

Brain-based therapy and the 'Pax Medica'

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LINFORD and ARDEN argue that the medical model in mental health is being replaced by a lively new understanding of how psychotherapy works. The '*pax medica*' model, founded on theories of 'chemical imbalances in the brain' with an emphasis on diagnosis, and specialized treatments and techniques, was propelled by the advent of Prozac, the *DSM-III* and 'evidence-based therapies'. Recent research presents major challenges to this institutionalised medicalisation of psychotherapy. The mnemonic 'BASE'—brain, attunement, systems of care and evidence-based treatment—is a useful framework to assist practitioners in the transition from the old world of the '*pax medica*' to a new model that incorporates current neuroscience, developmental psychology, psychodynamic theory, cognitive psychology and psychotherapy research.

'Only blessings can arise from seeking the company of wise and discerning persons, who skillfully offer both admonition and advice as if guiding one to hidden treasure.' Dhammapada, verse 76.

A seminal era is ending in psychotherapy and psychiatry, and a new one is beginning. In the 1970s, Prozac, the *DSM III* and 'evidenced-based' therapies all came into being within a few years of each other. These innovations provided a stable way to think about, classify and treat mental conditions, and became institutionalized in a model we refer to as the *pax medica*. The *pax medica* medicalized psychology and psychiatry in a way that has become so pervasive it's almost invisible, like the air we breathe.

In this paper we argue that the medical model in mental health is being replaced by a lively new understanding of how psychotherapy works (Arden & Linford, 2009). Based on contemporary neuroscience and psychotherapy research, the brain-based model sheds new light on a question that has beguiled psychotherapy from its beginning:

How can a simple conversation—or as Freud called it '*the talking cure*'—change the brain?

One eminent psychologist writing in the 1950s answered the question about how psychotherapy changes us quite simply: '*it doesn't*'. In an important review of the existing outcome literature, the formidable Hans Eysenck (1952) stated that psychotherapy was no more beneficial for patients '*than the mere passage of time*.' Timothy Leary (before his psychedelic period), compared therapy patients to those on waiting lists, and found that the 'waiters' did just as well as the patients. At about the same time Eysenck's critique was published, the first tricyclic antidepressant appeared, thereby putting into the hands of psychiatrists a powerful alternative to the talking cure. Isolated from the biological sciences and averse to empirical inquiry, psychotherapy seemed about to be relegated to the

niche of second-rate 'alternative' treatments for psychological disorders.

The Pax Medica

While the first tricyclics were a moderate success, it was the advent of Prozac in 1974 (Wong, Horng, Bymaster, Hauser & Molloy, 1974) that changed everything. Prozac created a profound shift in psychiatry away from interests in meaning and toward a fascination with medications. Part of the success of Prozac was based on the appealing notion that it corrected 'chemical imbalances' in the brain, and well-controlled drug trials seemed to prove the theory behind the product. Even today, more than thirty years after its advent, Prozac remains hugely popular around the world. In the U.S. alone, more than 20 million prescriptions are written annually for the drug's generic version—and two newer antidepressants are even more widely prescribed. In the U.S.,

one in 20 men, and almost one woman in 10, uses an antidepressant (Barber, 2008). By contrast, about one in 20 adult Americans sees a psychiatrist, psychologist or social worker for psychotherapy. The number of patients treated for depression with psychotherapy actually *declined* between 1987 and 1997, a decade during which prescriptions for antidepressants doubled (Barber, 2008).

CBT and the DSM

Psychotherapy had to change in order to survive. The psychiatrist Aaron Beck was a leader in the effort to establish 'indisputable evidence' of the effectiveness of psychotherapy (1972; Beck, Rush, Shaw & Emery, 1979). Whereas many therapists were disdainful of the social-science research paradigm underlying psychotherapy outcome research, Beck saw these methods as an opportunity to build credibility for his own approach, cognitive behavioural therapy (CBT).

Beck ignored the brain altogether and made only parsimonious assumptions about how the mind worked; but even more than Freud, Beck championed the view that *technique* is what matters. Like Freud, Beck was a physician who viewed

psychotherapy as a mental health *treatment*. John Norcross (2002) summarizes some of the elements of this medical model: '*This [model] inclines people to define process in terms of technique, therapists as providers trained in the application of techniques, treatment in terms of the number of contact hours, patients as embodiments of psychiatric disorders, and outcome as the end result of a treatment episode*' (p.12).

with complexity and ambiguity—and a world where enormous amounts of money were at stake—Spitzer offered mental health professionals some peace, simplicity and the comfort of a renewed faith in authority. His tome rapidly became the 'Bible of Psychiatry' for insurance companies, the disability and criminal justice systems, and researchers seeking government approval for new drugs.

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Beck's work dovetailed seamlessly with a new version of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1980). Its chief editor, the psychiatrist Robert Spitzer, identified what were to become some of psychiatry's 'greatest hits': panic disorder, attention deficit hyperactivity disorder (ADHD) and major depression. In a field fraught

Spitzer, Beck and the makers of Prozac forged a compromise in the mental health field that has worked reasonably well since the late 1970s. This *pax medica* stipulates that in psychotherapy, as in dermatology, *diagnosis* is vital to planning and evaluating treatment. Treatment should be targeted at *symptoms*. The demand for Beck's 'indisputable evidence' of efficacy (whether of

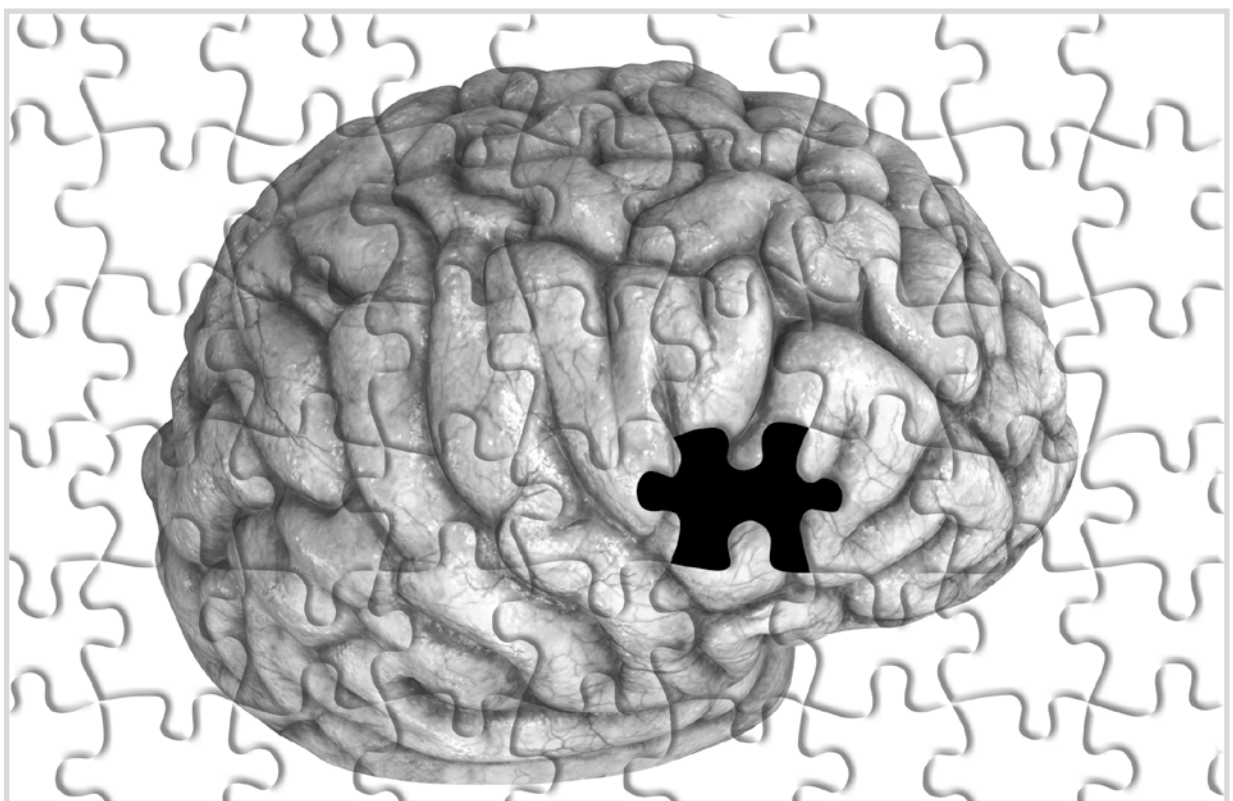


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drugs or psychotherapeutic methods) required the conduct of randomized controlled trials.

As an indication of how thoroughly these correlates of the *pax medica* had penetrated mainstream psychology, in the mid-1990s the *Society of Clinical Psychology* of the *American Psychological Association* (APA) established a task force on ‘empirically validated

of Smith and others has come to be taken more seriously. The apparently unassailable superiority of CBT has attracted the scrutiny of dissidents within the APA and elsewhere. Critics have argued that the core processes of psychotherapy differ only slightly across methods. For example, gestalt therapy was using the term ‘*safe emergency*’ for the type of intervention

based’ research had all but ignored anything *but* diagnosis and methods—leaving out factors such as the patient’s functional impairment, strength of resistance, treatment expectations, or stage of change. Lambert had conducted a series of studies that undermined the application of the medical model to psychotherapy. He demonstrated that *diagnosis* is not a significant factor in outcome and that the contributions of specific *methods* are relatively minor. According to Lambert, *who the patient is* and what he or she brings to the treatment is far more predictive of success (Lambert & Ogles, 2004). So-called *common factors*—the warmth, confidentiality and support found in virtually all psychotherapeutic approaches—are the next most powerful element in the outcome of treatment. Elements contributing to outcome are shown in Figure 3.1. below.

Recently, Lambert (2006) launched a second fusillade at the *pax medica* by demonstrating that *patients* rather than professionals are the best evaluators of how the treatment is progressing. Based on decades of psychotherapy research, Lambert offered the following conclusions:

- Psychotherapy is as effective as many common medical treatments.
- It works well due to the common factors that underlie different schools.
- The ‘best practice’ in individual

The brain changes itself through experience, especially experiences of interpersonal connection that rewire the brain from birth on.

treatments’ (Norcross, 2002). To earn the designation ‘empirically validated’, a treatment had to be shown superior to placebo or comparable treatment in two separate randomized clinical trials. Moreover, the intervention had to be reducible to a clear and teachable manual. Eighteen *DSM-III* disorders were seen as candidates for this process; almost all the treatments that qualified initially as ‘evidence based’ were CBT. It seemed that Beck’s coronation as the king of evidence-based treatments was about to occur.

Cracks in the fortress

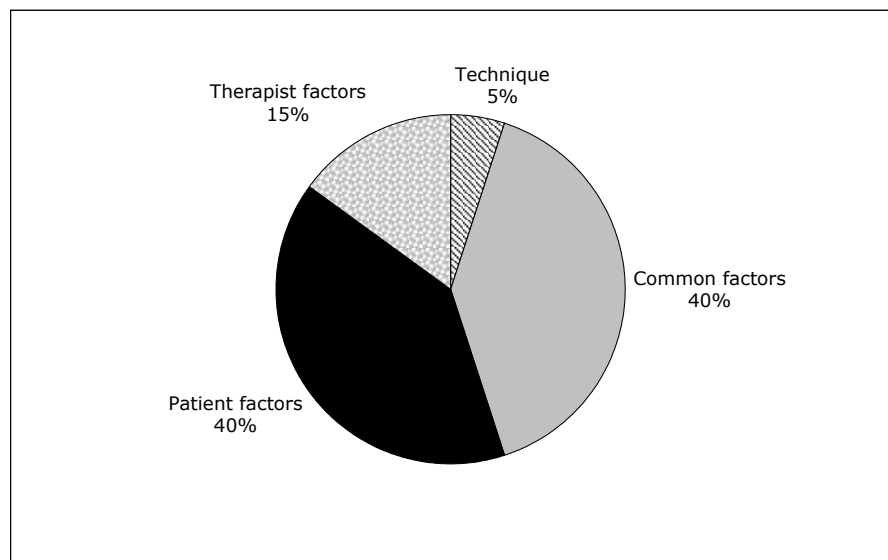
Some outcome researchers and neuroscientists remained skeptical, however. Just four years after the publication of the *DSM-III*, three little-known academics turned the spotlight of social science research methodology on the question of psychotherapeutic benefit. Smith, Glass and Miller (1980), in *The Benefits of Psychotherapy*, by aggregating many smaller well-designed studies, reached two important conclusions: that psychotherapy was robustly effective; and (against the spirit of the times), *the methods employed by therapists seemed to have no significant effect on outcome*. Despite this conclusion, 80 to 90 percent of research in psychotherapy since Smith and his colleagues published their meta-analysis has been aimed at establishing the efficacy of specific methods for specific disorders (Bohart, 2000).

Gradually, however, the skepticism

CBT therapists call ‘*exposure*’ (Perls, Hefferline & Goodman, 1951). Psychoanalysts also believe that gradual exposure to repressed troubling thoughts and feelings is an important ingredient in recovery. In fact, ‘*all forms of successful therapy*’, according to Cozolino (2002), ‘*strive to create these safe emergencies in one form or another*’ (p.32).

The organized psychotherapy professions were suddenly alive with controversy. Opponents of the specific methods school of thought were championed by two estimable psychotherapy researchers, John Norcross and Michael Lambert (Lambert & Ogles, 2004). Norcross (2002) wondered why the ‘evidence-

Figure 3.1. Factors accounting for variance in psychotherapy outcomes (after Lambert, 2006.)



psychotherapy is to ask the patient how things are going in the treatment on a regular basis (preferably during each visit).

- Giving patient feedback to therapists minimizes treatment failures and enhances overall effectiveness (Lambert, 2006).

SSRIs Redux

If psychotherapy research has eroded the conviction that there is only 'one method' for conducting successful psychotherapy, the social science research paradigm has, like a river overflowing its banks, engulfed the 'one factor' theory of antidepressant action (Arden & Linford, 2008). Pharmaceutical companies have promoted the idea that 'chemical imbalance' is the cause of depression, and massive marketing has convinced millions of patients that by manipulating their neurotransmitters they can cure their depression. This 'one-factor' model underlies the dramatic success of serotonin reuptake inhibitors (SSRIs). What it leaves out is that the brain is different than the liver or other organs in the body. *The brain changes itself through experience*, especially experiences of interpersonal connection that rewire the brain from birth on.

Two recent events bolster our impression that the *pax medica* and with it the one factor theory of antidepressant action are in their waning years. The first event took place in Portland, Oregon, at the Oregon Health and Science University (Turner, Matthews, Linardatos, Tell & Rosenthal, 2008). Researchers there subpoenaed the U.S. government to release all the studies on antidepressant effectiveness in its archives. Because science journals prefer positive findings over negative ones, Turner and his colleagues were unsurprised to find unpublished studies that disputed the hypothesis that SSRIs are more powerful than placebos. What was a surprise was how many of these studies there were. Research reporting positive effects for antidepressants was twelve times more likely to be published than studies reporting negative results. Turner et al. (2008) concluded that publication bias had inflated the common impression of the effectiveness

of serotonin reuptake inhibitors by about a third overall; and for some medications, the figure was twice as high (Turner et al., 2008). Post-Turner estimates of the effectiveness of antidepressants have dropped to a level close to that of placebos.

The second event that signals the end of the *pax medica* has so far attracted relatively little attention. Three enterprising American psychologists obtained and reanalyzed data from the largest study on treatments for depression ever conducted. The 'take two' study conducted by McKay, Zac and Wampold (2006) focused on outcomes in the medication segment of the *Treatment of Depression Collaborative Research Program* of the National Institute of Mental Health (NIMH) (Elkin et al., 1989). The results bear

eloquent testimony to the power of the prescribing relationship. The original NIMH study did not include the relationship as a study variable, but focused instead on comparing the effects of the antidepressant Imipramine with a placebo. Published results heralded the power of the pill. In the study reanalysis, however, it became apparent that *the most effective psychiatrist actually achieved better results with placebos than the worst-performing psychiatrist achieved with antidepressants* (McKay, Zac & Wampold, 2006).

Brain-based therapy

Over many years of developing evidenced-based approaches and teaching and supervising psychotherapists we have created a model we refer to as the 'BASE'. We have found the BASE a useful mnemonic in helping other psychotherapists make a transition from the old world of the *pax medica* to a new model that incorporates current neuroscience, developmental

psychology, psychodynamic theory, cognitive psychology, and psychotherapy research. BASE stands for *brain, attunement, systems of care, and evidence-based treatment*.

Experienced therapists who incorporate the brain-based model into their practices learn to think about *case formulation* in a different way, but typically do not have to master new *techniques*. As noted, traditional psychotherapy is effective most of the time for many different kinds of conditions, and experienced therapists can typically utilize interventions from more than one psychotherapeutic system. What the brain-based perspective adds is a cross-disciplinary, biopsychosocial perspective that opens a new way of understanding the psychotherapeutic relationship. In our experience in training over 100 post-

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doctoral residents and interns each year, this new understanding results in a subtle shift in our *attitude* toward patients and enhances our empathy and respect for their experience.

Brain-based therapy is *patient centered*. It requires that therapists attend carefully to the patient's goals in therapy, to the patient's view of the tasks we require of them, and to their feelings about the therapeutic alliance. It requires a special kind of listening for what isn't in the *verbal dialogue* and an opening up to the parts of the brain that don't speak, but nevertheless do communicate. Psychoanalysts and object relations therapists are often especially attuned to these subtle, nonverbal, reactions and 'resistances' in patients (Safran & Muran, 2003). Elsewhere we consider how to integrate more structured evidenced-based approaches to specific disorders with current neuroscientific models to get the most out of psychological methods (Arden & Linford, 2009).

One final quality we look for in our work is a lack of perfection. Like Winnicott's 'good enough mother', being a 'good enough' therapist is better than being a perfect one. Imperfection gives patients plenty of room to express the negative emotions that are often a key to improvement, and is more respectful of the patient's need to grow and eventually separate from the therapist (Wallin, 2007). We are increasingly impressed with Lambert's methods of getting patients to tell us how they feel about the progress of therapy to enhance the success of our interventions (Lambert, 2006).

B is for Brain

The brain is an organ that lives or dies by virtue of its relationships with the brains around it. Almost no part of the brain escapes the stamp of interpersonal experience. Our genetic endowment for connecting with others is prerequisite to all the brain's other capacities and features. The brain's neuroplasticity is at the heart of brain-based therapy. This capacity arises from the structure of individual cells and is synergistically multiplied by the interaction of neural modules related to social appraisal and emotion regulation. Recent discovery of *mirror neurons* is an example of how empathy is built in at the cellular level. Researchers found these cells by tracking neural activity in the brains of rhesus monkeys as the monkeys *watched their peers*. Neurons firing in specific areas of the brain of an animal completing an intentional motor action (such as searching for food) also fired in the same area of animals simply *observing* this action. These cells turn out to be specialized in structure as well as in location.

Italian neuroscientist Giacomo Rizzolatti (2008) has said that mirror neurons *allow us to grasp the minds of others* not through conceptual reasoning but through direct simulation; by *feeling*, not by *thinking*. Watching two twelve-year-old girls talking outside the school cafeteria, we notice one making a face, shrugging, laughing over her shoulder and walking away toward another group. We sense that the girl left behind feels rejected. Our mirror neurons, spindle cells, and the neural networks specialized

for social appraisal transform such perceptions into empathy (Miller, 2005). Subjectively, as Rizzolatti said, we *feel* it. If the feeling is accurate, colleagues of the specialized cells firing in our brain will also be firing in the brain of the rejected girl. We use the passive version of this experience—being understood and empathized with

while engaged in meditations thought to promote positive states of mind (Davidson & Slagter, 2000). As the meditation progressed, marked shifts occurred in hemispheric activation, with the monk's left hemisphere (LH) becoming more active as the meditation progressed. Activation of the LH had been shown previously to

In therapy, simply tapping into the LH's story-telling is ineffective in changing early RH-based emotional expectancies.

by another person—to change and build our own mental capacities.

Psychology has been slower to absorb these findings than some other disciplines, such as primatology. Robert Sapolsky (1996) showed some years ago that under prolonged stress the levels of the stress hormone cortisol stay high and paradoxically effect two important brain modules. The *hippocampus*, which encodes new memories and normally helps turn off the production of stress hormones, shrinks; while the *amygdala*, a part of the brain that stimulates the production of these agents, grows in volume. Chronic stress creates a biological feedback loop, making it harder to remember things, harder to think clearly, and intensifying anxiety. Recent neuroimaging studies of anxious patients have pinpointed amygdalar hyperactivity as a common mechanism underlying social anxiety disorder and common phobias (Etkin & Wager, 2007). The brain-based model incorporates these facts about stress architecture as well as other research that demonstrates the role of stress in anxiety and depressive disorders. A goal of brain-based therapy is helping clients learn to manage stress and minimize their allostatic load.

Side-to-side, right-to-left differences in cortical processing are of particular interest to psychotherapists. Many studies support the idea that *shifts in the balance of activity* between the two cerebral hemispheres is associated with positive or negative affect. In one study, a senior Tibetan monk underwent an electrophysiological assessment

be associated with emotions such as contentment and happiness (Davidson, 1992; Hugdahl & Davidson, 2003). Greater activation of the right hemisphere (RH), by contrast, has been associated with negative emotions such as sadness, anxiety and anger. Shifts to the RH are also associated with lower self-esteem in adults (Persinger & Makarec, 1991) as well as with depression (Nikolaenko, Egorov & Frieman, 1997)). The left-sided tendency to initiate approach behaviours complements the tendency of the right to initiate withdrawal.

Given these findings, when working with anxious clients, we suggest that therapists encourage the client to detach from the paradox of 'trying not to feel anxious'. The capacity to stop or shut down anxious thoughts lies in the client's right pre-frontal cortex, and overactivating this module ironically is likely to result in an increase in the anxious feeling the clients wants to suppress. On the other hand, accepting and riding out anxious feelings and thoughts mindfully requires a shift from RH to LH functioning and usually results in these feelings subsiding more quickly. Labeling these affective experiences in therapy also helps the client shift from right to left pre-frontal activation and clients are likely to experience the positive affects and approach behaviours associated with this move. Improving integration of side-to-side processing in the context of a supportive relationship is a second major goal of brain-based psychotherapy.

A is for Attunement

Neuroscience, developmental psychology and psychotherapy research mutually re-enforce and enrich one another, on no point more strongly than the power of relationships to change the brain. For the first year of life or so, a baby's fitness (in a Darwinian sense) is defined by her ability to stay attached to her mother. Conversely, the mother's capacity to stay *attuned* to her baby has durable effects on the baby's psychological functioning (Main, 1995).

Developmental psychology helps us understand why the attachment experience is so enduringly powerful. Kaminer (1999) studied interactions between mothers and babies by videotaping the face of each partner and then analyzing their interplay on a frame-by-frame basis. His sample consisted of mothers susceptible to depression, and a matched non-depressed group. The videos show non-depressed mothers locking gazes with their babies, mimicking their facial expressions, and conducting an on-going play-by-play commentary on their babies' reactions. The mother's expression and words stimulate reciprocal facial expressions in the baby accompanied by excited waving of arms and leg kicks. "*What are you looking at?*" these mothers ask as the babies study their fists, or "You're *smiling* now!" Depressed mothers, by contrast, more often make such 'action/agency' comments when their babies look away from them.

Beebe and Lachmann (2005) note: "*These more vulnerable mothers tended to frame their action/agency comments in terms of 'Where are you looking?' and 'You are not looking at me.' These babies may learn that their agency occurs only when they are more separate, or somehow 'against' the mother*" (p.31).

Early expectancies such as these arise out of 'co-constructed interactions' between mothers and babies and later become the defenses, or emotional rules, studied by psychoanalysts and object-relations therapists (Beebe & Lachmann, 2005) and attachment researchers (Ainsworth, Blehar, Waters & Wall, 1978; Main, 1995). Typically, implicit encoding of a client's particular style of resisting painful content takes place

early on (Safran & Muran, 2003). The ability of therapists and patients, working together, to stay attuned to these phenomena and help move the brain's processing of these experiences from subcortical to cortical and from the right to the left hemisphere is a part of what makes psychotherapy so powerful.

The psychotherapy research tells us that, more often than not, therapists

problems to be down-stream effects of impairments in the brain's capacity to regulate the neurodynamics of stress. If therapists ask, it almost inevitably turns out that suffering clients have adopted behaviours and lifestyles that unwittingly support this biological dysregulation. Expanding the scope of psychotherapy to include the behavioural determinants of brain health requires us to consider how the sleep,

PET imaging studies of the brains of depressed patients, for example, show significant post-psychotherapy changes in regions ranging from the prefrontal cortex to the hippocampus, anterior cingulate and amygdala.

and patients find the right road to change; but from a brain-based perspective every psychotherapy risks remaining 'all talk' and no action. In therapy, simply tapping into the LH's story-telling is ineffective in changing early RH-based emotional expectancies (Cozolino, 2002; Arden & Linford, 2009). In successful psychotherapy, the clues to these patterns are inferred from the client's subtle enactments and nonverbal communications (Beebe & Lachmann, 2005; Wallin, 2007). A new narrative is co-constructed by the therapist and patient. At the heart of the process is the deep need of the human brain for relatedness and reflection in the glances, facial expressions and words of another person. Lambert (Lambert & Ogles, 2004; Lambert, 2006) underscores the finding from the research that just getting clients to verbalize their feelings about the therapist's attunement to their experience produces significantly better outcomes.

S is for Systems

Bringing the brain back into psychotherapy suggests the use of interventions that traditionally are not considered to be within the therapist's purview. These interventions have little to do with *meaning* but powerfully affect the *brain*. As noted above, we find many psychological

eating and exercise habits of clients are affecting their embodied minds.

Research illustrates the role that sleep, for example, plays in the brain's self-regulatory processes. Huber, Tononi and Cirelli (2007) found a direct relationship between the levels of an important neurochemical—*brain-derived neurotrophic factor* (BDNF)—and slow-wave sleep (the most relaxing kind). The more slow-wave sleep, the more BDNF in the brain. BDNF is a naturally occurring fertility drug for neurons. It promotes enriched synapses and facilitates the creation of new neurons (*neurogenesis*) in key areas of the brain. During daytime activity—and especially as a *by-product of aerobic exercise*—BDNF levels normally increase, and new synapses and neurons sprout in areas such as the hippocampus, facilitating the production of new memories and down-regulating the brain's stress centers. Slow-wave sleep appears to counterbalance this expansionist daytime growth and may play a role in conserving new memories encoded during the day. In a brain-based context, it makes good sense to ask about sleep and exercise habits, and discuss their likely relationship to the client's presenting problems.

A systems issue of a different kind has to do with the role of psychotropic medication in many therapies. Patients

have a right to expect their therapists to have expertise about the side effects, limitations, and dosages of commonly prescribed medications. A good working relationship with the prescribing provider and asking the client about the experience of taking the medication are also important. It is also usually helpful for clients to understand how medications affect their brain functions, beyond the 'one factor' neurotransmitter hypothesis of the *pax medica*. Recent research, for example, suggests that increased BDNF and a resulting boost in hippocampal neurogenesis may underlie effective antidepressant treatment (Chen, Dowlatshahi, MacQueen, Wang & Young, 2001; Karege et al., 2002).

E is for Evidence

If neuroscience is enriching our understanding of the workings of antidepressants, it is changing our model of psychotherapeutic action just as dramatically. The brain-based model vastly expands the evidence-basis for psychotherapy. PET imaging studies of the brains of depressed patients, for example, show significant post-psychotherapy changes in regions ranging from the prefrontal cortex to the hippocampus, anterior cingulate and amygdala. These changes can be summarized as a *down regulation of areas relating to overthinking and an improved capacity for capturing and encoding new experience* (Mayberg, 2006). Neurologist and neurosurgeon, Helen Mayberg, has concluded that depression is not a disorder of a single gene, brain region, or neurotransmitter system. *Rather, it is a disorder of failed network regulation under circumstance of cognitive, emotional, or somatic stress* (Seminowicz et al., 2004).

The imaging patterns characteristic of depressed patients who are treated successfully with psychotherapy contrast with those of patients treated with antidepressants. Patients who improved with SSRIs show *increased activity* in the prefrontal cortex and *more inhibition* in the hippocampus and cingulate (Goldapple et al., 2004). Mayberg (personal communication) describes this difference as a matter of psychotherapy working from 'the top down' and medicine from 'the bottom up.' Together, the

effects of joint psychotherapeutic-psychopharmacological depression treatment push and pull the brain back into a healthy allostatic balance (Dobbs, 2006).

Imaging studies confirm the importance of exposure (or the 'safe emergency,' to use Perls' term) in treating anxiety and also illustrate how changes may be related to the re-regulation of the neurodynamics of stress in psychotherapy. In a study of the effects of CBT on clients suffering from a spider phobia, Schienle and colleagues (2007) used functional magnetic resonance imagery (fMRIs) to document the fact that exposure to spiders provoked hyperactivity in the amygdalas and fusiform gyri of arachnophobes and decreased the activation of their medial orbitofrontal cortices (OFCs). The OFC is normally a major force in down-regulating amygdalar activation. Over time, exposure in the context of psychotherapy promoted increased medial OFC activity and lower amygdalar activation in the treatment group relative to controls. Client reports of symptom reduction correlated well with decreases in amygdalar and insular activity (Schienle, Schafer, Hermann, Rohrman & Vaitl, 2007).

Changes in psychotherapy's evidence base suggest that we are moving beyond the era of the *pax medica* in to a more complex understanding of how people change. New evidence suggests that beyond the surface differences of various therapeutic methods, at heart we help clients change by enhancing the neuroplasticity of their brains. Our brains are exquisitely adapted to change in response to the attuned and compassionate interest of another human being. Attunement helps our clients face what has been hidden and experience what has been denied, and as that happens both their brains and ours are changed. We also help by educating clients about how their behaviour affects their brains and how that in turn changes how they feel.

A promising new era is opening for psychotherapists. We can make the most of it by being mindful of the fact that the brain needs someone to listen—just as much as it needs sleep, good food and exercise—to thrive.

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LLOYD LINFORD Ph.D. is the co-author of the *Brain-Based Therapy* books and the editor of more than 30 other books on scientific topics. Dr. Linford served as Chief Psychologist and the Chair of the Chiefs of Psychology and Social Work for Kaiser Permanente in Northern California. He is the Chair of Kaiser's *Annual Psychiatry and Chemical Dependency Conference* and the Director of Psychiatry Best Practices, which develops evidenced-based programs for twenty-four medical centers in Northern California.

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