst the networks that could foster affect regulation atrophy and become weakened. ISTDP harnesses Taub's principles of creating change through neuroplasticity by drawing on the psychotherapeutic equivalents of his methods of change. ISTDP is delivered in longer sessions than the typical hour of therapy, 'shapes' behavior by encouraging the patient after any small improvements in affect regulation capacity, and most importantly constrains the use of the patient's defences which would otherwise support affect dissociation. In this way, ISTDP promotes neuroplasticity that enables the brain to establish and strengthen its neuronal networks that foster affect regulation and weaken those that promote affect dissociation and anxiety.

EVIDENCE BASE OF ISTDP FOR MUS: ISDTP has been subject to a range of randomized control trials and repeated measure design studies across different psychiatric diagnoses including Personality Disorder, Anxiety Disorders, Bipolar Disorder and Medically Unexplained Symptoms, as well as samples of a more broad range of diagnoses in routine adult mental health clinical populations (Abbass, Town and Driessen, 2012; Town and Driessen, 2013).

Abbass and his colleagues at the Centre for Emotions and Health at Dalhousie University have undertaken extensive work in ISTDP and MUS. His approach recognizes four pathways of somatisation that can emerge (striated muscle, smooth muscle, cognitive perceptual disruption, and conversion) and identifies somatic presentations associated with each pathway (Abbass 2010a).

Abbass' innovations in this area have included drawing on ISTDP principles to develop the notion of an emotion-focused interview that can be taught to medics and used as a screening tool for MUS in Hospital Emergency Departments (Abbass, 2005; Abbass 2010a). Not only does this prevent MUS from being solely a diagnosis by exclusion but this also provides a practical tool for clinicians to identify patients who could benefit from ISTDP. Indeed, qualitative research exploring the subjective experience of patients in therapy supported the view that directly observing the physical effects of emotion in medically unexplained symptoms can facilitate patients in making mind-body connections to bring about change (Town, et al 2017).

Abbass' work has highlighted research into ISTDP for MUS that demonstrates this approach is of particular clinical effectiveness and cost effectiveness for this client group. Russell et al (2016) report on data from the Centre for Emotions and Health to examine outcomes for a twenty-six patient cohort with psychogenic non-epileptic attacks who were treated with ISTDP. Over an average treatment length of only 3.6 sessions there were significant reductions in symptoms and interpersonal problems for this group alongside significant healthcare cost reductions. Compared to baseline costs there was a reduction of 88% in the first year following treatment, followed by 90% in year two and 81% in year three.

Hinson et al (2006) provided ISTDP for ten patients with psychogenic movement disorder. Ninety percent of these participants completed their treatment and significant improvement was reported and observed in blinded ratings of the movement disorder itself and in self-report of these symptoms, as well as significant reduction in anxiety and depression, alongside significant improvements in general functioning.

Hawkins (2003) applied ISTDP as an eight-week group intervention for back pain to promote the experiencing of repressed emotions. Forty-seven patients received treatment and significant changes were found in self-reported pain scores.

Abbass, Lovas and Purdy (2008) reported on twenty-nine patients suffering from recurrent headaches treated with individual ISTDP. They reported significant reduction in psychiatric symptoms as well as achieving service related cost-savings. Abbass (2009,2010) also reported on fifty ISTDP treated patients who had medically unexplained symptoms using ISTDP in an emergency department setting. These patients also showed significant improvement in symptoms such as somatization, anxiety, and depression, as reported by the brief symptom inventory. There is also recent evidence from a randomized control study finding that internet-delivered ISTDP was a more effective treatment for MUS than 'treatment as usual' (Chavooshi, Mohammadkhani and Dolatshahi, 2016a) and it showed greater efficacy when conduced face-to-face (Chavooshi, Mohammadkhani and Dolatshahi, 2017).Baldoni et al (1995) compared the outcome for a group of twenty-six patients suffering from urethral syndrome and pelvic pain. Half the group received 'treatment as usual' and half received ISTDP. They reported significant improvement in symptoms for those who received ISTDP at termination with 70% of participants in remission at four-year follow-up. In comparison to 'treatment as usual', the ISTDP group showed significantly better outcomes for addressing target symptoms, including anxiety, depression and hostility.

In an interesting study by Ghorbani et al (2000), they investigated the impact of ISTDP on the immune system. They made pre and post measurements of t-helper and t-suppressor cell counts for 27 participants in a student population. The participants either received 6 sessions of ISTDP or verbal disclosure group sessions. They found significant improvement in cell counts for the ISTDP group relative to the control group.

In addition, there is preliminary evidence for the application of ISTDP to Fibromyalgia (Flibotte, 2012), irritable bowel syndrome (Svedlund et al, 1983), and atopic dermatitis (Linnet and Jamec, 2001). There is also a recent control-group study indicating superior outcomes for patients with somatic pain who were treated with ISTDP compared to Mindfulness-Based Stress Reduction (Chavooshi et al, 2016b).

Abbass (2009, 2010) investigated the cost-effectiveness of ISTDP for MUS in his review of fifty patients receiving ISTDP in an Emergency Department. He reported that over an average of only 3 to 8 sessions there was a 69% drop in emergency department visits per year, accompanied by high patient satisfaction ratings. This created savings of $504[3] alone on the basis of reduced hospital visits.

In a large-scale study of cost-effectiveness, Abbass et al (2015) examined the outcomes of ISTDP treatment for patients with both psychiatric and somatic presentations, with the latter being the majority. They compared 890 treated cases to a control group of 192 patients who did not receive ISTDP. The average treatment length was just 7.3 sessions, which yielded significant improvement on measures of symptoms and interpersonal functioning. Furthermore, by three-year follow-up the ISTDP treated patients had accrued an average cost reduction of $12,628[2] at an estimated treatment cost of only $708[2] per patient.

SUMMARY: ISTDP offers a comprehensive model for working with MUS by addressing the learned defensive strategies and anxiety response that may otherwise promote affect dissociation and through determinedly investigating the underlying unconscious affect activated by the patient's attachment longings. This approach draws on principles of neuroplasticity to bring about change. Preliminary evidence suggests that ISTDP may offer a clinically proficient and cost-effective approach to alleviating MUS of a somatic nature.

PART THREE: CASE-VIGNETTE

In this vignette the therapist is the lead author who has undertaken core-training in the attachment-based ISTDP of Robert Neborsky and Josette ten Have-de Labije (2012). The patient kindly gave her permission for their information to be used as a vignette. Identifiable information has been amended to maintain patient anonymity. The patient self-referred after her neurologist recommended ISTDP as a treatment for somatisation. The patient's symptoms included pain in her arm, episodes of stomach and abdominal pain, nausea, muscle weakness, dizziness, difficulty thinking, and tinnitus.

At the outset of therapy when describing her symptoms she would become immediately anxious. Her anxiety manifested in striated muscle tension (hands, shoulders, back of neck, head, legs, and chest causing shallow breathing), smooth muscle activation ("knot" in her stomach), and cognitive perceptual disruption (nausea, dizziness, cloudy thinking, tinnitus, and some depersonalization). Pressure towards expressing feelings would often trigger defences such as ignoring and minimizing her internal experience and taking a stance of helplessness, passivity, self-dismissal and self-devaluing in the face of her own needs, feelings and longings.

Her presentation was consistent with the formulation that her core feelings had, in her attachment experience, become conditioned with anxiety and defences of affect dissociation. Strikingly, her defensive structure in relation to herself mirrored her self-report of her parental relationships, as she came to identify her mother's tendency to be dismissive and devaluing towards her and her father as taking a helpless passive position, failing to support her or stand up to her mother. The following transcript from a session in the middle of therapy illustrates the relationship between her attachment experience and the association between her core feelings, anxiety, defence mechanisms and some of her physical symptoms. Descriptions of observable behavior are presented in bold and comments on technique are written in italics.

Therapist: What was is that you were thinking of in particular in relation to her 'sadism'? (*Asking for an example creates pressure towards feeling, using client's own word of 'sadism' about her mother)*

Patient: I was just thinking of her washing (me), it felt like torture. That's before six actually. I had forgotten I had known that. *(Forgetting had been a defence to sustain affect dissociation.)*

Therapist: So when you think about that, what are you experiencing and what are you seeing and what are you feeling in your body? *(Drawing patient's attention to her emotional experience in the body)*

Patient scrunches up her face, breaths more shallow, and then sighs (*focus on affect has triggered anxiety in striated muscles)*

Patient: I just feel terrified.

Therapist: Where are you noticing the terrifiedness? *(Patient has labeled her experience as terror. The Therapist wants her to regulate her anxiety by paying precise attention to her bodily experience).*

Patient: Just. Right, Right in the pit of my stomach, not a sicky stuff, a deep pit of my stomach, kind of, I suppose its anxiety isn't it. (*Patient indicates smooth muscle anxiety)*

Therapist: yeah…terror for your life in a sense?

Patient then scrunches eyes and releases a quiet pained sound

Patient: ooh…I'm just. I'm just feeling terrified

Patient then becomes weepy. *The Therapist interprets this as a defence of helplessness.*

Therapist: Where do you see yourself?

Patient: We're in the house…I don't know.

Therapist: What is it your mind is noticing?

Patient: I don't know?

Therapist: You're having a reaction right now. What's going through your mind right now?

Patient: I don't know. Really I don't know.

Therapist: Are you still in touch with that sense of terror? What is that terror about?

The patient takes a deep breath. *Beginning to regulate her anxiety.*

Therapist: Can you pay close attention to it? To how your Mum is acting towards you. What is it that your terror is about in relation to how your mum is acting towards you?

The patient sighs again and then scrunches up her face.

Therapist: Help me understand what is happening right now for you? When I say to you, "what is the terror about when you think about what your Mum was doing to you" that is when you have an emotional reaction.

Patient: I don't know. I've got no picture. *(defence of repression)*

Therapist: What are you connecting with? It seems like there is something there…You said she was a "sadistic bitch" *(quoting client from earlier)* but you didn't know where that came from and now you notice this feeling of terror.

Patient then goes on to share about some of her memories of being older than six when she was hit by her mother. She observes that she thinks this happened from when she was about four, although she cannot picture it. Therapist and patient then have a brief conversation to check that she is not shaming herself, which has been a previous defence. She indicates she is not. The Therapist asks about other related memories.

Patient: I'm feeling frightened.

Therapist: Who is it that's making you feel frightened?

Patient: It's Mother.

Therapist: If you allow yourself, rather than be in the helpless position of a four-year old girl and allow yourself to have all the strength you want. What is it you feel? If we help your body out of this feeling of helplessness? If we give it a different response? *(Constraining the defence of helplessness and focusing on core emotion)*

A few moments of silence whilst the patient is thinking

Therapist: Because your brain goes to helplessness in response to the terror, which is what set up that response in your life whenever that terror got aroused by stimulus that becomes generalized. Your body goes to helplessness and turns the feelings on yourself. *(Therapist identified function of the defence to invite the patient to turn against it)*

Patient: So I need to fight back.

Therapist: Is that what you want to do. Would you prefer that to helplessness, because it's not for me to say what you should or shouldn't do? *(Therapist making sure the patient is not using a defence of compliance)*

Patient: She did terrorise us, all of us.

Therapist: Are you having a reaction then when you say that, "She did terrorise us"? (**Patient nods).** What's coming to your mind?

Patient: Just. She did. She did terrorise us.

Therapist: How did she terrorise you?

Patient: She just, always, never knew what mood she was going to be in. Constantly walking on egg shells.

Therapist: So if you take a new position rather than helplessness, what is your feeling towards her for constantly putting you in a terrorized position? How do you feel towards her about doing that? *(Therapist attempts to constrain defence and mobilise core emotion)*

Patient: I do feel like I want to fight back.

Therapist: Where do you feel that inside?

Patient: I still feel really sick. *(Smooth muscle anxiety pathway triggering nausea)*

Therapist: Hmmm. You see what's happening. Because…

Patient: Yes, because I'm fighting back to mother, I start getting sicky, like a self-attack or anxiety. *(Patient showing growing understanding of pattern of feeling, anxiety and defence)*

Therapist: Because back then, if you had done that…

Patient: You'd have got it. (**Patient mimes out hitting with back of hand**. *Patient uses defence of speaking in third person, but on this occasion the therapist opts to maintain momentum by reminding her that she is safe now and returning to the focus on her affect.)*

Therapist: Whereas now, you're safe.

Patient: Yeah

Therapist: Knowing that you're safe and you can be as powerful as you want, where are you feeling the urge to fight back. I'm interested if you're feeling the anger inside?

Patient: I'm not *(defence of ignoring and denial, which she then challenges herself, a good sign of her developing attentive ego).* Well a bit. It's really just like subtle.

Therapist: Where's the subtle feeling of anger?
Patient: (**Put's hand to jaw and rubs**) I just kind of feel cross in my jaw, and tense in my jaw.

Therapist: So you're inhibiting your jaw.

Patient: Now I do focus on it. I do feel angry.

Therapist: What happens to that anger inside? What's the movement of it? *(making sure that the patient is in touch with the physical experience of the anger)*

Patient: Upwards. It's upwards.

Patient then gestures from her lower torso to her upper chest. She pauses then sighs. (*This indicates striates muscle anxiety, which is positive sign for continued focus on her core feelings*)

Therapist: And if you allow it to spread? Does it feel like you can do that?

Patient: Yes, I can feel it in my arms as well. I do feel cross.

Therapist: And what is it you are doing? (*Now the patient is labeling the feeling and can experience it in her body, the therapist seeks the impulse attached with the feeling)*

Patient: I fast-forwarded several years. When I was a teenager, I must have been about 13 **(brief Pause, then a sigh).** Oh god. She threw a jug of juice on me. Which doesn't sound like a big deal. Oh…I'm minimizing it aren't I? *(Notice how the patient is beginning to own the process of defence blocking herself, as she blocks her own minimizing)*. It was a huge deal **(patient sits upright and becomes more animated)**. It was in front of my auntie as well. So it was completely humiliating. She wasn't happy enough just terrorising you, she had to humiliate you as well.

Therapist: She wasn't happy enough just terrorising you, she had to humiliate you as well.

Patient: Yeah, with an audience so everybody could see. See what you had done.

Therapist: So how does that make you feel towards her as you picture the scene?

Patient: I feel really cross.

Therapist: Where do you notice feeling that?

Patient: Across my shoulders, in my arms, my jaw feels really tense.

Therapist does some further checking on physical sensation to ensure the patient is not fusing anger and anxiety. Then the therapist refocuses on the patient's impulse.

Therapist: Where does your anger want to go towards her? What do you see?

Patient: (**Sighs)** I want to do what I wanted to do at the time, but of course I couldn't. Which was pick up the jug and whack her with it.

Therapist: Can you describe what you can see yourself do?

Patient: It's only a plastic jug, but I would like it to be a heavy glass one. I would like to beat her with it.

Therapist: How do you do that? What do you see?

Patient: I can see myself hitting her on the head, but as I saw that I could feel it in there (**patient points to the crown of her own forehead**).

Therapist: Yeah. So you somatise it on yourself *(therapist draws patient's attention to her somatisation through projective identification. How she suffers a headache instead of her mother in imagination).* If you don't turn it on yourself…

Patient: I'm trying not to. That's where I want to hit her (*points to imaginary mother in front of her—with more strength in her arm)*

Therapist: So how do you hit her?

Patient: With the bottom of the heavy glass jug. **(The patient acts out with right arm slamming down jug on mother)**. With a nice heavy bottom.

Therapist: Are you feeling the anger right now. It's hard for me to tell. *(The therapist is keen to make sure the impulse is experienced alongside attunement to her feelings in the body.)*

Patient: I'm really, I am, but it's wrestling with that anxious feeling. I feel really disturbed. I feel shaken **(Sighs).** I don't want to be the vicious person that she was.

Therapist: Sure, and you're not **(patient nods and looked reassured).** Like all humans you have rage inside of you that is activated…(*The therapist is referring back to previous conversations about the feeling of rage and anger being a normal human feeling).* So is that all you had a sense of wanting to do?

Patient: I'm getting that headache again *(Patient experiences a headache in place of experiencing her rage and guilt.)* **Patient smiles as she recognizes this as somatisation.**

Therapist: Yeah you see. So turn it on yourself or turn it on her? *(Challenging patient to drop defence of self-attack)*

Patient: I'm gonna turn it on her.

Therapist: What are you going to do with that anger?

Patient: I'm going to hit her repeatedly with the heavy glass jug (in imagination). (**Mimes out repeated hits with arm**) On that side of HER head. I can picture it in the lounge where it happened. This is how I wanted to respond then. *(In saying this, the patient confirms this is the original rage that was repressed and not a new one created for the purpose of therapy)*

Therapist: And what happens next? How many times do you hit her?

Patient: **(Patient sighs)** I don't know. Loads. Loads. I can see her screaming, which is nice. I feel powerful. *(The patient recognizes the sadistic element of the rage she experiences towards her mother, which is essential in also understanding the guilt she repressed.)*

Therapist: So you notice you feel good seeing her suffer.

Patient: Yes. Although at the same time I don't want to be vicious like she was. But she deserved it.

Therapist: So what do you see. What is hitting her in the head causing to happen to her head as you see that she is screaming?

Patient: I see her hair is matted with blood. Then she falls onto the ground and I just keep hitting her with the jug.

Therapist: In the same spot

Patient: Yeah **(Patient momentarily rubs her own head)**

Therapist: How are you doing it to HER? (*to counteract emergence of defence of turning rage on herself. Refocusing on impulse being towards mother.*)

Patient: Like that, with the jug (**Patient demonstrates impulse**)

Therapist: Can you see the blood in her hair.

Patient: Yeah

Therapist: She still screaming?

Patient: No she's stopped screaming

Therapist: What happens next?

Patient: Her head is broken.

Therapist: Is that what you see?

Patient: I think I watch too many films because I can see her skull.

Therapist: And then?

Patient: There's some squashy brain on the jug. That's a bit gruesome **(patient then scrunches her face as she experiences a spike of anxiety in the face of her affect of guilt that is emerging.** *It is essential that the therapist helps her to experience her guilt instead of dissociation from this)*

Therapist: Just stay with the feeling, let it out. What's happening now?

Patient: I'm just feeling really sorry for what … (**long pause)**

Therapist: So you're feeling guilt?

Patient: Yeah

Therapist: Where do you notice feeling that inside?

Patient: I don't know, I feel so. I don't know. Where do I feel guilty. I don't know.

Therapist: I see tears.

Patient: I don't know.

Therapist: Is there a heaviness?

Patient: No, I just feel a bit sick. *(Patient replaces feeling of guilt with anxiety in smooth muscle pathway, though this appears to reduce as she names the feeling)*

Therapist: About what is the guilt?

Patient: That I had to kill her. That I had to be so horrible to her.

Therapist: And that you enjoyed it.

Patient: Oh yeah. **Patient Pauses**

Therapist: Is she dead when you picture her

Patient: Yeah

Therapist: What do you see when you picture her?

Patient: **(Patient experiences a wave of sadness evident on her face)** I can see her looking like she did when she was actually dead. It's very sad that. Very sad.
Therapist: (**Patient is breathing deeply and expressing some tears of sadness)** You're still holding back grief?

Patient: No I don't think so.

Therapist: What do you want to do with the body. Is there anything you want to do with it before you bury it? (*Therapist aims to get in touch with longing for closeness that is love, which underlies the rage, guilt and grief)*

Patient then takes a deep breath and experiences an upsurge of grief, she holds back for a moment and then the tears emerge in full.

Patient: I just hold her.

Therapist: How do you hold her?

Patient: I just pick her up, her top half in my arms. And give her a cuddle.

Therapist: How does that feel? *(Focusing on the experience of love and the longing for closeness inside of patient)*

Patient: It feels nice actually.

Therapist: Yeah. You long for that connection.

Patient: I do.

Patient experiences a further upsurge of grief, which she expresses through tears as she recognizes her longing for connection more deeply.

Patient: I couldn't even cuddle her when she was alive because she was moving constantly. She could never be still. (*Patient says this in a way that seems empathic of her mother's suffering).* I then put her back in her coffin. Back in her graveyard.

Therapist: Can we do that slowly? How do you picture where you bury her?

Patient: In a lovely graveyard. I freshen up her flowers on the top. Seasonal Daffodils.

Therapist: Can you say to her, "Mum, I'm sorry that I killed you" *(Therapist is trying to help the patient honour her guilt to enable her to move on)* **(Patient pauses and sighs)**.

Therapist: This is important for the full extent of your feelings.

Patient: Mother. I'm sorry that I killed you.

Therapist: I had to kill you in imagination…

Patient: I had to kill you because you treated me so badly, that I just snapped, and I'm really sorry (**patient is crying as she expresses these words)** that we could never share the level of love and intimacy that I wanted to share with you.

Therapist and Patient wait until her tears subside

Therapist: How are feeling right now?

Patient: I feel quite relaxed actually. I do feel as I knew I would, relaxed and relieved.

Therapist: That's interesting.

Patient: I knew it would make me feel better (*experiencing her feelings*) but it's hard to get there.

Therapist: So what you were describing is that as a result of being terrorized by your mother, you experienced rage towards her, as a child the only way to cope with that was to go helpless and to turn it on yourself through self-attack and also through somatisation. And we saw that when you went to go through the images in your mind, the moment you went to express the rage that was there towards your mother, you turn it on yourself and you give yourself a headache. How's your headache now?

Patient: It's gone

Therapist: Great. So you saw that by being able to express that rage in the right direction. Adult to adult, in your imagination, you were able to put it where it belonged rather than turning it on yourself.

Patient: I see it. It's crystal clear…I do really understand. **(Pauses thoughtfully)**

Therapist: So can we come back to your sense of pride for what you have given your children? *(connecting to a previous conversation in the session)*

Patient: (**Experiences a wave of sadness with her tears but this time, without any anxiety**). That's grief. Because I gave them what I wish I had.

I bought a photo…or two. **(The patient then shares photos she had brought to the session of her children when they were infants)**

Therapist: They're very cute.

Patient: I am proud of them, I am proud of what I've achieved.

OUTCOME: In total the client attended thirteen sessions of ISTDP over a period of about 16 months. These were block therapy sessions about once monthly intervals lasting between two and three hours. At the end of therapy the patient reported that her internal self-critical voice had almost completely gone and that she felt transformed in her everyday life. She felt able to act on her will, without becoming as anxious, and as such was able to get her needs met. She expressed sadness for how long she had suffered but joy for the alleviation of this suffering.

Her somatic symptoms associated with smooth muscle activation and cognitive perceptual disruption (knot in stomach, nausea, dizziness, cloudy thinking, tinnitus, dissociation, and headaches) had dramatically reduced by the end of the therapy. Her arm pain had not changed, but she reported that as she had become more assertive about getting her needs met, she had managed to obtain further specialist consultation regarding her arm pain and this led to a helpful diagnosis of a medical condition for that symptom.

At six-month follow-up she had maintained these important changes and described that she barely ever experiences her previous anxiety symptoms at all. She stated that her

"emotional health has been quite robust" despite a number of challenging experiences, adding that "The Inner Critic that we slayed has remained dead and buried." Finally, she offered a beautiful comment on attunement and self-compassion when she added, "The key is being able to acknowledge how cross I am about things" and "to remind myself it's okay to feel like this."

CONCLUSION

The transcript above is provided to demonstrate the theory of cause and theory of change that has been described in article. These theories have been drawn together based on developments in affective neuroscience, attachment theory, and polyvagal theory alongside the innovation in the development of ISTDP from its conception by Davanloo to later pioneers who have applied ISTDP to somatisation and also integrated it with attachment theory.

The theories of cause and change described in this article are developing fields, and as such much more research is required to develop these understandings and to investigate the accuracy and validity of these claims. It is the authors' hope that as practitioners we take our service-users seriously when they ask us about the causes and treatments for their medically unexplained symptoms and that we find ways of implementing effective psychotherapeutic methods to alleviate the suffering of the many people whose lives are profoundly disturbed by somatic health problems.

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[1] 'Core emotion' refers to affect experienced as rising centrifugally from the 'core' of the body (e.g. rage, guilt, grief, love). This is a phenomenon identified by Davanloo from his extensive case series of recorded therapy sessions.

[2] In Canadian Dollars

From Many Two; From Two One: Heuristic for an Emerging Paradigm

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Abstract

Medical and psychological science and practice evolved markedly during the 20th century. And, while advances continue to be made, impasses have been encountered in both psychological and medical diagnosis and treatment. These impasses can probably be attributed in part to dissociating medicine and psychology into largely separate fields instead of emphasizing collaboration and integration of disciplines addressing multi-etiological conditions. Examination of factors involved in intergenerational transmission, procreation, gestation and physical and emotional development show that biological, psychological and social factors are almost always co-occurring and reciprocally determined in human matching, mating, reproduction and development. The importance of Medical Psychologists—doctors in psychology with integrated medical-science training—to the evolution of a mutli-etiology healthcare is highlighted. And, a linguistic construction—"psycoquulum"—connoting the permeation of psychological factors in human organismic development is proposed to capture the idea of etiologically-concurrent "medical-psychological constructs" and as a heuristic encouraging attentiveness to this continuity of domains in addressing human health, illness and healing

Introduction:

Lao Tze (604-531 BC), the early Chinese philosopher, sage and commentator on Taoism is credited with articulating in the famous ancient tome the Tao Te Ching the emergence of the physical and mental world:

"Tao begot one.

One begot two.

Two begot three.

And three begot the Ten Thousand Things."

Taoism is the ancient Chinese philosophy concerned with understanding the essential nature of reality as the emanation of corresponding dualities, emerging from ambiguous nothingness, seeking integration into wholeness and found in all opposing and reconciling forces throughout time and throughout the universe. In Western science, the parallels are processes of cell mitosis and meiosis that have emerged out of billions of years of attracting and repulsing physical and chemical forces and events comprising the evolution of our universe.

Looked at retrospectively—from our vantage point of human life—the coming to be of a human being, with his or her mental, emotional and physical attributes, can be understood in terms of Lao Tze's words engineered in reverse. The physical and psychological human being is the integration of two physical and psychological beings (the mother and father) who are, themselves the composite, or coming together and emergence of multitudes of physical, psychological and relational experiences occurring over a lifetime in an infinite world of interpersonal, social, world and cosmic events.

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Considering the individual as the coming together of a vast array of conflicting and harmonizing, physical and psychological/relational variables in two individuals—and finding expression in the procreation, gestating and raising of a third individual—provides a helpful heuristic, and, potentially, the basis of a literal model for examining the emergence and development of the psychological-physical event we call "a human being." At the intersection of all these multitudes of physical and psychological elements coming together in procreation, continuing through gestation and attachments relations are junctures wherein the emerging continuity of mind and body can be directly observed and examined as just that—a continuity and interaction—the likes of which cannot be fully understood by considering only either one pole or the other. As such, the present paper considers and examines those events at the nexus of human interaction, procreation, conception and pre- and post-natal development that comprise our human template for an eventual, autonomous functioning biological and psychological human being.

Does the "Nurture versus Nature" dichotomy exist in the real world?

Isn't nurturance natural and nature nurturing? The question of whether nature (genetic makeup and other biological influences) or nurture (relational-developmental, environmental and learning experiences) are the primary "cause" of a person is ubiquitous in the history and evolution of medicine and psychology. The pervasiveness of the question and the adamancy of proponents of both sides are probably based in an erroneous conceptualization of "mind" and "body" as two, independent albeit interacting entities. The viewer seeing it all solely from one perspective or the other is oversimplifying a complex and multivariate process. While many superficially subscribe to a "mind-body" continuum the complexity inherent in managing simultaneously interacting and interdependent, multiple determining factors must be grasped to understand any disease and formulate any treatment plan.

"At What Point Does Cause Start?"

We examine a baby and his or her experiences of early nurturing (or lack thereof), on up through encounters with other environmental events, people other than his or her primary attachment figures, conditioning experiences, trauma, support and education. These events and experiences also roughly equate with the "nurture" side of the equation. On the biological side of the equation, we give credence to biological factors that the baby may have brought forward with him or her from his parents, e.g., genetics. We consider biological factors in utero (e.g., mother's health habits, e.g., fetal alcohol syndrome), perinatally (e.g., apoxia) to the extent that these impact on the "starting point"—the born baby—postnatally and throughout childhood and adulthood. We look at nutrition, toxins, physical accidents and physical conditioning experiences. These factors are also generally commensurate with the "nature" components of our makeup. We might include a bit of one domain nurture—psychology—or nature—medicine—in the other, e.g., biopsychology or social medicine. But, generally, once we have taken into account both sets of factors—nature and nurture (and their rough correspondence to medical and psychological models)—and considered their interaction effects we tend to think we have done a pretty complete job of working up a holistic understanding of the individual. We call this "the biopsychosocial model" of disease etiology and treatment

Problems and Failings of Modern Medicine:

Modern medical and psychological practice has much to be proud of in reduction of disease and increased longevity. Just the last two decades haven seen a marked increase in life expectancy worldwide. As reported in the 2013 report by the Global Burden of Disease collaborators:

> Global life expectancy at birth for both sexes increased from 65·3 years in 1990, to 71·5 years in 2013, an average increase of 0·27 years per calendar year. Life expectancy increased over this period by 6·6 years for females and 5·8 years for males. Figure 4 shows the yearly change in global life expectancy at birth, with a large drop in the 1990s as a result of the Rwanda genocide and famine in North Korea and the return to increases of about 0·3 years or more per year since 2003. If the median rate of change of the last 23 years continues, by 2030 global female life expectancy will be 85·3 years and male life expectancy will be 78·1 years. Reduced fertility and the consequent demographic shift of the world's population to older ages has led to the mean age of death increasing from 46·7 years in 1990, to 59·3 years in 2013.

Looking back over the 20th century, even working within a paradigm that largely and problematically relies on a bio-reductionist model to conceptualize and treat disease there were tremendous advances in both medical and psychological understanding of health and illness, treatment, and prevention. In his book *The Rise and Fall of Modern Medicine*, Le Fanu (2012) lists quantum jumps in understanding and treatment of health conditions from the early 1900's through the end of that century. An abbreviated list includes antibiotics, Pap smear for cervical cancer, cortisone, identification of smoking as the cause of lung cancer, open heart surgery, polio vaccination, cardiopulmonary resuscitation, oral contraceptive pill, Levodopa for Parkinson's disease, kidney transplantation, prevention of strokes, coronary bypass, the first heart transplant, the prenatal diagnosis of Down's syndrome, invention of the CAT scan, and coronary angioplasty.

Yet, while we have found ways to reckon with many diseases resulting in increased life span we are not necessarily getting healthier. Our longer lives are sometimes devalued as they are not necessarily longer healthy lives. As Le Fanu notes, we have replaced infectious diseases with lifestyle diseases and the bio-reductionistic model is inadequate to address it. Meanwhile, the lack of attention to psychological factors, and concomitant lack of psychology staffing in the nation's primary care centers and community hospitals makes a more integrative conceptualization of disease, treatment planning and revision of lifestyle unlikely or impossible under the current paradigm.

Where mental health is concerned medicine's biggest steps forward were over six decades ago when the introduction of neuroleptics was at least an improvement over long-term wasting in the confinement of asylums. Even then, though, the system was unable to provide enough outpatient psychiatrists to attend to the increased numbers of mentally ill and substance abusing patients returned to the community after the advent of neuroleptic medications (major tranquilizers).

Meanwhile, medications alone have failed to adequately address the multivariate factors involved in most mental illness. Psychologists, adhering to the biopsychosocial model and emerging science became a dominant specialty in the treatment of the mental and substance abuse disorders, and as the biopsychosocial model was validated in an increasing number of diseases, psychologists became important providers in team treatment and integrated care models for many multi-etiology chronic physical disorders (Morris, 1997; Cummings, 2002).

Nonetheless, psychologists and the psychological perspective and psychological interventions have been underutilized in modern healthcare. As stated by Morris in Caccavale's *Medical Psychology Practice and Policy Perspectives*:

> Financial consideration and profit motive rather than science have driven much of the health care and mental health service system design. (Cummings and O'Donohue, 2012; Antonuccio, et al., 2002; Healy, 1997; Morris, 1996). Considerable numbers of psychologists, psychiatrists, physicians, and other mental health professionals have recognized the paucity of science driving the growing use of medications as first-line treatments for mental disorder and have chronicled the science indicating that these drugs only work with a minority of patients, have high risk/reward patterns, and are considerably oversold and marketed (Conrad, 2007; Szasz, 2007; Jackson, 2005; Bowen, 2004; Hobson and Leonard, 2001; Stein, 1999; Schafer, 2003, Volpicellie, et al., 2001; Glasser, 2003; Healy, 2004; Minuchin, 11078; Szasz, 1976). It is clear that treatments with medications for mental disorders have significant risks (Cummings and O'Donohue, 2012), and there is a responsibility to warn patients about this (Jackson, 2005). These mental health disciplines have committed much time and financial support and authored many publications to educate the public and governmental regulatory bodies about the need to remove medical barriers to access to psychotherapists and psychotherapy (Patient Protection and Affordable Care Act, 2010; Amendments—Health Care and Education Reconciliation Act of 2010) (2013).

It is time to consider a different approach, i.e., one where these dimensions of human existence are wed, and entwined in the same construct: the medical-psychological construct. The roots of—and heuristic for understanding this—can be found in understanding the entwined psychological-relational and biological factors associated with pairing, mating, gestating and birth in a larger relational context.

A Medical-Psychological Model:

In looking at our earliest beginnings as individual human beings, medical science has a head-start advantage in its attention to genetics. Genetics precede early infancy and bring us back before earliest childhood, all the way back into the womb and back before that into the genetic makeup of the infant's parents and ancestors. Most psychological developmental theories of health and illness start after birth. (See discussion, below, however of "prenatal psychology.") Medicine, and its theories, on the other hand, have failed to markedly improve mental health beyond symptom relief or symptom masking, probably due to medicine not adequately considering and emphasizing elemental relational factors in earliest childhood, i.e., attachment and object relations that we regularly observe contributing to health and illness throughout life (Maunder and Hunter, 2008).

If we consider the continuity between tissue and psyche—i.e., that these are forms or extensions of one another—then we might consider that the inadequacies of both medical and psychological models (as described above) could be remedied by inclusion of both in our diagnostic conceptualizations and treatment planning. Just as the medical model is inadequate without the psychological perspective, the psychological perspective possibly needs to take cues from medical science. We need to consider earlier, more fundamental beginnings, e.g., prenatally, genetically and epigenetically. We must also acknowledge these "biomedical factors" occur in an environmental context including the context of the relational experience of the mother and father, their object relations expressed in their relationship with one another, and the affective-biological relationship between mother and gestating infant (where said relationship is affected, supported or otherwise, i.e., not supported, by mother's relationship with the prenatal baby's father and the rest of her environment).

Taking the medical perspective we must borrow from psychology and include early relational experiences that, in addition to conditioning the individual's fundamental object relations that will guide his or her relational response—to others, to stressors, to his or her environment, throughout life—throw gene switches and have been shown to dramatically change biological and psychological mechanisms over time (Sapolsky, 2004; Felitti, Anda, Nordenberg, Williamson, Edwards and Marks, 1998). This means early attachment and the role of object relations—and the interacting role these have with physiological attunement (the mother and father's ability to attune with and respond to the baby's homeostatic needs)—as well as those affective factors (e.g., maternal stress during gestation) impacting on the baby's medical health and biological status are relevant to physical and psychological development. Thus, we need to consider phenomena that lie-conceptually, within both psychological and biological realms, e.g, *pregnancy-specific anxiety*, which is anxiety the mother experiences specifically associated with her pregnancy and which can be differentiated from general anxiety during pregnancy (Lobel, Cannella, Graham, DeVincent, Schneider and Meyer, 2008). We must consider epigenetics which is the effect of environmental press (including relational experience) on gene expression (Feil and Fraga, 2012; Sapolsky, 2004).

Considering the range of factors we traditionally conceptualize as "psychological" and those we consider "biological" or "medical," along the dimension of earliest prenatal-postnatal development, we see that at these earliest phases in development the boundaries between these factors blur and their development is evidently more yoked than independent. They are loci on a continuum. Both behavioral (e.g., startle) and physiological (e.g., corticoidal) responses at birth can be traced to events during gestation, e.g., maternal stress. The baby, with components of its constitution and temperament influenced and partially determined by its prenatal environment is birthed and raised by a mother who has already shared psychological and biological experiences and these experiences act both directly on the prenatal baby and affect mother's attachment and subsequent parental object relations after birth. The *crucible of the mother's womb* (itself contained within a network of her relationships, or lack thereof, with the baby's father and her relationship with the social network in which both are ensconced) is catalyzed by, among other things, processes associated with her response to her own pregnant experience which will continue to interact with the organism, the baby, postnatally. Once born the infant will continue to interact with those "prenatal object relations" and externally triggered sensory and experiential environments and their biological correlates.

The implication is that the relationship between factors contributing to development from before conception, through birth and early infancy are a spider-web of interactions. These biological, psychological, and strategic environmental presses are relevant components of reciprocal causation. This "spider web" is the basis of the continuous structure of medical-psychological health and illness. It is our ignorance of this spider web that confounds our assessments and our interventions because we attempt to conceptualize reality as a duality. I am calling this understanding of the yoked biophysical and psychosocial and epigenetic dynamics a "medical-psychological model."

Social and Biological Context: Social Factors and Biological Factors in Mate Selection:

To fully appreciate the "in situ" condition of the gestating fetus we must appreciate the larger socio-cultural-genetic environmental and epigenetic context. This means going back before the conception of the embryo to the larger world-relational network in which the mother and father live and which brought the two together to conceive the baby.

The genesis of an individual extends beyond the fertilized egg that becomes the human being. Fertilized egg resulted from the encounter of a mother and a father in a multi-gen-

erational projection, epigenetic, and cultural press system. This mother and father were brought together in the context of the larger local community and from the larger, world social groups to which they belong. It is these to which we must extend our attention as a beginning point to rethinking our models of health and illness.

In the social group are many potent psychological factors intertwined with biological, genetic, cultural, pairing and mating variables that determine the coming together of two people-procreating the new individual human. There is extensive literature describing the forces in the relational, social, and environmental resource world that determine not only how individuals develop physically and psychologically but how individuals come together, in the first place to procreate new individuals. In the larger social psychological context in which individual psychological processes are ensconced factors like mating and matching criteria, attraction, cultural priorities and values dictate in part who comes together and who is kept apart within the social group.

Forces like available resources including food, water, livable temperatures and available building materials all conspire to push and pull groups, and individuals within those groups in one direction or another. Even in the context of these larger group migrations and cultural developments, biology plays a role. Genes themselves find expression in the behaviors and traits of the groups within which their associated phenotypes emerge and vie for survival and dominance in the gene pool. The genotypes themselves participate in pushing the phenotypes, human beings and traits this way and that in terms of the evolutionary processes that occur. Meanwhile, epigenetics examines the process by which these environmental forces affect genes also determining phenotype. That, throughout this web of determinants and determined variables, the "object of selection"—genotype, phenotype or group—remains controversial (Mayr, 1997) is indicative of the degree of reciprocity between environmental, genetic and epigenetic forces.

Even at the level of vast social forces, in this sea of genotypic determinants the social and related cultural forces act on the genetic factors. Needs of the people of specific social groups and their cultures act on the genotype and the gene pool. That is, even as we expand beyond the sphere of the individual mind-body continuum—into the group, community and culture—we find this continuum and these reciprocal interactions between these forces. They remain inextricable even at this larger level and in this larger sphere.

For example, Laland, Odling□Smee and Sean Myles (2010), describe how cultural activity also contributes to genetics via creating relationships between people and environment that favor specific genotypes.

> "….[S]everal lines of evidence show that dairy farming created the selective environment that favored the spread of alleles for adult lactose tolerance12,13,15,16. Estimates for the number of human genes that have been subject to recent rapid evolution range from a few hundred to two thousand: Williamson et al.14 conclude that up to 10% of the human genome may be affected by linkage to targets of positive selection. Although in the majority of cases it is not known what phenotype was the target of the inferred selection, nor which environmental conditions favored such phenotypes, human cultural practices remain strong candidates, and geneticists are increasingly considering culture as a source of selection on humans" (p. 137)

Such findings are a reminder that, even when we are considering the biological component of health and illness, behavioral factors—and humans' relationship with their environment—including group, social and cultural behaviors, play an important role in establishing those biological components.

Object relations in mate matching and procreation

Object relations theory helps us understand how key social and attachment relationships in an individual's lifetime imprint upon the individual's psyche (a concept oft viewed to contain brain, personality, and mind-inter-relational self), interacting with society and other individuals and with those other individuals' object relations and associated imprints. This is to say that social, biological, cultural and genetic forces bring an individual man and woman, father and mother-to-be together in interaction with the internalized representations of those social forces imprinted in each of these two individuals (Bowen, 1978).

The man and the woman come together under these circumstances, driven by these social, psychological and biological forces, copulate and bring about the fertilization of an ovum. Our, interactive reciprocally-relating and continuously related biological and psychological forces achieve their unique and focal representation in the developing embryo and fetus. The fertilized egg with its associated, combined genetic material has been brought together by social, psychological, object relational and biological forces acting on the mother and father and from this now begins to emerge a unique psychologically-biologically continuous being.

Maternal stress, prenatal development and gestation

This emergence does not go forward without further influences. In fact it is with the emergence of the gestating embryo and fetus that we can see most clearly the continuous interaction of biological, psychological and social forces and see that the true character of these forces is not separate but continuous.

An emerging and developing model of human prenatal development that helps us to most fully understand, and best contributes to this model is that of *prenatal coding*.

> The prenatal period is a time of rapid change during which fetal organs and organ systems are forming and are vulnerable to both organizing and disorganizing influences. These influences on the fetus have been described as programming; the process by which a stimulus or insult during a vulnerable developmental period has a long-lasting or permanent effect (Davis, Glynn, Waffarn and Sandman, 2011)

In this model experiences of the gestating mother in the world, including the interpersonal, relational world in which she is ensconced, direct the development of the fetus in interaction with automatic maturation processes that are part of this stage of life. There is growing literature that shows that psychological stress—which affects health, illness and healing in humans throughout childhood, youth, adulthood and old age (Lucas, 2011; Schneiderman, Ironson and Siegel, 2005)—is already impacting the developing individual's system during gestation.

The challenges and stimuli that the organism encounters in day-to-day dealings with the world, whether that is the world within the womb or the larger world into which the infant is born, act as prods and foils which promote development and health or prevent development and cause illness and disease. Challenge and moderate levels of stress provide stimulation necessary for healthy growth and development; but, excessive or the wrong types of stress can cause a breakdown in the organism physically or psychologically (Schneiderman, Ironson and Siegel, 2005). This is true of the developing fetus also.

> A small but growing literature with human populations has established that prenatal exposure to elevated levels of maternal stress is associated with behavioral and emotional disturbances during infancy and childhood, after controlling for postpartum maternal psychological distress, including post-

> partum depression (Bergman, Sarkar, O'Connor, Modi, & Glover, 2007; Davis et al., 2007; Davis, Snidman et al., 2004;Gutteling et al., 2005; Huizink, De Medina, Mulder, Visser, & Buitelaar, 2002;O'Connor, Heron, & Glover, 2002) (Davis and Sandman, 2010).

There is extensive literature that describes how stressors upon the mother are translated into changes within the body of the gestating fetus and that also result in changes in behavior in the infant after birth. There are changes in the infant's cognitive abilities determined by the level and types of stressors encountered by the gestating mother in complex temporal-developmental patterns. Davis and Sandman (2010) state:

> [P]rogramming influence[s] of maternal cortisol on the developing fetal nervous system [are] dependent on the timing of exposure. Exposure to elevated concentrations of cortisol early in gestation had deleterious effects on subsequent infant cognitive development, whereas exposure to elevated levels of maternal cortisol late in gestation was associated with enhanced performance on tasks assessing mental development. It is possible that effects were observed for the MDI and not PDI because areas of the brain that are critical for cognitive functioning such as the hippocampus and prefrontal cortex are more vulnerable to the effects of GCs (p. 141)

And there are effects on the baby as an infant and on his or her ability to manage and respond to stress which are determined in part by the stress and the stressors experienced by the mother during gestation (Davis, Glynn, Waffarn and Sandman, 2011). Effects on the mother during gestation interact with the effects of the social and relational support she receives including from the father or father surrogate. This is to say that the father or someone in that role also has an impact on the developing fetus even during gestation. Beyond these relatively obvious effects subtle interpersonal and object-relational effects in the interaction between the mother's relationship to her own pregnancy, with the infant (both as a fetus, prenatally and as a baby postnatally) and in interaction between the infant's own prenatal and postnatal traits shape the biology and brain and personality of the individual. *Pregnancy-specific stress* is the mother's stress or anxiety specifically associated with her pregnancy. Pregnancy-specific stress has been differentiated in studies from effects associated with general anxiety and stress during pregnancy and their effect on the developing fetus and the newborn baby (Lobel, Cannella, Graham, DeVincent, Schneider and Meyer, 2008). Thus, the mother's relations with the baby have already begun prenatally. The mother's anxiety about her pregnancy and the gestating fetus are part of her relationship with her baby to be.

From prenatal, perinatal and postnatal phases of the gestation and birthing process, and on into the relationship with the born baby the relations between the mother and infant are a dynamic process. Mother must now interact directly with the baby, attune with the signs and signals of his or her physiological needs for warmth, food, hydration, and comfort as well as with his or her affective needs.

From the stage of physiological attunement, which can be thought of as rudimentarily exemplified by the mother's level of pregnancy specific stress and anxiety—through her emotional containment of the infant via the affective-attunement processes of conventionally-understood object relations (Stern, 1985)—and, extending backward in time through gestation, fertilization, procreation and copulation and the coming together of the man and woman through object relational, social and cultural forces—there are an unending continuum of biological, social, and psychological forces that are entwined and ensconced in one another. This multiplicity of reciprocally interacting biological and relational forces and factors come together in this crucible we call the infant human being.

Birth

Baby is going through the birthing process. At birth the neonate is emerging from a physiological continuous relationship with the mother. This process recapitulates ancestral elements that contributed to coitus participation by the parents and joins the biological and psychological transmissions of the parents' families.

Physiologically, unless there is some obstruction in the communication between the infant and the mother, there are continuous reciprocal communications of the baby's physiological and homeostatic needs. Through vocalizations, facial expression, affect and body posture and multiple other cues mother knows when baby is hungry, thirsty, cold or experiencing some other distress.

Where processes of attunement (Stern, 1985) and containment are concerned the affective domain has been much more thoroughly researched and explored (Stern, 1985; Beebe, 2010). However, consistent with a view of psychological and biological processes and experiences as on a continuum, what happens in coordination and synchronization, affectively, between mother and infant can reasonably be extrapolated to the physiological and biological realm.

Stern (1985) outlines the progression from early attachment relationships to internalized constructs that guide the individual interpersonally-affectively throughout his or her life. Affective attunement of mother and infant, from first contact at birth, and possibly before, instill security and soothing of emotion and containment of accompanying anxiety. These soothing and containment experiences become the cornerstone of the infant's own ability to provide these supports for him or herself. From Klein (1923) forward through Winnicott (1953) our understanding of the role of early, primary object relations in the individual's emotional and interpersonal development has progressively increased, with current laboratory research (Beebe, 2010) further elaborating and explicating this process.

However, the infant's relationship with mother does not start at birth. Before the affectively nuanced experiences inherent in interacting with the born baby are the inner echoings of our most basic needs (biological and for protection). Providing for affective needs is part of a larger parental attitude of caring. But, from the earliest postnatal age the internal experiences and needs are also biological and homeostatic. And, the attunement with and containment or resolution of those needs has precedence in the womb. A danger in the case of pregnancy-specific anxiety is some misattunement between the mother and her fetus.

Thus, the role of object relations in development and relationship is not only the formation of object representation in managing our interpersonal-affective experience (attunement->soothing->containment) (Stern, 1985) but, our physiological response as well. "Self-regulation" on both the affective and physiological levels is of central concern to the Medical Psychologist who addresses mental illness and substance abuse, but also addresses chronic stress and lifestyle related chronic physical illness.

Otherwise stated, a major contribution of the Medical Psychologist is better understanding the role of internalized objects in regulating our physiological states (as related to homeostasis, stress, autonomic and endocrine response) and the manner in which these physiological attunement-containment sequences program us for subsequent disease response to antigens/injury and healing response to interventions. The connection between relational attunement and containment at the affective level that has contributed to the conceptualization of mental health and psychotherapeutic intervention as object relationally-determined events could be further extended to further developing our understanding of relational factors in physical health, illness and healing. For example, there is research

looking at these relational factors associated with response to healer, and the healing relationship in amelioration of stress and response to intervention, e.g., the placebo effect (Kradin, 2004).

Linguistic Construction: Psycoquulum:

The problem with other attempts to integrate psychology and biology, or psychology and medicine is that whether we call our attempt at integration psychobiology or biopsychology or neuropsychoanalysis there is a tendency toward naively giving the biological stratum primacy. There always ends up, with these models, being a much greater emphasis on better understanding our psyches through inclusion of biology than on understanding our biology and biological responding in terms of our psychology.

But, this is not the human condition. While the physical may have primacy in other realms of reality, e.g., engineering, geology, metallurgy (and, there is an argument that can be made there, too, as philosophers, religious people and quantum physicists have engaged in), for human beings the action is in the psyche, in meaning, and conscious experiencing.

Our "psyche" arises initially from matter. Yet, we have also seen how this matter, in turn arises from interacting human social, cultural and psychological factors and forces. Moreover, the emergent psyche is a form-unique that takes primacy over matter in many ways and in nearly all ways important to humans. Thus, the psyche is the yardstick by which we measure all things, including our biological selves. And, when sick, it is even our psyche that chooses treatment of our biological selves. It chooses to focus on our biological or psychological aspects of our biological or psychological selves. We may choose to treat our illness "biologically," but we must not forget that it is our psyche and the relationship of our psyche with other psyches that determines our choosing to do so, or not to do so.

A reductionist biopsychiatric researcher or a Skinnerian operant behaviorist might argue that this "psyche" is itself just a complex of biological events or stimulus-response contingencies based in those events. And, they have, repeatedly. The "complex biological" us ("psyche") is the entity that reads and reacts to these words, including this description of us as a "complex of biological events." Thus, all conceptualizations of our health and illness are both physical and psychological. All responses to needs for health and to cure illness—whether biological illness or psychological illness—are fundamentally, at least in part, psychological responses. There is a biological component. But, the decisive factor is psychological.

Psycoquulum, from the Latin psyche, mind or soul or breath, (what we traditionally conceptualize as our psychology) and coquulum, a cooking vessel (representing what we traditionally conceptualize as our body or biology but, also, as a crucible in which transformation takes place), provides a linguistic device to convey the relational—i.e., our relationship with others, our environment and the universe—that also provides the context of-the biological self, which, in turn reciprocates to the psychological self. Thus, the term psycoquulum captures a psychological-biological continuum, driven by the larger psychological context and host of relational-environmental factors, but reciprocally-influenced by the constrained, yet still essential, biological organism.

Health Assessment and Treatment Considerations and Approaches Based on Psycoquulum and Disorders of the Psycoquulum

Psychological constructs are individual traits that have physiological correlates and are not generally identified in tissue (largely due to amorphous and sub-brain areas in collaboration and responding to relational factors that are too complex to be defined by bio-reductionistic conceptualizations) but are measurable behaviorally. There are countless

psychological constructs. Intelligence, self-esteem, optimism/pessimism, and "the Big 5" personality variables (Hough, 1992) are all examples of psychological constructs. Physiological phenomena, including the systems and organs of our bodies, metabolic processes and diseases and disease antigens can be observed and measured directly. Medical diseases are also, in a sense "constructs." They are defined not just by one tissue event but by looking at multiple events, e.g., lab results, observable symptoms and patient report. It is generally assumed that these conditions are embodied in physical (tissue) events and not just defined by their conceptual sets in the way psychological constructs are.

Clinicians are confounded by certain diseases or conditions that have been investigated but have not yielded clearly delineable etiologies, consistent tissue organization or readily measurable conceptual organization that would define these conditions. Schizophrenia is an example of such a confounding condition. While we can treat many psychological conditions through combinations of psychotherapeutic methods, medications and the healing arts and relational abilities of individual clinicians we have not identified a "unitary cause" of any psychological disease. The multi-etiological and complex causes of mental and chronic medical diseases have been well established and cannot be over simplified by bio-reductionism. At the same time, some medical illnesses are understood in minute detail on a tissue, chemical and metabolic level. Yet, the level of detail of biological mechanisms still has not yielded consistently reliable treatments for some more serious or chronic illnesses. Certain cancers, fibromyalgia, heart disease, diabetes, obesity, hypertension and many other chronic medical diseases have multi-pathway, multi-factor, and multi-etiological bases and eschew reliable prediction and simple unitary treatments. While we may understand the relationship between certain pathogenic factors and chronic medical diseases we cannot fully predict where some people will get lung cancer and who will recover or where exposure to the rhinovirus will lead to clinical rhinitis. We understand that people with compromised immune systems are more susceptible to colds and flu, get every strain and take longer to recover than others. We know that stress and poor self-care are factors that contribute to and are a part of the cause of many diseases, but we have not paid enough attention to the intricacies of psychological factors, behavioral factors and relational factors that underlie poor self-care as well as intermediary factors like stress that compromise the immune system. Nor, have we adequately explored or understood psychological and relational factors in intervention, especially in the cases of medical illness. These factors include the relationship of provider and patient.-

We also know that the multitude of illnesses that doctors of various sorts face in our work have psychological and behavioral correlates and this is true whether the condition is psychologically or biologically based. The biological hypothesis of depression, and each of the neurohormonal hypotheses have been scientifically disproven. Recently we have come to think of depression as a psycho-biological condition with elements of deficits of perception, thinking, and coping abilities and associated experiences of diminution of the individual's sense of self-worth, reduced sense of a capacity to thrive, reduced motivation and initiative and loss of interest even to the extent of loss of interest in life. We also know there are vegetative (biological) symptoms such as loss of appetite, insomnia and anergia correlated with these psychological symptoms. While depression–responds best to psychotherapy we also do see evidence, in a minority of cases of at least short-term improvements in the individual's condition associated with taking medications (Valenstein, 1998). With regards to treatment of depression "[t]he research on antidepressant medications shows efficacy in a small minority of the most severely depressed patients and then only on a minority of the depressive symptoms" (Morris and Caccavale, 2013, p. 161). Medically, we have enough understanding of lung cancer to know that smoking is a significant contributor and that the toxins in cigarette smoke play a role. Smoking for example triggers genomic instability and mutations in cells (Kumar, Vadhanam and Arif, 2013)

and smoking affects the immune system in other ways resulting in the growth of tumors in some people (Clement, Duan and Srivastava, 2015). We know how to reduce the incidence of lung cancer and why some people choose to start smoking (i.e., behavioral and psychological factors) in terms of secondary gain and coping and satiation of unrequited drives. Some people's risk of cancer might be reduced by addressing psychological factors. We know, for example that psychological stress translates through intricate interactions of endocrine and nervous system (e.g., sympathetic nervous and the hypothalamic pituitary adrenal axis) into events in the body that affect the immune system negatively as well as multiple other systems (e.g. cardiovascular, hepatic-portal and pulmonary systems).

All the above is to say, it is known that psychological and biological factors interact to produce disease and wellness. And, in some cases it is difficult to extricate psychological and biological factors since they seem to run on a continuum. Separate medical and psychological paradigms for organizing our view and approach to treating multi-factoral and multi-etiological illnesses are inadequate. Adopting a conceptualization of our health, illness, and healing that assumes that the domains of mind and body cannot be separated could be fostered and facilitated by encouraging a unified-constructs (psycoquulum) conceptualization. Operationally, symmetrical multidisciplinary treatment teams including Medical Psychologists, and mid-level providers under their direction and supervision, collaborating with medical providers potentially encourages a more mindful approach to assessment and healing than is the case with our current paradigm (Morris, 1997; Caccavale, 2013; Cummings, 2002)

Highly-trained and informed specialists (e.g., Medical Psychologists) are helping healthcare to evolve and apply multimodal treatments, multi-factoral etiology of chronic disease. Such multi-disciplinary teams and facilities are scientifically indicated and required to treat psychological and medical illnesses. Top scientists in several disciplines, and top practitioners in several specialties have provided substantive evidence to this effect resulting in the Government's adoption of integrated care models and approaches and scientifically driven treatments in the Affordable Care Act (Horrigan, 2010). Further exploration and development of integrated approaches to conceptualization and diagnosis and treatment of psychological and biological disease has the potential for refining our approach and thinking about health, illness, and healing at a new level and contributing to more effective staffing and program design in America's healthcare facilities and programs. This new paradigmatic orientation can potentially increase our grasp of conditions that we~~,~~ conventionally refer to as psychological *or* physical illnesses. Many conditions that afflict humans are realistically and scientifically defined as having co-developing etiologies.

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CLINICAL PEARL FROM PSYCHOSOMATICS:
Science meets soul in a remarkable tuberculosis cure

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Pathos (fr. Greek = disease) and psyche (fr. Greek = soul) coexist in each individual on a daily basis. This was known to ancient Greeks, most notably Hippocrates. Throughout the times, many interpretations of mind-body relationships existed. In 1818, a German physician named Johann Christian Heinroth coined the term "psychosomatic"[1]. He regarded mental illness as a disease of the soul, caused by sin. Over one century later, psychosomatic medicine gained ascendancy with the pioneering work of psychoanalyst Franz Gabriel Alexander [2] and physician Helen Flanders Dunbar [3]. Since then, numerous studies have documented the psychological counterparts of medical conditions. Engel, Romano, and the Rochester group further developed a biopsychosocial approach to health care that evolved through time. Engel wrote about the memorable Monica case, an infant who suffered from esophageal atresia. She showed different physiological reactions to a "friendly doctor" and a "somber stranger." To the former she responded with excitement and gastric juice secretion, while the latter's presence caused her gastric mucosa to get dry again [4, 5, 6, 7].

The case selected here illustrates, simply and elegantly, the importance of accessing the patient's subjectivity. The doctor's approach opened a path to express and resolve conflicts creatively, in order to activate healing processes. The patient's inner strivings, wishes, and frustrations, which define psychological states, interacted significantly with somatic treatment procedures. Furthermore, like a dramatic plot, illness and healing emerged from within the complexities of his interpersonal context, including significant others and the treating doctor [8].

The doctor is a seasoned French physician with post graduate specialties in respiratory diseases, phthisiology and psychosomatics, having extensively participated in Balint groups [9]. He extracted one remarkable case from his substantial chest of files. His experience in private practice spanned several decades. He also served as Public Health Commissioner for the city of Nancy, France. Upon retirement, he conducted several TB projects in Russia and China as a member of the Lions Club—having served as one of its twelve Governors. This medical doctor's reflections on the psychosomatic treatment of asthma (published decades ago in France) are still relevant today. Moreover, his description and interpretation of an apparently miraculous cure of TB (phthisis = "consumption") make sense, based on psychosomatic tenets. The patient's recovery was not "spontaneous remission" from consumption. Such work inspires those who pursue the root causes of illness in order to help patients recreate health, using the mind as its royal road.

Science meets soul [10] in the healing journey of a twenty-five-year-old man whose parents pressured him to become a priest. Although this profession contravened his wishes, the young man acquiesced in order to please them. Hence, he entered the priesthood. Shortly upon graduation, he contracted TB with bilateral cavitations. Throughout several medical

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visits, it became apparent that this man was profoundly unhappy about being a priest. Such realization led his wise doctor to request a meeting with the patient's archbishop, and both discussed the patient's personal situation. Thereafter, the archbishop talked with his Holiness the Pope who, having grasped the young priest's predicament promptly relieved him of his vows. Two months later, the TB cavitations were closed and, after four months, the patient was completely cured. With an unfettered spirit, the young man went on to other pursuits that brought him joy and stayed in good health.

Dr. Lachkar considers the above observations to be sufficiently compelling for physicians to broaden their somatic approach whenever caring for their patients. It does not suffice to listen to their words. He invites deeper probing into the human side of a patient' health condition. In his words, "a long and heart-felt dialogue is worth more than thirty-six antibiotics..."

What can be gleaned from the foregoing account? Some medical psychologists treat exclusively individuals with mental and behavioral disorders. Others also work with patients diagnosed with medical co-morbidities. Central to all clinical encounters is the psychotherapeutic matrix that provides safety and focused empathy, while also offering approaches for effective problem-solving [11]. Both with mental and physical expressions of dis-ease, somatic and psychosocial treatments are intertwined. In the above instance, even if drugs had eliminated the TB infection, knowing the young man's dilemma was relevant to his health prognosis. This reflects the long-term effectiveness of a psychosomatic approach with a relational framework.

Physicians, psychologists, and pedagogues were the forerunners of psychosomatic care. Freud's well-known cases presented with somatic complaints that expressed mental riddles. In order to bridge the mind-body problem, Freud launched his "Project for a Scientific Psychology," which he later abandoned. He subsequently focused on a meaning-based theory, seeking to understand his patients' physical and behavioral symptoms. Groddeck, a distinguished writer and psychoanalyst who corresponded with Freud, wrote extensively about the personal meaning of illness [12].

With today's advanced imaging technologies such as fMRI, some neuroscientists attempted to explain the mind through the brain. On the other hand, psychoanalysts linked psychological phenomena, such as anxiety or depression, to internal symbolic content and structures. Meaning, which manifests itself through images, thoughts, words, and behavior, emerges in the conversation between patient and analyst. The concept of drive is key to establishing links between psychoanalysis and neuroscience [13]. Moreover, even though the human mind is connected to the physical brain, "there is something irreducibly perspectival and subjective about human experience, both conscious and unconscious" [14]. The mind cannot be totally explained in terms of neurophysiology. Insight into the reciprocal influences between mind and brain is essential to understand health and disease.

In the course of history, mystics, healers, and philosophers have reflected on the impact of mental state on physical health, and vice versa. Over the last century, our understanding of mind-brain relationships has been enriched by the work of seminal authors. Robert Ader coined the term "psychoneuroimmunology" (PNI) to describe linkages among the nervous, endocrine, and immune systems, revealed by classical conditioning of immune function in rats. PNI showed that immune modulation by psychosocial stressors and/or interventions can lead to actual health changes. Feelings, thoughts, and beliefs figure prominently in that equation [15].

Other noteworthy contributors are: Charles Darwin, Stephen Porges, Eric Kandel, and Bruce Lipton. They offer segments of a complex puzzle, enabling us to extrapolate ways in which

physiological and psychological processes interact in the dynamics of health and disease.

Darwin wrote about the **dynamic neural relationship heart/brain** as follows:

> "when the heart is affected it reacts on the brain; and the state of the brain reacts again through the pneumo-gastric* [vagus] nerve on the heart; so that under any **excitement** there will be much mutual action and reaction between these, the two most important organs of the body." (p.69) [16]

"Excitement" includes emotions, thoughts, and stressors. Porges expounded on vagal function. The Vagus (CN X), a sensory-motor cranial nerve, sends impulses from the throat, larynx, and organs in the thoracic and abdominal cavities to the brain, and vice versa. It participates in swallowing, voice production, slowing of the heartbeat, peristalsis acceleration, shoulder movements, and head-turning. **Old and new branches of the vagus nerve** serve different forms of adaptation, and are in turn influenced by emotional reactions. Vagal function is derailed in various mental conditions, among them post traumatic stress disorders (PTSD) [17].

Kandel, on his part, showed **imprints from fear experiences on the nervous system** of a giant California snail (Aplysia) and the common mouse (Mus musculus). He further proposed that psychotherapy produces long-term memory changes in the brain [18].

Lipton noted that a **"quantum universe"** reflects how the physical body can be affected by the immaterial mind.

> "**Thoughts, the mind's energy,** directly **influence how the physical brain controls the body's** physiology. Thought "energy" can activate or inhibit the cell's function-producing proteins via the mechanics of constructive & destructive interference." [p.125] [19]

He illustrated the above with **studies of cloned endothelial cells** that introduced both histamine and adrenaline into tissue cultures. Adrenaline signals released by the central nervous system (CNS), overrode the influence of histamine signals produced locally.

In the present age of neuroscience, it is possible to preempt reductionism by "minding the mind," when presented with the seductive "evidence-base" of science versus the more intricate and fuzzy constructs applicable to psychological processes. Sheldrake, a British biologist, questioned the materialistic notion that subjective experiences emerge from the brain as epiphenomena. He offered evidence of the palpable role of beliefs, intuition, and paranormal phenomena in healing processes [20].

Regarding the scientific validity of psychosomatic practices, Engel wrote,

> …"clinical study amounts to the study of one person by another, and dialogue and relationship are its indispensable tools..." "**Can clinical study be rendered truly scientific?** [Yes]…as extending and organizing knowledge by using evidence that can be consensually validated;" e.g., a patient's facial expression of helplessness, leaning backwards, etc. [10]

A paradigm shift towards function and systems assessment in the evaluation and treatment of health conditions accommodates a psychosomatic outlook, as seen below:

DIAGNOSIS	**FUNCTION**	SYSTEMS ASSESSMENT
(Disease)	Contextual Matrix Interface	Psycho-Neuro-Endocrine-Immune
(Class)	(**Individual**)	**I**nterpersonal, Environment, Epigenetics Genomics

This paradigm recognizes biological and psychological individuality in a matrix of relationships [21]. The writer 's mind-neuroendocrine immune (MNEI) model similarly emphasizes individualized function within a transactional context [11].

To sum up: Dr. Lachkar's sensible medical judgment guided him to an accurate diagnosis of the patient's somatic presentation; e.g. bilateral pulmonary tuberculosis. He prescribed standard antibiotic treatment, which failed to access the sources of that illness. He also pursued an empathic connection to understand the patient as person. Thus, he uncovered profound distress underneath the vulnerable immune system that hosted TB pathogens. This patient's sense of himself and his life purpose were compromised by a half-hearted vocational choice. Once he was set free through the physician's support and a spiritual leader's intervention (the Pope), his depressed mental state lifted and the body opened up to healing. The above case illustrates the need for interdisciplinary collaboration serving whole health. Furthermore, without "minding the mind," there may be a "medical cure," or a "remission" without healing. Considering the patient's subjectivity provides an opportunity to

(1) view health problems from a biopsychosocial perspective;

(2) entertain options and contextual changes, and

(3) find personal healing solutions.

Shifts in one's inner experience (mind) activate neuroplasticity [22], facilitating functional changes in the body systems and moving one towards a dynamically balanced state we call health.

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The Illusion of A Quality Healthcare System

John Caccavale & Jerry Morris

Most people when describing the U.S. healthcare system rarely look at it in terms of a model. When people are ill and need care, thoughts of the macro-structure of healthcare are of little concern. Discussions relating to how we describe its structure are left to others. What can we say about its foundation and the various components to how healthcare is provided is typically left to policy wonks. Yet, whether a patient or provider, the minute someone seeks care, there are blaring inconsistencies and concerns about the care one is receiving. While the discussion of healthcare financing has been the focus of a lot of attention over the past decade or so,[1-4] we now see many more discussions centered around quality of care[5-7] and a new emphasis on the search for a model that is more compatible with our current information about health.[8-12] Moreover, there is a pressing need to define a model that can better finance a quality healthcare system that is affordable for all.[13-16] The motivation for change in the current model is no longer idle talk among academics and policy nerds, but is a necessity related to consumption of almost 18% of the US GDP. The demand for a patient-oriented quality healthcare system has become a national goal.[17-19]

Providing medical care prior to the early 1990s was a relatively personal and decentralized affair. A person seeking care consulted with a local general practitioner, who most probably cared for the patient and family over a long period of time. If more intensive care were needed, that person would be sent to a local hospital where they were treated by their local physician who knew them. If a specialty consult was needed, a referral would be made and the patient would be seen relatively quickly. People residing in rural areas had more difficulty and less options, overall, however, this decentralized and personal model worked and they were treated by personally informed and involved physicians who knew them rather than distant stranger doctors, hospitalists, or institutions with nurses unrelated to and uninformed about their local community and family.

Payment for services typically was employer based health insurance and managed care, as it was called at that time, was in the initial stages of penetrating the healthcare market. In today's jargon, "Third Party Administrator" has generally replaced the term "managed care." I am a believer, however, that managed care better describes these companies and their function since they were charged with providing care only when needed and in a fashion that resulted in executive bonuses and high salaries, fund balances or corporate profits, and contract maintenance. These companies prefer "Third Party Administrator" because "managed care" became too toxic a term. The majority of these managed care companies were not healthcare providers but simply administrative entities that promised employers and consumers that they could organize a system that would provide quality care at a lower cost. Prior to these third-party players there were real healthcare provider systems that promoted these same goals.

One example: Kaiser-Permanente, located in California, started by Henry J. Kaiser of the auto industry, a non-profit partnership of healthcare providers with its own facilities that provided all the care a patient would need in one controllable centralized location. Kaiser provided both physical and mental health services including having their own hospitals. For the most part, Kaiser was physician run, as opposed to the non-medical administrators who were operating the new managed care companies. Kaiser remains a significant player in the healthcare market both inside and outside of California. Other companies such as

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Blue Shield and Blue Cross were all non-profit (though their executive salaries and bonus systems, and perquisites were actually higher than many for-profit-agencies showing a way of distributing profits) healthcare providers. Some operated differently than Kaiser in that they contracted with private healthcare providers for services and attempted control of services by clinical review processes. Providers delivered services and were directly paid by these companies. Patients were treated locally by their physician and hospitalized in a local hospital as before. As a non-profit, these companies were able to keep costs relatively affordable though there were growing complaints from many patients and providers about unrealistic and monetarily driven withholding of services.

As managed care companies started to gain penetration into the healthcare market, and subsequently control over healthcare, the decentralized and personal care model gave way to the industrial model. Some Blue Cross and Blue Shield entities were allowed to re-organize as for-profit entities (really an accounting and legal issue since the difference between for-profit and non-profit corporations, other than tax benefits and legal shields protecting shareholders, had been almost universally blurred in America). Managed care companies morphed into the third-party entities that now control almost every healthcare decision down to the most minute detail. The healthcare system and the stream of resources, thus captive of corporate interests, morphed into “partial and restricted coverage products” under the “code word choice” which really didn’t cover “healthcare”! This allowed the managed care corporations to limit their costs and liability while develop seemingly “cheap” non-health insurance policies which became attractive to the young and healthy who were willing to gamble with their financial exposure. This move expanded markets for the corporations, dumped millions of dollars on Emergency Rooms and Hospitals in terms of uncompensated care, decreased early diagnoses and intervention! Those negative market moves, corporate decisions, and short-term greed began to unravel the economic base (amortization of costs across large numbers of people) in the healthcare system and started the US healthcare system death spiral. Patients became consumers and healthcare services products and profit centers, and a “free market and lust for increased market share” allowed the gradual but growing dynamic eroding scarce healthcare resources to develop.

Today, there are several industrial players in the US market with United Healthcare, CIGNA, Humana, and Aetna Blue Cross as the major players and the Affordable Care Act (ACA) has set up limits on profits, required real health insurance and prohibited restricted coverage packages, and the profits/fund balance of health corporations and requires reinvestment of excessive premiums and savings in additional services or next year reductions in premiums. By definition, the nation’s healthcare became viewed as an essential resource and was taken back from corporations and free market manipulations and forces. Corporations hated this and started to back out of the market when they could no longer carpet bag the industry or profit gains were more attractive in other industries and market sectors. The march toward an efficient, non-greed and market maneuvered, “single payer system” was begun! The goal was to drive profiteers, market manipulators, and carpet baggers out of the healthcare insurance business. Obviously, corporations, and politicians they fund and control hated this re-design and take back of an industry from the corporations.

Again, codes such as “choice,” and “free market efficiency,” and “cheaper insurance (none insurance-restricted coverage contracts) began to be floated by those who want corporations back in control of the stream of resources. Obviously, “dog whistle negative emotional appeals” such as “socialism,” and “insurers are leaving the market” (a planned goal of the ACA) began to be heard throughout the nation! The huge and powerful and talented corporate marketing (and propaganda) machine of corporate America was called into action!

The most significant change to the healthcare system is now these companies are nearly

all for-profit entities or acting as such. As such, they were and presently are no longer beholden to consumers and patients but to their stockholders and the agency principle (think ensconced greed dynamic imagined as an efficiency driving component of capitalism).[20-23] Clearly, by 2005, these companies had achieved almost total penetration/control of the healthcare market. The greater penetration has occurred in government sponsored and funded healthcare.[24-26]

With the passing of the Affordable Care Act (ACA), better known as "Obama Care," the insurance programs being sold almost exclusively rely upon managed care companies to administer these programs. Very early on, managed care companies had penetrated (gained control of the streams of funding and resources) Medicare and Medicaid programs during the early 1990s and both state and the federal governments, bolstered by massive contributions, aided this penetration.[27-28] So, the issue is: What is the Medical-Industrial Complex? And, more specifically, how has this model changed the US healthcare system? Given that any discussion of these issues can be complex, for our purposes we will focus attention on the ways this model has affected and operated in the provision of mental, emotional, and behavioral health. While we are not attempting or indicating that we see mental health as separate from physical health, which is almost impossible due to the medicalization of mental health.

As medical psychologists and psychopharmacologists, our emphasis and expertise is in mental health. As such, we are concerned about the lack of quality of care that patients needing these services have been denied. We contend that the introduction of managed are into the US healthcare system has created a system that is badly in need of reform. We subscribe to the belief that quality healthcare is a right of every person in the every society and culture. Nevertheless, our emphasis is on the US healthcare system.

The Medical-Industrial Complex in The Provision Of Mental Health Services

Nowhere has the failure of managed care had a more negative impact than on the many ways it has denied quality care to patients needing treatment for the myriad of issues comprising patients seeking mental, emotional, and behavioral health.[29-33] The first illusion that managed care quickly dispersed to it's subscribers is that mental health could be more effectively and efficiently provided in a primary care setting. The underlying them being that physicians are the first line providers of healthcare and, as such, were more likely to detect mental health problems in their patients. On the surface this would seem like a plausible scenario. Plausible, however, only to those who knew little about mental health issues and how poorly physicians are in their lack of training with respect to mental health diagnosis and treatment. Moreover, given the number of patients seen in a primary care settings seen daily, the short amount of time given to all patients is hardly suitable to inquire, diagnose, and provide treatment recommendations to patients needing mental healthcare. We have cited the economic erosion of the "expansion of the definition of health insurance to include non-insurance and restricted contract products," and have implied the economic naivety of believing that all aspects of "free market efficiency dynamics" are positive (actually, while there is a positive aspect of greed that can drive efficiency, another aspect that can't be denied is the part in "essential US assets" that drives the development of cheap products that meet immediate Demand, but that in the long-range increase economic and societal costs-this has also occurred in some shinny by low longevity retail products).

Many studies document the lack general medical disciplines training in mental health issues.[34-36] An illustration: When I was in graduate school and doing a research project I needed the permission and authorization of the Chief of Medicine at a local hospital to interview some patients for my study. We met in his hospital office and I described the study and my need to interview some patients on the ward. I recall him looking directly at me stat-

ing in a clearly serious tone, “I’ll let you do the interviews if you can show me where in the brain is the mind located?” I replied that the mind is located in the whole brain and not one region. He took my reply as an attack on his knowledge and literally threw me out of his office. I didn’t get to do the interviews.

The gist of that encounter has been duplicated many times and by many mental health practitioners. Physicians are trained to see, smell, taste, feel and locate problems in a three-dimensional space. For most physicians this translates into a health issue that is being related to a system dysfunction. Symptoms are treated in primary care. When it comes to mental health issues, depression for example, they focus on feelings. Physicians rely upon two or three questions, at most, to diagnose depression. Plenty of research shows, however, that it takes about five years for a patient to be correctly diagnosed with depression by physicians.[37-39] The reasons for this is not only the lack of time to appropriately evaluate mental health issues and the lack of training physicians have in mental health but the pressure by managed care companies to substitute cheaper medical care, often “name a feeling” and “provide a medication only” for poorly defined quality mental healthcare. So, the system “redefined health insurance as something else,” and “redefined mental disorders as feelings needing a pep pill, tranquilizer, or an attention problem needing speed”! No wonder the nation gets sicker and sicker and consumes more and more healthcare resources each year.

Publicly owned managed care companies need to provide the least expensive services possible because they must report quarterly earnings to avoid a decline in the value of their stock. By treating a mental health issue as a medical problem, they allow physicians to prescribe medications as the treatment of choice. Medications, in the short run (but not in the long-run), typically are less expensive than psychotherapy or behavioral interventions. Over the longer term, however, psychotherapy is more effective,[40-45] and more efficient.[46-50] More importantly, psychotherapy presents little risk to patients as opposed to medications,[51-55] and psychotherapy is the more appropriate treatment for patients who present with issues relating to behavioral problems. But, while psychotherapy may be more appropriate, more efficient, and more effective than medications, the short term costs do not look good on the quarterly balance sheet for these companies.

There are many factors that explains why healthcare services fare so poorly under the present system. All beg the question: Why continue with a system that contributes to illness and, for the most part, violates its most basic manifest function? A short review of these factors can provide some insight into a system designed and supported to cost more, provide less, but reward highly paid CEOs and investors. These same factors can also provide insight into reforms that refocus healthcare into a more effective and efficient system.

Healthcare Inflation

Healthcare inflation derives from several major drivers: Hospital Costs; insurance and managed care overhead and profit related costs; pharmaceutical company profits and related drug costs; and a traditional focus on unproven biomedical theories[56-60] leading to largely palliative or maintenance care approaches. Healthcare inflation cannot be brought under control unless these inflation drivers are managed, curtailed, limited, and refocused. Remedies must include establishing reasonable limitation on profits taken out of a national resource such as healthcare and monitoring of healthcare company operations to ensure that they are in the public interest. This would include such things as holding non-profit corporations accountable for their “excess fund balances.”

Excess fund balances are profits that should be diverted into reduced cost and expanded services rather than excessive executive salaries, non-core business investments, and un-

realistic and non-functional perquisites for executives and board members. Limitations on administrative costs should be held to no more than twice that of Medicare. At today's rate that would be no more than six percent. Some may argue that it is unfair to rely upon Medicare as the baseline. We argue that using Medicare as the standard is consistent and in keeping with industry standards that use Medicare reimbursement rates as the standard for provider payments and patient cost schedules.

This refocus of funds would require that hospital management companies, which are largely for-profit entities that manage public hospital and primary care assets, prove that they are not creating phantom costs inappropriately designated as "healthcare" costs. It would include such things as repeal of the Dole Act allowing University Research Scientists to patent publicly funded research derivative products, such as medicines jointly with Pharmaceutical Companies and thus create highly costly, thus inefficient drugs using public tax and publicly funded grants. Reform would include such things as establishing a public option healthcare product to provide market competition and efficiency to put downward pressure on salary and profit related to insurance and managed care company operations. It would include funding early intervention and low cost annual check-ups, prevention and behavioral interventions for diseases of end stage organ damage resulting from negative attitudes, decisions, and habits, such as obesity and behaviors related to Type II Diabetes, substance abuse, stress management, reckless lifestyles, domestic violence, and child abuse, as examples.

Policy on Integrated Care

Congress passed comprehensive health care reform legislation through the Affordable Care Act ensuring that mental health and psychological services would be available as a mandated service throughout healthcare. This made early intervention, comprehensive (not medication only) treatment, and more accessible outpatient services available. The era of intervening with a several thousand dollar shot in the Emergency Room of a hospital, or an expensive Psychiatric Hospitalization as first order treatments obsolete and started to change the economic growth curve of healthcare.

The ACA incorporated mental health parity into the law, however, there is no requirement that psychological services be provided in medical surgical hospitals, emergency rooms, or in psychological and geriatric residential and skilled care centers that receive licensure and certification and reimbursement through federal programs. It is important that these services be included in any fix in the ACA. These psychological services should include, in addition to mental health and psychological aspects of physical disease, prevention initiatives and interventions since these interventions have the greatest opportunity to curtail long-term human and economic healthcare costs. Any fix should ensure that mental health benefits, although legally required in all plans offered by insurers, be closely monitored to guarantee these services are on par with medically related conditions. Incentives, by way of penalties, should also be part of the fix so that mental and behavioral health services receive their legally guaranteed protection.

Primary Care Facilities and Program

Psychologists and their services should be required for certification, licensure, and federal reimbursement and fully integrated in primary care facilities. Psychologists should be allowed to admit and discharge patients, independently diagnose and treat, order appropriate laboratory tests and screening pertinent to their training and education, prescribe or recommend medications when appropriately trained and their state licensure permits, refer for medical evaluation and specialty medical treatment when their screening indicates it is needed, to write treatment orders within the purvey of their licensure, training, and scope of practice, and to participate in integral components of the continuous quality improvement (CQI) and program management activities.

Presently, there are great discrepancies between the states with respect to psychologists' scope of practice despite the fact that education, testing, supervision, licensing and post doctoral training essentially are the same throughout the USA. A small but significant requirement where any healthcare entity that receives federal funds adhere to the same practice standards would eliminate these discrepancies while promoting a higher level of care and greater access to quality care for patients. Other recommendations in this area that will promote better quality mental healthcare are:

- Multidisciplinary team treatment should be emphasized among physician and psychologist providers should be required and fostered in rule and regulation, reimbursement and incentive programs, and in program monitoring and evaluation. In these systems providers should be allowed to autonomously deliver services within the full scope of their licensure when established by law and rule as independent diagnosticians and providers. Monitoring and program evaluation should guard against costly, restrictive, and unnecessary physician supervision or exclusion of psychologists from Medical Staff Membership, policy and procedure development and monitoring, and peer supervision by a senior and board certified psychologist who sits on the Medical Staff Executive Committee of the Medical Staff. The psychologist member of the Medical Staff Executive Committee and the psychologists in the psychology department or service will assist the facility with the development of appropriate policies and procedures for the monitoring, supervision, and development of the psychology department/service.

- If a case management, medical home, or diagnostic related group or capitated allocation model of patient monitoring and leadership is utilized, a psychologist must be involved in the design, development of policies and procedures, monitoring and program evaluation, and supervision of the program.

- Primary care centers hospitalizing their patients during periods of clinical need must ensure that their doctors of psychology have hospital privileges and are allowed to follow the mental and behavioral healthcare aspects of the case during hospitalization to provide both quality and continuity of care and to facilitate the conservation of resources and rapid medical and psychological stabilization and return to outpatient care.

- Payment and other incentives to promote provider primary care collaboration and accountability should be available to psychologists as well as physicians, and psychologists should be allowed to be joint owners (in Medical Corporations) with physicians to bring their expertise on Behavioral and Systemic and Lifestyle components of healthcare in primary care centers.

Hospitals

All of the components and principles noted under Primary Care above should be applied to hospital settings. Fully one in four admissions to emergency rooms and hospital wards are mentally ill, and over half have diseases directly or indirectly caused, or severely exacerbated by lifestyle, attitudes, habits, and chronic negative choices. This is a structural flaw of the system and herds mental patients like chattel into the least appropriately staffed and equipped and most expensive settings for assessment and treatment. The research has consistently indicated the physicians are not equipped to diagnose, treat, or link these patients with appropriate and effective treatment. Hospitals should be required to have a chief psychologist who sets on the executive committee of the Medical Staff, doctors who are psychologists on the medical staff in sufficient numbers to service the psychological needs of the expected volume of patients and programs offered by the facility, and they should be integrated into the CQI and program management systems of the hospital.

Nursing Homes

The nation's nursing homes are in a mess! Physician and psychologist reimbursement systems prohibit meaningful involvement, timely assessments and assessment updates, doctor (of medicine and psychology) involvement in active daily decision making and treatment planning, and make a mockery of the concept of quality of care. Nursing homes will dramatically expand their beds and stabilization units will take over many of the acute care functions of the hospital by 2025. We are not ready! Barriers to reimbursement must be removed so that nursing homes with more than 100 beds have physicians and psychologists available on a daily basis, they are active on the wards and in updating assessments and directing evolving treatment plans and they are active on a weekly basis in the facility CQI and clinical management programs. The PASSR system has been relegated to a paper compliance program. Mental health screenings, treatment planning using MDSs, PASSRs, and consultation must be revamped and states and facilities held accountable for the quality of mental health care. A psychiatrist dropping in at a 120-bed facility for an hour a month and dropping off 15 scripts for antidepressants and minor tranquilizers is not adequate geriatric intervention for depression and an anxiety disorders, much less the psychological aspects of physical disease. We are perpetuating a myth and are disingenuous in our plan for nursing homes and any healthcare reform should include major reform in this component of the healthcare system.

Psychological Residential Care Centers

Many of the nation's most severely and persistently mentally ill children and adolescents that ultimately consume high quantities of mental health and corrections resources in their life-time start in the nations psychological long-term residential care centers. They are there because they are repeatedly dangerous to self or others, have massive distortions of reality and inability to think rationally on a consistent basis, have such poor self-regulatory abilities that they require twenty-four hour and highly structured and secure supervision and settings, and they learn very slowly and with thousands of interventions and training episodes required to get concepts that are easily mastered by others. They have been abused, damaged, and neglected by adults whom they now distrust, resent, and avoid.

Yet in these centers we require the lowest levels of staffing and resources, the lowest credentials of professionals, very little in the way of qualified psychotherapists and family therapists (often exempting them from licensure laws for professional qualifications), and have such loose standards that the psychiatrist can breeze through several hours a month in more than 100 bed facilities and the psychologist can be there for less than a day a month (rendering them both signers and blessers of treatment plans rather than active in the treatment of these children and in the supervision of their staff). We can do better and no healthcare reform is real reform without increased enforcement of enhanced standards that require psychologist time in ratio to beds (like we do for nurses in Medical/Surgical Hospitals), high quality programs for growth and change rather than intensive medication and strong arm guards, and intensive family, placement, and occupational and educational programs. Many states (Louisiana and Hawaii, to name just a couple) have been so poor configured and performing in these programs that the federal government has had to step in and run their facilities for years and require dramatic improvement.

Healthcare Funding

The uninsured should be provided with a low cost and affordable public option with comprehensive mental health and substance use services and treatment for the psychological aspects of physical illness at parity with physical health services. Cherry picking, impedance of portability, herding of patients into sublicensed and unqualified programs and providers, and unnecessary application of gatekeepers and case management for perma-

nently disabled and chronically ill patients who by definition require life-long and extensive services and interventions must be prohibited. The practices in these regards must be closely monitored with severe penalties. Unless improved monitoring and regulation of payers occurs healthcare reform will not work.

Healthcare Documentation and Goal Monitoring

Healthcare has the most obsessional and unrealistic documentation requirements that exist. The costs related to non-essential documentation monitoring and regulation cripples and eviscerates the resources of the industry. Because programs are not regularly monitored by actual field officials who are trained healthcare professionals, monitoring of facilities is by an analog or solely from paperwork. Layers of unnecessary management, costs and regulatory resource waste is built into the system. Paperwork could be substantially reduced using electronic records, checklists, canned scientifically validated protocols, and monitoring for goal markers. Quality control should be done by regional monitoring teams and by electronic data mining and trend analysis rather than by paper and management hierarchies at the facility and Government level. Psychologists are well equipped to help design, monitor, and supervise field surveys in such systems. Their skill set and training comprise research, statistical, management information, healthcare assessment and treatment planning, intervention evaluation, teamwork evaluation, and management skills. Historically, psychologists routinely use these skills to mange research grants, facilities, and performing program evaluations.

Moving Mental Healthcare Forward: The Past and the Future

Like so many things in life, the need to go forward sometimes requires looking backwards. We must look at the ideas that moved mental health in one or the other direction. Our goal is to look at our past and see what worked and what has hurt. The look backwards is not motivated by a desire to “go back to the good old days.” Make no mistake, it is not a statement of conservative value or a rejection of change. Our arguments represent a rejection of a status quo that has resulted in real damage to the provision and practice of mental health.

We have data indicating that most chronic disease have significant behavioral, psychological and life-style components.[60] We have presented evidence and literature that general physicians and nurses are not trained, qualified, or adequately and accurately diagnosing the mentally ill and addicted individuals that present in large prevalence in Primary Care Centers and Community Hospitals! We have lamented that a system controlled by corporate interests and the Medical Industrial Complex has no rational legal and accreditation requirement that healthcare facilities have adequate staffing of doctors of psychology.

There was a time when psychologists were the premier providers of mental health. We did not lose that privilege to others who are superior in their practice or theories. We lost the privilege of that designation out of sheer laziness in not challenging the medicalization of mental health and the expropriation of mental health by bureaucrats, whether well meaning or out of self interest. So, when we look to the past, just what are we looking for?

We seek a return to a time when mental health was focused on people’s psychological needs and problems. A time when being a psychologist and mental health provider signified a “professional who cared and helped.” Self-criticism should be a virtue in a society that is so rife with the cloak of opaqueness that most of our institutions now favor. Hopefully, lifting the veil from a dysfunctional healthcare system will provide the light for a better future.

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