THE DSM-5 & NEUROSCIENCE
From the Editor

Editorial

Welcome to the July/August 2013 edition of Neuropsychotherapy in Australia.

DSM-5

The long awaited Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders has been released in May 2013. In this edition, I discuss some the key changes from the DSM-IV-TR to the DSM-5. I also discuss the implications of these changes. As most of our readers will be aware, there is also significant controversy about the approach taken by the key stakeholders of the DSM and those concerned about the validity of the DSM (the consensus approach). The strong critique from the National Institute of Mental Health cannot be ignored. There are also major concerns about the symptom based approach and the lack of neuroscientific indicators and research.

Neuropsychotherapy – how does it stack up?

How is a neuropsychotherapeutic approach in treating a client different from other approaches? Last year (Edition 17 Sept/Oct 2012) we published an article using a single case study to compare a Neuropsychotherapeutic approach with a Narrative Therapy approach. In this edition Matthew Dahlitz compares Neuropsychotherapy with Coherence Therapy. This is an excellent overview of the applied principles of these approaches.

Neuroscience and Leadership

Connie Hanson and myself recently completed a book: Brainwise Leadership. The book will be published in the next few weeks. We publish an article that underlines some of the aspects in the book.

Research into the efficacy of neuropsychotherapy workshops

Recently we mailed out a survey to those who attended one or more of my Neuropsychotherapy workshops - see the article in edition 20 March/April in regards to the research question. We had a huge response (over 400 clinicians responded) and cannot thank you enough for the time and effort to fill out the surveys. The data is invaluable and the benefits will stretch much further than our interests. We are in the process of publishing the results and will make the outcomes available on our website.

International Journal of Neuropsychotherapy

I would like to invite you to use the free online International Journal of Neuropsychotherapy. I am deeply involved in this (chief editor) but there are also world renowned scholars on the editorial panel – you can also watch a video clip introducing the Journal:

http://www.youtube.com/watch?v=v6-6_xiQprM

There is also a vimeo available on one of the articles in the Journal:

http://vimeo.com/67870885
Online therapy –
the Neuropsychotherapeutic Factor

We are progressing very well with the development of online psychotherapy modules. The first one focuses on the treatment of panic disorder. These modules are developed based on the principles of neuroscience and follow a bottom-up approach and are inclusive of the role of clinicians (in contrast to current top-down approaches that are exclusive of clinician interaction). We will pilot the first module in the next two months (nearly 100 clinicians signed up to assist with the pilot study). This has been a huge research process with nearly 20 clinicians involved in the design and development. We envisage developing a series of brain-based online modules to enhance outcomes for clients and strengthen the role of clinicians (which is a crucial part of the neuroscientific principle of an enriched environment). We will keep you informed about this process.

Conference papers

Since January 2013, I presented a few papers at conferences – many in the field of applied brain-based neuropsychotherapy:


Rossouw, P.J. (2013). The impact of trauma on the developing brain. NSW Service for the Treatment and rehabilitation of Torture and Trauma Clinical Workshop, Sydney, 12 June.

I am very excited to see more and more of our colleagues presenting papers at conferences in relation to applied neuroscience and their clinical work.

Mediros Workshops

Our Mediros workshops are still in full swing. The workshops on the Developing Brain and the Neuroscience of Memory and Trauma as well as the one day skills-based workshop on The brain and Anxiety are all on the schedule for the next two months. We are also honored by the visit of Prof Edita Ruzgyte from Texas and 23 of her post graduate students who will attend our Developing Brain and the Neuroscience of Memory and Trauma Workshop. The new workshop – The Social Brain and the Neuroscience of Relationships, will commence in the next two months.

Enjoy the read!

Pieter Rossouw
admin@mediros.com.au
In May 2013 the American Psychiatric Association published the long awaited Diagnostic and Statistical manual of mental Disorders (the DSM-5). This is to replace the DSM-IV-TR. This manual is based on the same principles and approach that the authors of the DSM have followed for a number of editions. The diagnostic structure, the basic sub-divisions (chapter organization), multiaxial system and levels of functioning (GAF scales) – all remained exactly the same. In short - the concept has remained unchanged – only the recipes changed somewhat.

The arrival of the DSM-5 was met with anticipation. Many descriptors were dated and the need was often expressed for an updated version of disorders, their symptoms and variable specifics.
Changes

The DSM-5 is different to the DSM-IV-TR on many levels. The APA released a document describing the” highlights of changes from the DSM-IV-TR to the DSM-5” (APA 2013). This document can be downloaded from the APA website. The document highlights some of the key changes:

**Neurodevelopmental disorders**
- Changes to the concept of intellectual disability – the term mental retardation is replaced with intellectual disability and intellectual developmental disorder introduced
- Communication disorders – replaces the DSM-IV-TR’s expressive and mixed receptive-expressive language disorders
- Autism Spectrum Disorders – replaces autistic disorder, Asperger’s disorder, childhood disintegrative disorder and pervasive developmental disorder NOS
- Small symptom based changes were introduced to ADHD
- Specific learning disorder combines a number of DSM-IV-TR diagnoses of reading disorders, mathematics disorder, disorder of written expression and learning disorder NOS.
- Motor disorders which includes developmental coordination disorder, stereotype movement disorder, Tourette’s disorder, persistent motor or vocal tic disorder.

**Schizophrenia Spectrum and Other Psychiatric Disorders**
- Schizophrenia – small symptom based changes were introduced.
- Schizophrenia subtypes (paranoid, disorganized, catatonic etc.) are eliminated due to low reliability, diagnostic stability and validity
- Schizoaffective disorder, delusional disorder and catatonia – small symptom based criteria have been introduced.

**Bipolar and related disorders**
- There are changes to criterion A – emphasis on activity and energy and the specifier for anxious distress is “delineated” (APA 2013).

**Depressive Disorders**
- Two new depressive disorders are introduced – disruptive mood dysregulation disorder (children up to 18 years of age) and premenstrual dysphoric disorder
- Bereavement exclusion – is now removed

**Anxiety Disorders**
- Obsessive-compulsive disorder is no longer described as an anxiety disorder and is now linked in the same category with PTSD and acute stress disorder.
- Panic disorder and agoraphobia were “unlinked” (APA 2013) and are now seen as two diagnoses.
- In most cases of anxiety disorders – individuals over the age of 18 must experience the symptoms for at least 6 months prior to making the diagnosis.
- Separation anxiety disorder is now recognized as an anxiety disorder as is selective mutism.

**Obsessive-Compulsive and related disorders.**
- This group is now a standalone chapter in the DSM-5 due to “increasing evidence that these disorders are related to one another” (APA 2013).
- Small changes were introduced in OCD and Body dysmorphic disorders
- Hoarding disorder is a new disorder in DSM-5. The APA indicates that hoarding disorder may have unique neurobiological correlates (APA 2013).

**Trauma and Stressor-Related disorders**
- This standalone group was subject to “significant” symptom related changes. Criterion A for PTSD is more explicit in regards to how an individual experienced traumatic events with some smaller changes to the rest of the symptom clusters (APA 2013).
- The two subtypes of reactive attachment disorder – emotionally withdrawn/inhibited and indiscriminately social/disinhibited are now defined as separate disorders (APA 2013).

**Dissociative Disorders**
- Depersonalization disorder is now called depersonalization/derealisation disorder and some minor criteria changes introduced.
- Criterion A of dissociative identity disorder has been expanded to include “functional neurological symptoms” – (affect, behavior, consciousness, memory, perception, cognition and sensory/motor functioning).

**Somatic Symptom and Related Disorders**
- The “somatoform disorders” are now called “somatic symptom and related disorders”. This group is/was even more controversial than other groups in the DSM system due to many “unexplained” effects/symptoms of medications. An interesting subgroup “medically unexplained symptoms” has been introduced. The DSM-5 states “DSM-IV criteria overemphasized the importance of an absence of medical explanation for the somatic symptoms...the reliability of medically unexplained symptoms...
is limited...the DSM-5 classification defines disorders on the basis of positive symptoms” (APA 2013). The growing concerns and indicators in research in relation to the effect- and side effect profiles of medications are not just NOT addressed, but given even less prominence than in the DSM-IV.

Feeding and eating disorders
- No major changes were made in this group – some clarifications of descriptors (pica, bulimia nervosa, binge-eating disorder) were introduced.

Sleep-wake disorders
- This classification group includes 10 disorder groups and the sleep disorders related to mental disorders or general medical conditions have been removed.

Sexual Dysfunctions
- To restrict “over diagnosing” (APA 2013), the duration has been extended to 6 months and more precise severity criteria.
- Genito-pelvic pain/penetration disorder is a new introduction to the DSM
- Sexual aversion disorder has been removed from the DSM
- Gender dysphoria is a new diagnosis focusing on “gender incongruence” and replaces the “sexual and gender identity disorder”.

Disruptive, Impulse-Control and Conduct Disorders
- This group is new to DSM. It is a combination of childhood and adolescence and impulse-control disorders.
- ADHD is not listed in this category but as neurodevelopmental disorder.

Substance-Related and Addictive Disorders
- This group is expanded and now also includes gambling disorder (there is even brief mentioning of the activation of the brain’s reward system).

Neurocognitive Disorders
- Small changes to descriptors of neurodegenerative disorders (Alzheimer’s, Pick’s, Parkinson’s, Creutzfeldt-Jacob, Huntington’s) are introduced.

Personality Disorders
- Although the authors of DSM-5 suggested that an alternative approach to the diagnosis of personality disorders was developed (APA 2013), the result is a system that is virtually unchanged in terms of classification, description and symptoms of the various personality disorders.

Medication-induced Movement Disorders and Other Adverse Effects of Medication
- The term “neuroleptic” medication is replaced with “anti-psychotic” medication however the term “neuroleptic” is upheld in the descriptors in relation to this group of disorders. This group with adverse effect profiles as result of intake of medication to treated clinical syndromes and conditions. “Treatment” consists basically of medication reduction or discontinuation.
- Antidepressant discontinuation syndrome is the only subgroup that relates to medication used to treat depression/anxiety/related disorders. Treatment suggested is to “restart the medication” that has been discontinued or take another medication that has a similar action (APA 2013).
- There are no subgroups for disorders related to the introduction of antidepressant medications.
- There are no subgroups for disorders related to the introduction of antipsychotic medications.
- There are no subgroups for disorders related to the introduction of benzodiazepine medications.

Other Conditions that may be a focus of Clinical Attention
- DSM-5 also identified conditions that are not associated with mental disorders but of clinical significance. This extensive section focuses on:
  - Relational problems – problems related to family upbringing and primary support group;
  - Abuse and neglect – child physical abuse, child sexual abuse, child neglect, child neglect (suspected), child psychological abuse;
  - Adult maltreatment and neglect – spouse or partner violence (physical or sexual), spouse or partner neglect, spouse or partner abuse (psychological), adult abuse by nonspouse or nonpartner;
  - Educational and occupational problems;
  - Housing and economic problems;
  - Other problems related to the social environment (living alone, acculturation, social exclusion, rejection, discrimination);
  - Problems related to crime interaction with the legal system (victims of crime, conviction in civil or criminal proceedings without imprisonment, imprisonment, problems related to release from prison, problems with legal
circumstances);
- Other health encounters (sex counselling);
- Problems related to other psychological, personal and environmental circumstances (religious or spiritual problems, unwanted pregnancy, multiparity, discord with social service provider, victim of terrorism or torture;
- Other circumstances of personal history (personal history of self-harm, military deployment, lifestyle, child or adolescent or adult anti-social behaviour, unavailability of medical services, nonadherence to medical treatment, overweight or obesity, malingered, wandering, borderline intellectual functioning (APA 2013).

Comments

The publication of the DSM-5 is a significant achievement. It is the result of countless consultations and deliberations on many levels – the American Psychiatric Society stakeholders, academics, practitioners and many lobby groups for specific organisations. This needs to be acknowledged and applauded. Many changes were made to the DSM-IV-TR version and many additions made. The focus is still on creating a manual that provides a “common language” to describe psychopathology. It creates a set of labels and tries to clearly define each of them. As is the case with previous DSMs the strength of this version is its reliability – the ability to ensure that all its users use the same terms in the same way. As is the case with previous versions its weakness is its lack of validity. The DSM system bases its “validity” on consensus by its groups rather than clinical research data. This is an archaic approach which is flawed in its core (when the majority decide the horse is black, then it must be a black horse). Further, the total absence of research based outcomes in neurobiological data, in order to understand the presentations of mental disorders, is, to say the least – alarming.

It is not surprising that, just prior to the release of the DSM-5, the National Institute of Mental Health (NIMH - the world’s largest funding agency for research into mental health) (strongly) withdrew its support from the manual. The director of the Institute, Thomas Insel indicated that the Institute will no longer fund any research projects that rely on DSM criteria and that the institute will be “re-orienting its research away from DSM categories” (NIMH 2013).

Although the NIMH leaves some room for the role of the environment (nature) – it seems this aspect plays a relatively small role. This criticism reflects a significant lack of focus in a significant work that epigenetic studies clearly show and indicates a focus on a specific agenda that seems to be more exclusive than inclusive.

Current interpersonal neurobiology studies and research focuses on a holistic inclusive approach to understand mental disorders – a focus on genetics (the history of risk and resilience), early (and late) life experiences (the interplay that establishes neural patterns of behaviour), current presentation (symptomatology) and facilitation of new neural patterns by engaging in a therapeutic relationship (right brain to right brain communication), an enriched environment and neural rewiring (ongoing activation) to reduce symptoms, facilitate new behaviours, ensure effective duration (new neural pathways) and enhance quality of life.

The question is whether the DSM-5 will contribute to these outcomes or hinder them?

References


Neuroscience and Leadership

Neuroscience has the potential to inform aspects of the psychologists’ work beyond the consulting room. In the March/April issue of Neuropsychotherapy in Australia we introduced the emerging area of neuroscience and leadership. In this issue we would like to continue that theme with an article focused on the psychologist-leader. Be it the manager of a small private practice, head of a mental health or rehabilitation unit, or even CEO of a health care agency, psychologists are frequently in leadership positions. While most psychologists who assume these roles have little in the way of formal training in management or leadership, the knowledge and skills that are acquired through a lifetime of clinical or academic work in psychology can be helpful in a leadership role as well. The application of interpersonal neurobiology is particularly relevant for leaders in health care.
Leadership, as opposed to management, is fundamentally about facilitating a culture of wellness as well as assisting people to function optimally. Whether at an individual level e.g. helping a colleague develop capability or at a systemic level e.g., transforming the entire healthcare system to think differently about how to improve the health and wellbeing for a community, leading the change process is key. Having a vision for how things might be better is important yet insufficient; leaders have to facilitate behavioural changes in others. Not unlike therapists, leaders are responsible for helping organisations/teams/individuals close the gap between where they are and where they want to be. The principles of neuroscience provide important guideposts for designing our leadership interventions.

For example:

Developmental neuroscience has highlighted that the brain develops and responds from the deep survival-focused parts of the brain (brain stem) to the limbic system and only later the neo-cortex (thinking parts of the brain). Leaders who understand this science know the importance of creating safety and a sense of control for people who are undertaking change — regardless of how positive the expected outcome of the change.

Interpersonal neurobiology including the discovery of mirror neurons and other components of the social brain reminds leaders of the importance of building healthy relationships with all stakeholders. Practical application of neuroscience affords psychologist-leaders the ability to be more influential as well as contribute to the overall wellbeing of the workplace. Let’s focus our attention on a couple of common scenarios that leaders encounter and consider how neuroscience can inform the leaders’ behaviour.

People Need a Sense of Safety and Control

When leaders introduce changes into the workplace the affected individuals must respond to those changes. At the neural level, there is a ‘whole brain’ response utilising structures associated with memory, perception, affect, reasoning etc. to enable the person to deal with the changes most effectively (Dotson, Beason-Held, Kraut, & Resnick, 2009; Leenders et al., 1990). Healthy people first receive information through the sense organs (eyes, ears etc.). The information is then processed in the thalamus and transmitted to the relevant cortices and the amygdala (to assess the level of threat). The prefrontal cortex (PFC) is also activated to enable higher order decision-making. Because the amygdala is only one synapse from the thalamus, it actually assesses the information for threat before it is transmitted to the cortices. If the information is assessed to be a threat, the amygdala activates the hypothalamic pituitary adrenal (HPA) response - readying the body to protect. At this point the PFC in coordination with the hippocampus (relevant memory) is engaged to determine if the change can be coped with effectively. If it is deemed non-threatening the PFC will down regulate the amygdala. If however the change is determined to threaten basic psychological needs no signal is sent and the ‘stress response’ will ensue (Grawe, 2007).

In a clinical setting symptoms of anxiety or depression are likely to manifest. In a work setting the response is more likely avoidance or defensive behaviour rather than the more intense symptoms seen in the consulting room (Rossouw & Henson 2013).

How the leader presents information in combination with each individual’s previous history with change will have a significant impact on how ‘threatening’ any given change is perceived to be. Leaders who have a strong relationship with their employees will be aware of each individual’s relative ‘sensitivity to change’ and can adjust their approach accordingly. Even in the absence of specific knowledge about the group/individual, it is possible to present information in a manner that will facilitate people feeling safe and in control.

For example effective leaders:

- Present changes in the context of values held by the individuals, not just the values/needs of the leader or the business
- Give people the opportunity to describe their reactions (label emotions) voice their concerns (including negative emotions and disagreements) and work with them to resolve these worries
- Remind people of the individual strengths and attributes they have used to overcome previous challenges
- Highlight the support that will be available to assist people with the changes

All of these techniques help to create a ‘safe’ environment, where individuals feel a sense of personal control. Leaders who plan how to best present new information, taking into account how the brain responds to change, make a positive difference in the initial and longer-term ability of colleagues to adapt to changes.

Empathy is a Leadership Tool

Whether in the consulting room or more generally in the workplace relationships are central to growth and adaptation. Empathy is fundamental to building effective relationships and is a core skill for psychologists. Empathy enables leaders to deeply understand their employees and build trust necessary for engagement. Likewise, empathy is the key to enabling lead-
ers to identify potential losses during times of change and to behave compassionately—which is particularly important for leaders who have responsibility for the safety and wellbeing of employees. Psychologists have studied empathy for many years and now neuroscience further illuminates this powerful element of healthy relationships. Mirror neurons thought to play an important role in empathy were first seen in animals in the 90’s (Gallese et al 1996) and have recently also been recorded in humans (Mukamel 2010).

Mirror neurons in humans exist in many regions of the brain including the cortex and regions related to memory in the limbic system. These neurons activate when a person performs a specific action and when a person observes someone else perform that same action (Mukamel 2010; Iacoboni, 2007). Mirror neurons and mirror neuron systems (networks that include mirror neurons and other brain regions associated with imitation and empathy) are thought to connect us to each other by encoding perceived actions, emotions, intentions and goal directedness as though we are experiencing them ourselves (Mukamel 2010).

The implication of this science is that through mirror neuron systems human brains can become attuned to each other – such that we ‘know’ at a neurological level what the other person is feeling/intending. In other words our ability to empathise is not necessarily dependent on language or other high-order cognitive abilities. This will not be a surprising to therapists; nevertheless having a neurobehavioural explanation is powerful. The practical applications for this line of research for leaders is immense, and there are some immediately useable applications for any psychologist-leader. When leaders are psychologically healthy and are ‘living their values’ they communicate this to colleagues simply by being themselves. Because people pay attention to the leader they will naturally mirror the leader (through the process described above). Mirroring healthy, values-congruent intentions and behaviours informs staff of what the leader intends i.e. ‘what’s really important’. Moreover leaders who are attentive to what is being communicated to them both consciously and unconsciously are in a much stronger position to respond thoughtfully. Rather than reacting to superficial ‘negativity’ in the workplace effective leaders are attuned to the deeper needs of stakeholders and are able to respond in a way that enables people and the organisation to clearly articulate and meet their needs.

Effective leadership

- Brainwise leaders maintain their psychological health and reinforce health and strengths in others
- Seek to build healthy relationships with all stakeholders in the work place
- Recognise that they are role models and strive to live their values
- Attend to the deeper communication and respond compassionately

These leadership behaviours grounded in psychology and neuroscience have been associated with higher levels of stakeholder engagement in the workplace (Rath 2010).

Conclusions

Psychologists have a plethora of knowledge, skills and experiences that can assist them in their roles as leaders. Neuroscience provides psychologists with an even broader spectrum of tools that can be applied in the leadership arena. As psychologists work alongside the diversity of people that make up the health care sector and the community, deliberately applying the knowledge of our profession will enable psychologists to have greater influence and at the same time contribute to the wellbeing of our colleagues as we work together towards a healthier community.

References


**THE DEVELOPING BRAIN AND THE NEUROSCIENCE OF MEMORY AND TRAUMA**

The Mediros office was closed for most of July this year so we have EXTENDED the early bird deadline for this workshop:

**Brisbane:** Workshop date: 12 & 13 September 2013, RBW Hospital, Herston Rd, Herston, Brisbane

Early Bird closing date for Brisbane is: Monday 12 August 2013

**Melbourne:** Workshop date: 20 & 21 September 2013, Royal Melbourne Hospital, Grattan Street, Parkville

Early Bird closing date for Melbourne is: Wednesday 21 August 2013

**Sydney:** Workshop date: 3 & 4 October 2013, Portside Centre, Level 5, 207 Kent Street, Sydney

Early Bird closing date for Sydney is: Wednesday 04 September 2013

**HOW TO REGISTER:**

Email us at admin@mediros.com.au OR Register online at www.mediros.com.au

OR Download the registration form from the APS website's Events Calendar:


---

**THE SOCIAL BRAIN AND THE NEUROSCIENCE OF RELATIONSHIPS**

This is the NEW RELEASE workshop for 2013. The early bird deadline is the usual 60 days prior to the workshop.

**Sydney:** Workshop date: 28 & 29 Nov 2013, Portside Centre, Level 5, 207 Kent Street, Sydney

Early Bird closing date for Melbourne is: Monday 30 September 2013

**Melbourne:** Workshop date: 15 & 16 Nov 2013, Royal Melbourne Hospital, Grattan Street, Parkville

Early Bird closing date for Melbourne is: Monday 16 September 2013

**Brisbane:** Workshop date: 21 & 22 Nov 2013, RBW Hospital, Herston Rd, Herston, Brisbane

Early Bird closing date for Melbourne is: Monday 23 September 2013

**Canberra:** Workshop date: 18 & 19 Oct 2013, Calvary Priv. Hospital, Mary Potter Cct, Bruce, ACT

Early Bird closing date for Melbourne is: Monday 19 August 2013

**Adelaide:** Workshop date: 25 & 26 Oct 2013, Hackney Hotel, 96 Hackney Road, North Adelaide

Early Bird closing date for Melbourne is: Monday 26 August 2013

**Perth:** Workshop date: 1 & 2 Nov 2013, St Catherine’s College, UWA, 2 Park Rd, Nedlands, Perth

Early Bird closing date for Melbourne is: Monday 2 September 2013

**Hobart:** Workshop date: 25th & 26th Nov 2013, Grand Mercure Hadleys Hotel, 34 Murray St, Hobart

Early Bird closing date for Melbourne is: Thursday 26 September 2013

**HOW TO REGISTER:**

Email us at admin@mediros.com.au OR Register online at www.mediros.com.au

OR Download the registration form from the APS website's Events Calendar:


Jack is a 28 years old, single Australian man from German origin. He works as an accountant in Brisbane. He has come to you on recommendation of his mother. Jack has mixed feelings about seeking professional help, as he finds it hard to communicate his feelings.

Jack’s major problem seems to be depression. He has an ongoing feeling of dread and exaggerated fear of being exposed to being judged by others resulting in him being withdrawn and depressed. He is uncomfortable to interact with others and prefers to stay home. This resulted in work related difficulties and he is contemplating quitting his job. Jack has been depressed for many years and has no close friends. His relationship with his parents has deteriorated and he experiences a growing resentment towards his father. This makes him even more depressed and at times he feels that he cannot see a point in being around. He tends to become philosophical about life and often abuses alcohol to try to manage the distress. He tends to play online video-games for very long periods resulting in irregular sleeping and eating patterns. Jack has no history of drug abuse and is not taking medication at this stage. He is very skeptical about drugs in general. His General Practitioner considered anti depression therapy but decided to refer to you instead.
The above case will be conceptualised and analysed from the perspectives of neuropsychotherapy and coherence therapy, then an integrated personal approach suggested. Similarities and differences between the approaches will also be discussed.

Neuropsychotherapy

The neuropsychotherapist aims from a “bottom-up” perspective to understand the neural underpinnings of pathology through the lens of life experience and the meeting of basic needs, and to apply specific therapies to change this neurobiology toward a satisfaction of those basic needs (Grawe, 2007).

In the case of Jack, the neuropsychotherapist is likely to assume an enlarged amygdala due to the overactivity of this area in facilitating the feelings of dread and exaggerated fear (Grawe, 2007; Van Eijndhoven et al., 2009). He or she will also be aware of the likely lack of affect-positive, left prefrontal cortex (PFC) modulation of amygdala activity, and a stronger neural connection and overall activity between the affect-negative right ventromedial prefrontal cortex (vmPFC) and the amygdala (Grawe, 2007; Koenigs & Grafman, 2009). Avoidance tendencies in social situations suggest a decrease in motivational action originating from the left dorsolateral prefrontal cortex (dlPFC) and an increase in avoidance action from the right dlPFC (Berkman & Lieberman, 2009), with an overall bias toward right dlPFC activity (Herrington et al., 2010). This tendency for the client’s right PFC to dominate with avoidance goals and negative emotions (Davidson, Ekman, Saron, Senulis, & Friesen, 1990; Grawe, 2007) is probably further complicated by decreases in anterior cingulate cortex (ACC) activity (Caetano et al., 2006; Gao et al., 2012; Quidé, Witteveen, El-Hage, Veltman, & Olff, 2012), which has placed him in a state of resignation (recalling it was on his mother’s motivation that the client sought therapy, whereas the client himself has feelings of hopelessness) (Davidson, Pizzagalli, Nitschke, & Putnam, 2002; Grawe, 2007).

Further assumptions would be made about hippocampal volume loss due to chronically elevated cortisol levels from an extended time of depression (Arden & Linford, 2008; Grawe, 2007), which would be exposing the client to context-inappropriate emotional responses (Davidson, Pizzagalli, Nitschke, & Putnam, 2002). This cortisol damage to the hippocampus is due to a failure to down-regulate the HPA axis stress response, which unfortunately would have limited the formation of new neural patterns of coping (Kandel, Schwartz, Jessell, Siegelbaum, & Hudspeth, 2012), effectively trapping the client in dysfunctional avoidance schemas in a continually downward spiral of depression. Dysfunctional coping strategies (alcohol abuse, video game addiction) raise dopamine levels to satisfy the reward system and make the client feel better in a “safe”, controlled environment (at home), with the nucleus accumbens reinforcing such behaviour (Boileau et al., 2003; Rossov, 2012).

The neuropsychotherapist would regard the client’s brain as functionally and structurally altered in a dysfunctional attempt to meet basic needs, such as for control, interpersonal attachment, avoidance of pain, and self-esteem enhancement (Grawe, 2007). The tendency for the client to have fallen victim to depression may well have its roots in an insecure attachment style established when the client was an infant, setting the stage for a dominance of avoidance motivational schemas that are essentially fear-based autonomic arousal (Cozolino, 2010).

Therapeutic change must address the foundational motivational schemata from a bottom-up perspective, building the appropriate brain regions and their activity until the client can pursue positive goals under his own volition (Grawe, 2007). Creating a safe environment in Jack’s case through a warm, non-threatening therapeutic alliance would be vital (Arden & Linford, 2008) to down-regulate the stress response that has been inhibiting new learning. A non-judgmental approach would be particularly important because of his elevated fear of being judged. Identifying Jack’s most salient motivations and working these into positive approach schemata is the ultimate goal for his recovery (Grawe, 2007). This shift would see unhelpful cortical and sub-cortical “loops” dissolve in favour of healthy linear patterns like a stronger (more axonal) connection between...
the prefrontal cortex and amygdala (Davidson & Begley, 2012), allowing the client to face challenges in a way that would lead to new learning through the facilitation of more complex, differentiated neural pathways (Grawe, 2007). Strengthening the slower neural pathways from the thalamus to the cortex, and back to amygdala, to helpfully inhibit the overly sensitive and powerful thalamus-amygdala pathway, would ultimately give the client much-needed adaptive responsiveness to the currently dominant unconscious fear response (Arden & Linford, 2008).

The neuropsychotherapist would take an integrative approach to actual therapeutic techniques that would best fit the client’s case and achieve desired outcomes. Arden (2008) suggests that cognitive behavioural techniques work well for the nonresistant client, while psychodynamic approaches are a better fit for resistant clients (for an interesting integration of two behavioural approaches, functional analytic psychotherapy and acceptance and commitment therapy, that may be effective for depression from a neuropsychotherapeutic stance, see Callaghan, Gregg, Marx, Kohlenberg, & Gifford, 2004). As already observed, the client’s level of motivation in this case is questionable, although his scepticism about drug intervention could be used as motivational leverage to have him fully engaged in talking therapy. Because the activation of the left PFC is an important target for therapy, mindfulness meditation techniques would be helpful in facilitating new neural pathways to dissipate negative emotional control by the amygdala and more negative resilient thought patterns (Davidson & Begley, 2012).

The neuropsychotherapist is also aware that changing neural networks, realising positive gene expression, and revitalising positive, yet corroded patterns of thought takes time in the order of weeks, rather than days (Grawe, 2006; Waites, Craig, & Garner, 2005—although a study on adult-born neurons in the olfactory bulb and dentate gyrus, it does give a good indication of synaptogenesis timeframes). Explaining this to the client should give him some assurance in the early sessions of therapy. Even when symptoms have abated, the therapist will want to continue shifting the client’s neural patterns of motivational schemata to positive approach styles to mitigate a future relapse into depression (mindfulness techniques, again, could prove helpful here – see Hautzinger, 2010).

Coherence Therapy

Coherence therapy views the client’s symptoms of depression as a necessary maintenance of underlying, unconscious constructs from the past that are lived out in the present moment (Ecker & Hulley, 2011). The overarching concept is that of symptom coherence, where adaptive schemas or construc-
tions of reality make certain symptoms necessary to maintain coherence (Ecker, Ticic, & Hulley, 2012). In this view, the symptoms of depression reflect an “adaptive, coherent expression of unconscious emotional learning” that is consistent with many similar theories from Freud onward (Ecker, Ticic, & Hulley, 2012). The critical departure of this approach from cognitive regulatory approaches like CBT (cortical competition, moderation and management of unwanted implicit affect) is the understanding that strong emotional implicit memories, laid down by the amygdala, are not indelible, but are transformable (Toomey & Ecker, 2009).

As with neuropsychotherapy, the client may be totally unaware of the implicit learning that shapes his current situation, and his depression could be rooted in the “deeply forlorn state of having learned from cold, critical parents that one is unworthy of love” (Ecker, Ticic, & Hulley, 2013, p. 83), or some similar unconscious, yet pervasive memories. Strong emotional/stressful learning (mediated by the amygdala, see McGaugh, 2004, and enhanced by noradrenergic activity, see Ferry, Roozendaal, & McGaugh, 1999) from childhood becomes locked into subcortical implicit memory (Roozendaal, McEwen, & Chattarji, 2009), that is enduring through to adulthood (McGaugh, 2000; Sevelinges et al., 2007) and becomes the invisible driver of behaviour that remains, regardless of new opposing learning (for example the retention of extinction learning in the vmPFC, see Bouton, 2004; Phelps, Delgado, Nearing, & LeDoux, 2004). Coherence therapy capitalises on the recently found “key” to unlocking these implicit emotional memories, reconsolidation: the activation of targeted emotional learning into a de-consolidated (plastic or destabilised) state whereby the memory can be revised before relocking its synaptic encoding (Ecker, Ticic, & Hulley, 2013). This effectively re-writes, or erases, that emotional memory while leaving any episodic/autobiographical memories intact (for a concise summary of reconsolidation see Lee, 2009, or Nader & Einarsson, 2010).

As with neuropsychotherapy, the therapeutic alliance is very important, and the therapist’s empathy has a catalytic effect critical to this approach. Factors such as building emotional safety, trust, attunement, and the ability to repair ruptures are essential (Ecker, Ticic, & Hulley, 2012; Toomey & Ecker, 2009). In the current case, the therapist would first learn from the client what symptoms are problematic in order to define the “pro-symptom position” or core schema the symptoms are supporting (Ecker & Hulley, 2011, Ecker, Ticic, & Hulley, 2012). For example, an unconscious construct founded on an early implicit memory of an overly harsh and judgmental father who had unrealistic expectations produces a self-protective schema to avoid judgment, and ultimately rejection, by others (Ecker, Ticic, & Hulley, 2012). The foundations may, however, go further back to infancy, where an insecure-avoidant attachment style was established because of a rejecting mother (Arden & Linford, 2008, Ecker, Ticic, & Hulley, 2012; Grawe, 2007), manifesting as a fear of being exposed and judged by others, and a resulting withdrawal from social situations. The pro-symptom position may be expressed as “People are judgmental and will reject me if I don’t live up to their expectations. Therefore I will avoid people’s expectations by withdrawing from them because I want to be loved and accepted, not rejected.”

The therapist would then shift the unconscious pro-symptom position into conscious awareness for the client, showing that the symptom is necessary in order to support the underlying construct that
people will judge and reject the client if strategies to avoid that judgment are not put in place. This non-pathologizing approach is important for the client to fully engage with the emotional truth of the symptoms (Ecker, Ticic, & Hulley, 2012). The social withdrawal, fear, resentment of father – all have a functional purpose in maintaining a construct established when the client was a child (consistency theory, see Grawe, 2007, pp. 168-173).

The next step is to discover knowledge contradictory to the target construct that is emotionally potent to the client. The client may, for example, recall instances where his boss at work was not judgmental and rejecting: even though he had made a mistake and the boss could well have judged him harshly, the client felt safe and accepted. Armed with this contradictory knowledge, the therapist brings the two memories simultaneously into conscious awareness with emotional intensity (Ecker, Ticic, & Hulley, 2012) (causing the memories to be in a destabilized state as described above). Experiencing the juxtaposition of these opposing emotional memories causes the brain to reject the paradox of both being true at the same moment and re-consolidates (rewrites) the memory to agree with the new learning, thus restoring mental consistency. Subsequently, there is no longer any neural basis for the client’s construct that people are fundamentally judging/rejecting, and therefore no need for the symptoms to continue, as they no longer have a congruency function (Toomey & Ecker, 2009).

**Integrated Personal Approach**

Though presented only in brief overview here, the fundamentals of neuropsychotherapy and coherence therapy are similar, and integrating these understandings into a personal approach would provide a powerful synergy. Such an approach would theorise that the client has encountered events in the past which evoked negative emotions because they threatened, or took away, important motivational goals. The way the client has dealt with these threats or losses has been established by early implicit affective memories, causing an avoidance style of withdrawal to protect his goals and maintain mental consistency. These avoidance schemas have, over time, developed into the neural patterns already described (see in Neuropsychotherapy above), manifesting as an avoidant, depressive state due to uncontrollable incongruence (Bosmans, Braet, & Van Vlierberghe, 2010; Grawe, 2007). Resolution will be found in a two-pronged approach: modify or eliminate the underlying implicit emotional memory that drive avoidant schemas by memory reconsolidation, and repair, reorientate, and create neural networks that support positive approach schemas for achieving goals.

The client’s clearly deteriorated state is cause for alarm, especially as he has indicated that at times he “cannot see a point in being around” (Rudd, 2008), implying suicidal thoughts. Providing a safe and understanding environment and therapeutic relationship is vital to down-regulate the very sensitive and hyper-aroused stress response (Cozolino, 2010). Time and patience are required to move the client into a state of calm where chronically heightened glucocorticoids and uninhibited HPA axis responses are brought down to levels where new functional learning is able to be facilitated without damaging levels of cortisol (Arden & Linford, 2008; see Bremer, 1999 for a review of cortisol-mediated hypothalamic atrophy).

Understanding from the viewpoint of coherence therapy that the existing motivational schema of avoiding social situations is a functional construct to maintain consistency is helpful in non-pathologizing of the symptoms. An explanation along these lines to the client, facilitating an understanding and conscious awareness of the pro-symptom position, would be very helpful in restoring a feeling of control and further down-regulating the stress of his situa-
Aiming for the reconsolidation of implicit emotional memories driving the depressive symptoms, at the same time as exercising increased PFC influence over the amygdala and general left hemisphere activity (and more specifically an increase in left dlPFC), would provide a good integration of both approaches.

Furthermore, paradoxical emotional memories identified for the juxtaposition stage of coherence therapy could serve a dual purpose, not only facilitating the rewriting of an unwanted implicit memory but, through imagination exercises, increasing prefrontal cortical and ventral striatum activity and connectivity (Davidson & Begley, 2012).

Actual therapeutic techniques would be selected on the basis of the individual attributes and motivations of the client (see discussion under Neuropsychotherapy) in accordance with an integrative perspective providing a full palette of options. The client would also receive some basic neuroscience education in layman’s terms. For example, representing the brain as essentially three modules – “top” (L/R cortex), “bottom” (limbic), and “middle man” (ACC) – in a certain dynamic relationship (Arden & Linford, 2008, p. 219) would be an effective way to increase clarity for the client concerning his depression, and thus a sense of control.

Pursuit of more positive approach goals, in tandem with memory reconsolidation therapy, would be facilitated by first strengthening left PFC activity through mindfulness techniques, and utilising elements of acceptance and commitment therapy (ACT), to once again recover left PFC control (Folke, Parling, & Melin, 2012; Markanday et al., 2012).

The client’s alcohol abuse would be addressed firstly by educating him about the impact alcohol has on the brain (Arden & Linford, 2008; Harper, 1998; Manzo-Avalos & Saavedra-Molina, 2010), particularly neurodegeneration in the hippocampus, which would further exacerbate his depression by impairing his mood regulation and ability to learn new coping methods (Morris, Eaves, Smith, & Nixon, 2010; Nordberg, Larsson, Perdahl, & Winblad, 1983; Wrase et al., 2008), and then by applying techniques such as ACT to eliminate this destructive behaviour (Petersen & Zettle, 2009).

If the emotional memory reconsolidation aspect of the therapy is successful (i.e., the target emotional memory is successfully modified), then the foundation of the motivational schemas that led to depression will be removed. Along with the reformation of neural pathways to facilitate positive approach schemas and stress resilience, the client should not easily relapse (Ecker, Ticic, & Hulley, 2012), and should be both inwardly and outwardly much more robust in the face of life’s challenges and demands.

Along with the reformation of neural pathways to facilitate positive approach schemas and stress resilience, the client should not easily relapse, and should be both inwardly and outwardly much more robust in the face of life’s challenges and demands.

Pursuit of more positive approach goals, in tandem with memory reconsolidation therapy, would be facilitated by first strengthening left PFC activity through mindfulness techniques, and utilising elements of acceptance and commitment therapy (ACT), to once again recover left PFC control (Folke, Parling, & Melin, 2012; Markanday et al., 2012).

The client’s alcohol abuse would be addressed firstly by educating him about the impact alcohol has on the brain (Arden & Linford, 2008; Harper, 1998; Manzo-Avalos & Saavedra-Molina, 2010), particularly neurodegeneration in the hippocampus, which would further exacerbate his depression by impairing his mood regulation and ability to learn new coping methods (Morris, Eaves, Smith, & Nixon, 2010; Nordberg, Larsson, Perdahl, & Winblad, 1983; Wrase et al., 2008), and then by applying techniques such as ACT to eliminate this destructive behaviour (Petersen & Zettle, 2009).

Both approaches are grounded in neuroscience and aim to manipulate neural pathways and synaptic sensitivities toward more functional operation for the fulfilment of basic needs. Both are open to a multitude of therapeutic techniques to achieve their goals and in this respect can be considered truly integrative.

Differences

Neuropsychotherapy differs from coherence therapy, however, in that it is a broad and expansive scientific view of the nervous system and resulting mental life, aimed at resolving difficulties by modifying neural structures to better meet basic needs (Grawe, 2007). Coherence therapy is more narrowly focused on the modification of implicit emotional memories underpinning symptomatic behaviour,
via a specific sequence of events designed to effect reconsolidation (Ecker, Ticic, & Hulley, 2013). It addresses a single, albeit very important, aspect of neural patterning. In this sense, neuropsychotherapy encompasses not merely the process of coherence therapy but a multitude of neurological and chemical deficits, dysfunctions and differences that amalgamate into what is experienced as the mental life. Further, although the focal point for neuropsychotherapy is the neural underpinnings of mental activity (Mizen, 2005), it embraces a biopsychosocial framework to understand these neural patterns (see “What is Neuropsychotherapy?”, n.d., for a comprehensive definition; Walter, Berger, & Schnell, 2009, for a definition of neuropsychotherapy as a field of research; “Mediros Clinical Solutions”, n.d., for a full appreciation of the scope of applied neuropsychotherapy).

In terms of process, whereas the sole aim of coherence therapy is to make conscious the emotional memories that underlie the symptoms and reconsolidate them, and this may take only a few sessions, neuropsychotherapy typically has a longer time horizon. Its aim is to reorient an entire system of dysfunctional neural networks to restore functionality – a process that can be expected to take longer than the reconsolidation of an emotional memory.

**Concluding Remarks**

The sources of incongruences for the client Jack are pervasive and overwhelming. Dealing with them in his current mental state would be impossible. A solution is needed that puts an axe to the root of the problem – the foundational implicit memories – then rebuilds the neural basis for a positive approach-driven brain. With this in view, the amalgamation of neuropsychotherapy and coherence therapy makes for a powerful theoretical and practical approach to achieve recovery for the depressed client.

**References**

Arden, J. B., & Linford, L. (2008). *Brain-Based Therapy with Adults: Evidence-Based Treatment for*
Everyday Practice (1st ed.). Wiley.


Kandel, E., Schwartz, J., Jessell, T., Siegelbaum,


Matthew Dahlitz is the Editor-in-Chief of The Neuropsychotherapist, an eMagazine for psychotherapists informing them of relevant neuroscience and other related disciplines that are enhancing therapeutic effectiveness. Matthew has had a broad base of experience, both practically and academically, in the areas of medicine, business, social sciences, and the arts. He is currently under the tutelage of Dr. Pieter Rossouw in the field of Neuropsychotherapy.

For more information about The Neuropsychotherapist, please go to www.neuropsychotherapist.com
Neuropsychotherapy is an exciting science, not least because of the recognition that significant changes occur for clients in neural firing and structure as a result of talking therapies. Neuropsychotherapy is the “language” used in the interaction between the clinician and the client to guide the client in the process of restructuring the brain towards higher levels of functioning and well-being. It uses information from neurosciences to assist clients suffering from a wide range of biological, psychological and social challenges to apply strategies to down regulate unhelpful neural stress responses and up regulate neural activation towards neural change. Understanding the neurophysiology of these disorders and activation patterns of neural pathways as well as discussing practical applications, assist clinicians greatly to apply these strategies to treat depression, anxiety and trauma.

ABOUT THE PRESENTER

Pieter J Rossouw M Clin Psych, PhD, MAPS, CCLIN.

Pieter is the Director of the Master of Counselling Program at the School of Psychology and the School of Social Work and Human Services at The University of Queensland. His research and teaching focuses on Neuropsychotherapy. Pieter is also the Director of Mediros – a company that provides training in Neurobiology and Neuropsychotherapy.

Pieter has been in private practice for the past 25 years. Pieter holds Honours Degrees in Philosophy and Psychology, a Master Degree in Clinical Psychology and a PhD. Pieter is a member of the Australian Psychological Society and the APS College of Clinical Psychologists. He provides Mental Health training for GP’s and is accredited at the Royal Australian College of General Practitioners.

Pieter was a Professor in Clinical Psychology at Universities in Canada, Holland and South Africa where he also spearheaded a Psycho-Therapeutic Assistance Program to support people being exposed to trauma.

Pieter specialises in neuropsychotherapy and is an expert in anxiety and mood disorders. He has published 5 Scientific Books and 20 scientific articles. He has been involved in research in extensive clinical trials and presented research papers at 30 International Conferences worldwide. He is a member of the Global Association for Interpersonal Neurobiology Studies, the International Society for Traumatic Stress Studies, the International Association for Family Therapy and the Professional Association for Drug and Alcohol Workers and the Australasian Cognitive Neuroscience Society.
Registration Form or Register online: www.mediros.com.au

PH/MOBILE: ________________________________________________

E-MAIL: ________________________________________________

COSTS

Two day Workshops:
- Early Bird rate (60 days prior) $495.00
- Standard Rate $545.00
- Student rate (copy of st card) $465.00
- Group (4+, one payment) $450.00

One day Skills Classes:
- Early Bird rate (60 days prior) $295.00
- Standard Rate $345.00
- Student rate (copy of st card) $265.00
- Group (4+, one payment) $270.00

Discount rate on Skills Classes if booked at the same time as a two day Workshop
- Early Bird rate (60 days prior) $265.00
- Standard Rate $310.00
- Student rate (copy of st card) $240.00
- Group (4+, one payment) $245.00

TOTAL COSTS: ________________________________________________

PAYMENT OPTIONS

☐ CREDIT CARD (Visa of Master only)
- Card Number: ________________________________________________
- Expiry Date: ______________Three digits on back of card

☐ Cheque ☐ Bank Transfer – we will email you the invoice & Mediros bank details

Name of Card: ________________________________________________

Amount: ______________________Signed: ______________________

Email to: andie@mediros.com.au

Fax: 07 3294 3220

Mail: Mediros (Admin), PO Box 6460, St Lucia, Qld, 4067

Mediros Phone Number: 07 3217 7266