

Where to Now?

I introduced this feature in the Editorial, but perhaps it needs more description. This feature is comprised of the responses of 20 authors, all friends and colleagues, to a simple question – “Where To Now?” The motivation is partly because we are wanting to evolve the title of this magazine from *The Neuropsychologist* to *The Science of Psychotherapy*. We have quietly made this change to the name of our website some months ago. The change is a reflection of the natural evolution of our scope. This evolution has emerged out of a clear message from both our authors and our readers – there is more that we must talk about. And that is now quite obvious.

Our magazine articles are now addressing topics that continue to include neuroscience – frankly, at some point, pretty much everything does – but acknowledge that, fundamentally, everything is connected, and it is important to explore many subjects, disciplines and concepts. So, *The Science of Psychotherapy* will now explore the knowledge and the experiential knowing – the science – about those things that are related to our psyche and how we can best produce some degree of beneficial change – psychotherapy.

The authors have shared their thoughts, considered opinions and heartfelt passions about how we practice, what we practice and why we practice. We have people talking about neuroscience, technology, education, immunology and lifestyle, neuro-counseling, mindfulness, depression, relationships and more. We have authors from 5 countries, different

cultures and different perspectives. Where do we take this, where is it taking us, what can we open our hearts and minds to as we wonder about, Where to Now? This is a grand opportunity to ask questions, make comments, agree and disagree with a fascinating group of authors and readers. I look forward to seeing lots of activity in the comments on our website. Speak to the authors, speak to each other. Together we can make a difference. That is where *The Science of Psychotherapy* seeks to go, now. Tell us what you think and help us celebrate the joyful wonder of future possibility – Where to Now?

ERIC BEESON

Where to next? This question spurs my curiosity. Like explorers searching for new frontiers, the counseling and psychotherapy field is at a critical moment in its history. We have moved from narrative descriptions of client scenarios to inform diagnosis and treatment, to the operationalization of symptom clusters into socially constructed categories, and now to the search for more discrete underlying components of all human functioning. But, to what end?

Some might say the answer to the former question is only as important as the outcomes produced. Others might say the quest for new knowledge is important enough, but it is about the journey, not the destination. Regardless of your perception, this new era of science in counseling and psychotherapy is stimulating

reservation from the establishment and optimism among the explorers. Continued exploration of what has been and what could be, is what's next.

Theoretical concepts have guided our practice, and science has sought to support those theoretical suppositions. The current iteration of scientific advances exists within the tension between what we "know" and what we hope to "know." We seem to be in the age of neuroscience, and there needs to be a balance between technical accuracy of the science with accessible translation into practice. As practitioners, we might not need to know which precise voxels in the brain work with other voxels to form complex networks of millions of brain cells that drive memory formation and retrieval, but this science has already informed new translational theories of memory formation and reconsolidation that shifts the way we understand fear-based responses. This translational process requires a certain humility so that science is not overstated. Accurate and ethical translations of science into practice, is what's next.

New science regarding memory reconsolidation, cortical-subcortical information processing, and the impact of socio-cultural variables (e.g., racism, discrimination) on nervous system development provides new insights into long standing concepts from cognitive behavioral therapy (CBT). We have new questions. What if schemas, cognitive distortions, and core irrational ideas are really memory traces that have been reconsolidated and strengthened throughout the lifetime? What if traditional CBT creates competing memories rather than reconsolidating existing memory networks? What if we really do act before we think? How can we evaluate thoughts using

cortical structures when blood flow is localized in subcortical regions of the brain? What if we miss enduring activating events (e.g., racism) and promote shame by evaluating superficial thoughts about someone's reaction to social stereotypes and bias? What's next? is more about the quality of the questions than the answers.

Where to next? I call the field to move from using advances in science to justify what we have been doing for decades and use advances in science to inform what we do next. I pose a phrase to guide this process: Because we know this, now we need to.... As we fill in this blank, can we use science to guide and inform our practice, dismantling preconceptions that prove to be incorrect, and search for new ways of knowing and being? New science is an opportunity to inform new theories, which continues the process of scientific discovery. Where to now? is to become explorers in this exciting era of science in counseling and psychotherapy.

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LISA DION

Your body is your most important tool as a therapist. It contains all of the information you need to understand what is happening in you, in your client, and between both of you in any given moment. Without a relationship with our bodies, we are fish-out-of-water in the therapy room. Somewhere along the way we became so focused on theory and protocol

that we inadvertently disconnected from our bodies. The result has been a more left hemispheric approach to the therapeutic process and a fear of fully entering a shared emotionally intimate space with our clients. By fear, I mean a resistance to feeling alongside the client and moving towards the uncomfortable thoughts, emotions and sensations that arise within our inner world as we engage with our clients. I find that therapists are deeply afraid of this space. And yet it is precisely this act of moving towards and feeling into that allows the therapist to become the external regulator for their clients as their clients simultaneously work towards integrating their own uncomfortable thoughts, feelings and sensations. This deep level of resonance is what creates attunement: the kind of attunement that helps a client feel “felt” at a core level; the kind of attunement that reaches a client’s most vulnerable states allowing for new patterns of safety to emerge.

While theory and protocol are important, what is more important is the therapist’s ability to attune to themselves, to understand their own internal activation and nervous system states, to know how to read the feedback that arises in their own bodies during sessions and to know what to do with this information, rather than ignoring or moving away from it. The idea that it is possible to separate the therapist’s and client’s experiences from each other still permeates our thinking, yet we now know through neuroscience, interpersonal neurobiology and quantum entanglement that what occurs in the therapeutic exchange is indeed a shared experience. Therapists and clients resonate together, constantly exchanging verbal and non-verbal information, flowing into and out of attunement. Both therapist

and client are affected by each other’s movements, expressions, emotions, and thoughts and this information is accessed through the body. Therapists must learn how to go into their own bodies and into this shared space to learn how to be with. The therapist’s own experience is an untapped resource of knowledge. It is a guide, a lighthouse, a barometer, and a compass that allows the therapist to become curious about what is needed in the moment with their client. Therapists and their bodies are the most important tool in the therapy room and we have forgotten to give them the most amount of attention.

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THE DY VELIZ

*From serving the self through the pursuit
of happiness to transcending the self in the
service of others though purpose and joy*

Most mental health professionals are familiar with the idea that the brain plays a critical role in the symptoms that afflict their clients. Some are able to teach their clients what happens in the brain when they are “triggered” by a childhood memory, and instruct them what to do in order to downregulate their brainstem and limbic system. The decade of the brain in the 90s along with the contributions of many luminaries in our field (e.g., Dan Siegel, Allan Schore, Louis Cozolino) have solidified our understanding of the role of the development and functioning of the brain in helping our clients transition from patterns of avoidance to engagement and connection as a way to ameliorate their symptoms and im-

prove their functioning.

However, our culture is resilient! It is the result of an evolutionary path which has resulted in many technological advances while eroding our capacity to experience a more, as Iain McGilchrist puts it, “integrated, empathic, relational, and embodied sense of relationship”. It is critical that we do not underestimate the power of the neurotransmitter that has been behind our achievements as a species: Dopamine. Researchers such as Previc in 2009 show that dopamine is about domination and control. The challenge is that dopamine works in helping our clients achieve “success.” However, the individualistic tactics that lead to this success contribute to the development of transactional “one-person” psychologies (see Allan Schore) which have the opposite effect when applied to relationships. I would even venture to say based on my personal and clinical experience that this so-called “success” is not necessarily a desirable destination as it is driven by the pursuit of happiness at the expense of purpose, joy and fulfillment through relational “two-person” psychologies.

What we now need to is transition from teaching our clients about the brain, which is an activity during which we lead with the left brain, to being, again learning from McGilchrist, a catalyst for a new way of attending that leads our clients to “feel” the embodied and visceral sense of what it is like to be connected to or coregulated by their partner, children, family member, friend or coworker through the release of what Lieberman and Long (2018) call the “here and now” neurochemicals which results in “right-brain-to-right-brain” interactions by leading with the right brain through attention and presence, as

has been shown so well by Stan Tatkin, while transitioning from serving the self through the pursuit of happiness to transcending the self through serving others as explicated in the recently published book *The Second Mountain*, and which was the intended goal of Abraham Maslow’s self-actualization construct according to creativity and intelligence expert Scott Barry Kaufman.

This tall order can only happen when we realize that the key to what we provide our clients is in who we are, which taps into the theory of mind processes such as Slade’s (2005) reflective functioning, Dan Siegel’s concept of mindsight (2010), and mentalization, as described by Fonagy, et al., 1991, which are driven by the right prefrontal cortex; rather than what we know, which keeps us stuck in the left brain. My sense is that how we choose to live as mental health professionals, and the “in vivo” role-modeling and coaching that we provide our clients pertaining to how dopamine-rich sociological dynamics might be working against us by keeping people stuck in patterns of avoidance, might get in the way of our client’s ability to “take-in” and make use of the brain-based psychotherapeutic treatments that we are called to provide them. The more we seek to understand these processes and bring them into our awareness as we practice, is how we will avoid “getting in the way” of our client’s ability to make the best use of us - the therapist.

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DAVID VAN NUYS

I recently interviewed Steve Curtis, a young entrepreneur who, among other things, is CEO of EvolveBiologix. He will soon release a life-enhancement product that is designed to monitor the heart in conjunction with a course of guided meditations. Steve's personal story is relevant. He was raised by a single-mom in a small town in British Columbia. He describes himself as an ADHD kid who was curious about everything, but just couldn't sit still, which resulted in him being expelled in the 6th grade. Undaunted, he started his first business at age 19 and sold it for millions after two years. Regardless of his success he also realized that he was lacking interpersonal skills and was suffering from unhealed trauma that produced a lot of psychosomatic symptoms.

At age 24 he was diagnosed with a terminal cancer and given only 2 years left to live. Steve hired an MD, built a research team and traveled the world to develop a cure. From researchers at global expert centers like Yale and Stanford to healers and shamans in far-off jungles, he sought to cure his "incurable" cancer. He couldn't develop a drug fast enough and so directed his attention to trying to produce a "spontaneous remission". He set himself the goal of defying his diagnosis and climbing Everest. Five years later, he had done both. He had gained a deep personal insight into the capacity of the human body to heal without the use of any modern medicine.

EvolveBiologix works in conjunction with an iPhone. The heart monitor provides feedback on heart rate and, more importantly, heart rate variability (HRV). We know the positive correlation between a stronger HRV and a relaxed,

peaceful state both physical and mentally. The meditations help guide users toward desirable states such as gratitude, mindfulness, generosity, and forgiveness.

Before Steve, I had interviewed Dr. Ariel Garten, psychologist and entrepreneur, about her brain-training device, Muse. Muse 2 now measures brain waves via a headband and collects HRV data. Both devices adhere to the notion that the heart is not only a pump, but also a psychological organ. There is considerable scientific research to back that up. HeartMath has been studying HRV for years and both the Muse 2 and the EvolveBiologix products are strongly influenced by HeartMath, which has their own device for measuring HRV called the emWave2, which I first discussed with their chief scientist, Dr. Rollin McCraty, in 2012.

We are used to technology interfaces with the brain, such as EEG and fMRI, but these new technological interfaces with the heart open up new possibilities for people to navigate the stresses of modern life. They not only interrupt damaging biological rhythms, but at the same time improve mental health and well-being. There is much to be excited about with these technical developments and, perhaps, much to be cautious about, but Steve's personal story, and others like it, show that we are entering a time when technology may assist us to stimulate our own "spontaneous remissions" to create better health and well-being.

David Van Nuys, PhD, Founder and Host of Shrink Rap Radio. shrinkrapradio.com

LORI A. RUSSELL-CHAPIN

The counseling field seems to be coming full circle with its wellness, prevention and neu-

rocounseling emphasis. Neurocounseling may be the solidifying component that bridges the brain, body and behaviors, demonstrating how many of our current mental health challenges have physiological underpinnings.

Excellent talk therapy will be even more efficacious when neurocounseling skills of emotional and physiological self-regulation are taught to clients as a first level intervention. Then clients can initiate their personal safety needs and be more developmentally ready and receptive to engage in talk therapy.

Without considering and better understanding the brain and body, helping professionals will not be as effective. How can we problem solve with clients without looking at the brain and body systems that impact our clients? Empowering clients with neuro-informed education offers knowledge that may explain possible answers to certain behaviors. Viewing our system from chemical, electrical and physics properties offers strategies for better client locus of control. Consistently when clients begin practicing self-regulation skills they exclaim, "If I can control my skin temperature, surely I can control other major problems." Understanding how our brain and body work together and what dysregulates our system is a must for the counseling field to grow and thrive.

Lori A. Russell-Chapin, LCPC, ACS, PhD

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LOU COZOLINO

It is encouraging to see the shift of focus that your change of magazine title suggests.

It is important to understand that there is no "neuropsychotherapy" or any specific form of therapy that the neuroscientific research supports over another. All of the major schools of therapy – CBT, psychodynamic, client-centered, DBT, humanistic-existential – help some of the people, some of the time. From a neuroscientific perspective, when any therapy works, it is because the therapist has managed to stimulate plasticity and positive change in a client's brain. And, because neuroscience is now being included into clinical discussions, we are all expected to be fluent in the basics of brain-behavior relationships.

Gone are the days where a narrowly trained therapist armed with a limited view of psychopathology and a few techniques in their "toolbox" can be considered a "state-of-the-art" practitioner. There is a lot of sophisticated psychological theory, relevant research information, and solid integrative thinking that needs to be included in our thinking. Traditional concepts like attachment, trauma, transference, shame, and affect regulation are now all deeply informed by our understanding of evolution, neural development, systemic arousal, epigenetics, and neuroplasticity.

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SHERIF DARWISH

Neuroscience is one of the most exhausting areas in research and one of the most complicated and difficult to understand. The complexity of the human brain, how it is structured and how this structure and function is reflected

on our behavior, personality and choices is a very puzzling field. Do choices vary depending on genetic coding, culture, upbringing or race? Historically, the Milgram experiment for obedience started with the idea that Americans would act differently, when it comes to obedience of orders, compared to how the Germans had acted during the Second World War. However, the experiment proved otherwise. Humans, given certain conditions, can be equally obedient regardless of their race or culture. From this perspective, I wish to emphasize the significance of multi-center research, from different cultures, targeting the understanding of human behavior and linking it with the neuroscience, neurobiology as well as genetic studies.

In developing countries, researchers have many constraints that prevent them from producing sound research that is readily added to international research and science literature. The lack of training on how to design, make and publish research, makes clinicians reluctant to document and organize their work in a way that can be published. From struggling to access medical data bases, to the lack of research support and funding offered from most employment bodies, leads most practitioners – even university professors – to concentrate more on their clinical work rather than research. It is rare to find a body or a person who is adopting a fixed line of research and taking it to further expertise levels. Another major element hindering research, is the accessibility to new technology and statistical analysis tools that would encourage one to do the research that he/she believes will make a difference for mankind.

I appreciate that researchers in developed

countries can face their own difficulties – the cost of research, patient recruitment, very high salaries of researchers and the long time needed due to the scarcity of patients. In a casual conversation with a psychiatrist from Denmark, he said that in the hospital he works in, the average number of appointments in the outpatient clinic is 5 to 7 per day. In Egypt, it is normal to say that one is exposed to more than 30 patients per day. This flow of cases can help with collecting data in a shorter period of time, which can lower the research budget. Developed countries, however, can take advantage of cost saving benefits including out-sourcing and international recruitment; using call centers from countries like Egypt or India in order to reduce the cost of customer service; and take advantage of time zone difference, eg between the UK and Australia, as we see in radiology where case reporting can continue overnight without having to pay overnight working costs.

Where to now? is to help resolve this imbalance and bring many more brains and minds into the world of research. We can start by building an easily accessible database for researchers and practitioners from all over the world. The depth of the expertise, accessibility to patients and the availability of new technologies can open new horizons for partnerships. Such a database would allow researchers from all over the planet to collaborate. Building multi-center research teams from different countries and cultural backgrounds, not to mention patients with variety of cases, will not only add to the strength of research methodology, but will also resolve some of the constraints discussed earlier. Collaboration can be as simple as guidance in how to write a case report, to complex, random controlled multi-center research.

In order for this idea to succeed, we need to overcome many uncertainties and difficulties. Interrupted or lack of communication because of the distance is a major constraint. Forming teams can be a hard job when people know each other, drawing together international teams who do not could be a challenge. I am aware that some of these collaborations have failed, but overcoming these obstacles by unifying research methodology and data collection should help to prevent these problems.

Personally, I find that most of these problems can be solved. The most important element is communication and setting online and personal meetings to discuss every detail. By creating a successful globalization of psychiatric research, we can open the perspectives of research far beyond what we have today. I am confident this will allow us to understand our brain, behavior and personalities better than ever before.

Dr. Sherif Darwish Abdalla

STAN TATKIN

Psychotherapy is currently burdened with fragmentation of models, theories, and interventions. Psychotherapy requires an integrative framework rooted in the expanding sciences of developmental psychology, neurobiology, medicine, and medical illness.

The future of our field rests largely on the integration of multiple disciplines into a poly-theoretical approach to human suffering. With the multitude of current brands of therapeutic approaches, I would like to see more melding of ideas and interventions, particular-

ly those that prove to work. This would require thought leaders to work together more collaboratively. John Gottman once said, and I agree with him, that the field of psychology must now keep up with, and even collaborate with, the hard sciences. A single psychological theory alone, I'm paraphrasing him here, is no longer sufficient for understanding and treating human mental health problems.

Psychotherapists (and remember, I am one) have long been reputed to be slow to change, preferring instead to cling to tools and methodologies that may be as archaic as the buggywhip. For instance, not that long ago, many therapists would resist using an answering machine over a service, an electronic organizer over a paper one, a computer over a pad of paper, an online scheduler over a paper calendar. I struggle today to get even my advanced students to incorporate video recording and playback as part of their practice with couples.

John Gottman was seminal in waking psychotherapists up to the fact that many of our precious techniques had little or no effect on therapeutic change. We didn't want to know the truth or be critiqued by those outside of our clinical walls. That has all been changing as the last few decades have seen considerable shifts in psychoanalysis, behavioral medicine, and cognitive science as affective neuroscience, infant attachment, arousal regulation theory, and the science of somatics are showing their influences on these institutions. Several catalysts may be credited with such a shift, such as Antonio Damasio, Jack Panksepp, Robert Sapolsky, Allan Schore, and Stephen Porges, to name just a small few.

In my own experience as developer of a psychobiological approach to couple thera-

py (PACT), I have been able to speak to many professional organizations that, perhaps only a short time ago, would have taken no interest in my work. Doors are opening.

Despite the new integration movement, there are many challenges. The field of psychotherapy is still not like the sciences. It remains stuck in the past, in a tribal-like, commercialized product-oriented marketeering of ideas that strive to survive the ever onslaught of newly minted psychotherapy approaches that largely re-invent the wheel, but just call it something else. I would like to see us become the scientists we already are by coming together a bit more; advance our field by learning from each other instead of remaining siloed in our own approaches. Perhaps thinktanks could emerge as a way to consolidate theories, methodologies, techniques, and interventions. So many of our theories and approaches could benefit from regular updates and revisions and even become more centralized so as to benefit the field as a whole and to turn out better trained clinicians. Of course, this is easy to say and extremely difficult to accomplish. Still, it starts with a wish, a dream, of making psychotherapy the science it can and will be.

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PAT OGDEN

Diversity and culture in our professional practice and personal life.

In 2014, distressed by the hate crimes taking place in the US, I suggested that we choose the theme of diversity and culture for our IPNB (Interpersonal Neurobiology) conference, not

realizing that delving into this topic would catalyze a profoundly disturbing, yet rewarding, ongoing learning journey for me and my organization, the Sensorimotor Psychotherapy Institute. Not too long ago, I naively thought I had a handle on diversity issues. In the 1960s, I started my career as the only white teacher in an all-black public school, then taught at the first integrated classroom in Louisville, KY. I passionately participated in the Civil Rights Movement of that era. My family is mixed race, but none of this experience safeguarded me from implicit bias or structural racism. In preparing for the conference on culture, I had to come to terms with the fact that I had limited awareness of white privilege, what it means to be a member of the dominant culture, privilege/oppression dynamics, or the implicit racial bias that is inherent in the US, in the world, and in my profession. Here are a just a few of the sobering highlights of what I am learning:

- Many of the maps and models popular in our IPNB community, including those of Sensorimotor Psychotherapy, are predominantly Eurocentric
- A focus on these maps and models convey an unspoken, implicit conception that western culture and theory is the “norm”, and is better than other cultures.
- Western developmental models value an individual-centric rather than socio-centric culture, emphasize autonomy and differentiation over mutuality and interdependence, and value a solitary sense of self rather than a group sense of self.

- In focusing only on European culture, the accomplishments and contributions of other cultures are diminished, ignored, dismissed, or even pathologized (personal communication Shelly Harrell, 2018)
- Child development models I have learned and taught are Eurocentric, and my search for a model that is multicultural and inclusive has not been productive.
- As a white person of privilege, I got a head start on success, and I enjoy the many advantages that I did not earn, but was unfairly given simply because I am white.
- As a white person of privilege, I am not faced with, and therefore often not aware of, the constant disadvantages, micro-aggressions, implicit bias and institutionalized racism that marginalized people face every day, personally, professionally, in the media, and in political discourse—and in my, and our, professional contributions.
- Commitment to personal awareness and acknowledgement of my own implicit bias (which is inevitable given exposure to the injustices, past and present, small and large, that are part of the fabric of our society and our world) comes before knowledge, and knowledge before skill.

What I have learned, and continue to learn, does not make implicit bias go away. I often get called out on my own ignorance and consequent micro-aggressions and I am grateful for it. For example, a person of color informed me recently that is it offensive to use a beckon-

ing motion in my work as a body psychotherapist without acknowledging how demeaning this gesture can be to colonized people who were beckoned by their oppressors to serve them. I try to be humble and welcome such discussions, and not fall back on white fragility with excuses like, “Oh but I didn’t mean it like that.” I need to learn from such feedback because implicit bias is pervasive and my own lack of awareness can be damaging.

But, with more knowledge and awareness come more concerns. I have more questions than answers, but I strongly believe that, as a member of the dominant culture, I have the moral, personal and social responsibility to confront racist ideology in myself and educate myself so that I can begin to hold the space for these difficult conversations and, with my colleagues, begin to integrate an anti-racism, anti-oppression lens in the business practices and programs of the Sensorimotor Psychotherapy institute. It is a daunting endeavor, and we are just at the beginning. Unveiling the many inevitable and far reaching tendrils of racism and implicit bias is not an end-point, but an ongoing process that requires challenging oppression and racism in all its forms--personal, interpersonal, systemic, and cultural. I think grappling with these issues in our work and teachings is an essential next step for our predominantly white IPNB community. By doing so, we can become white allies to people of color, show up for social justice, and motivate others through our example.

Pat Ogden, PhD, is a pioneer in somatic psychology and both Founder and Education Director of Sensorimotor Psychotherapy Institute®, an internationally recognized school specializing in somatic-cognitive approaches for the treatment of posttraumatic stress disorder and attachment disturbances.

MICHAEL YAPKO

There are many, many issues I have concern about in today's complex world and prioritizing which one to focus on at a given time is challenging, to say the least. But I am a clinician, one who has spent my professional life focusing most intently on treating the disorder of Major Depression or, more simply, depression. In the course of my professional lifetime, depression has gone from being one of the least understood to one of the best understood disorders that psychotherapists are asked to treat. Yet, most of the people who suffer depression don't seek help for a variety of reasons, and so tend to suffer in silence. It is not just the individual sufferers I'm concerned about; their depression affects others as well. For example, the child of a depressed parent is anywhere from three to six times more likely to develop depression as well and not because of genetics, as we have learned.

The World Health Organization (WHO) recently declared depression the number one cause of human suffering and disability around the world. Despite having good treatments available, and even good preventive strategies that could be effectively implemented if governments were paying attention, the problem keeps growing.

My greatest disappointment is that in the enthusiastic rise of interest in brain science, a willingness to non-critically call far too many human experiences a product of a "brain disease" has become pervasive. In the case of depression, therefore, the use of antidepressants has become the predominant form of treatment. I view drug treatment, when it is the sole form of intervention, as an unfortunate under-

treatment. The evidence has grown that the neuroscience of depression is vastly overstated as causal while the evidence has grown even greater that, for most (not all) people, depression's risk factors and its spread are socially induced. In the case of depression, blaming biology leads to attempted solutions that not only won't work, but can't work on the larger social levels we need to address. No amount of antidepressant medication is going to cure domestic violence, curtail bullying, end racism, or resolve any of the kinds of social problems that inflict pain and drain the joy out of life. Nor can these drugs teach people the coping skills they need to develop if they are going to manage these challenges well. Neurobiology is simply the wrong lens through which to see depression.

I hope all those with a genuine interest in the science of psychotherapy will help advocate for a stronger message to the many millions who are suffering that good psychotherapy – and good education – can go a long way towards stemming the rising tide of depression in one's life.

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TERRY MARKS-TARLOW

From my perspective, the most exciting frontier in neuroscience today involves hyperscanning—the simultaneous measurement of two brains. This technology is in its infancy and is still rather crude, especially when clunky fMRI machines are used. But, alternative, less invasive methods, such as EEG and near infrared spectroscopy (NIRS) help to move

us toward more and more ecologically valid contexts. A two-person neurobiology scanner that is capable of measuring two brains during psychotherapy is around the corner. I predict that we will see an incredible level of neural sync between psychotherapist and patient. High levels of sync even among strangers are already apparent in research that has been emerging from Hassan's and Dumas' labs. In the case of Hassan's protocol of a story told from speaker to listener, the level of neural sync extends well beyond areas of the brain needed for speech production and reception. Furthermore, from Dumas' work, we can see that the more intimate the relationship, such as between a mother and her own child, the higher the degree of sync. In cases of ongoing psychotherapy, I predict that neural sync will increase as the relationship deepens, and reach peak levels during high mutual arousal and key moments of meeting.

We humans possess social brains that become softly assembled during development through open wiring and exposure to the productions of other brains. Hyperscanning reveals hitherto invisible levels of sociality. Interestingly, when it comes to synchronized brain waves, communication between two different brains does not differ significantly from communication between different areas of a single brain. Implications here are enormous! This means that at the neural level of observation, the boundaries of skull and body appear irrelevant. What better way to continue healing Descartian splits between mind/brain, self/other, and inner/outer. My own most recent work has been to develop a fractal epistemology which offers a framework for understanding nature at large, including human nature, based on frac-

tal geometry. Some features of the fractal epistemology include paradoxical boundaries that are simultaneously open and closed, as well as finitely bounded, yet infinitely deep. Another feature is observer-dependent reality, for what one sees not only depends upon the scale of observation, but also moves dynamically with the perspective of the observer. Since fractal geometry, rather than Euclidean geometry, is the geometry of nature, and all of these principles hold for nature at large, why wouldn't they also hold for human nature as well? In the end, my hope is to usher in a complete paradigm. As we move from a linear, reductionist view towards a nonlinear, holistic perspective, this will bring what is on the periphery into center focus. It will also help us better cherish that which is unique, irregular, and recursively enfolded into larger and larger wholes.

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JEFFREY PO

Joshua Eaton, DD Buddhist Studies (Harvard), BA Psych (West Georgia) laments, "The popularity of the "mindfulness" movement had launched a constellation of publications, gurus, life coaches and conferences that make up the 'mindfulness movement'. Its proponents tout yoga, mindfulness and meditation as a panacea good for everything, from managing stress and increasing longevity to turning around poor urban schools and establishing world peace." A somewhat similar echo came from Achintya Idam, a Kundalini guru who proclaims, "Medi-

tation and spirituality have become a comedy of errors, a tragedy of logic, a tragedy of errors, or a comedy of logic. 99.99999% of the so-called spiritual people are deluded about spirituality and meditation.”

Undeniably, although those statements seem to ring warning bells about the topic of “mindfulness” and “meditation” still it cannot be argued that those practices are utterly futile and useless. Researches in neuroscience have documented the many health benefits that can result from serious and dedicated practices of “mindfulness” and “meditation”. Admittedly, western techniques of “mindfulness” and “meditation” can be useful management and human resource tools utilised within the modern corporate organisations. They help sharpen focusing and concentration skills. Still there are reports of practitioners feeling “unfulfilled”. This is because they often neglect to provide the heightening of a person’s ability to reflect and contemplate towards the higher purpose of living, relationship, working and of life itself.

But is that all there is to it?

Until the recent explosion of the “mindfulness” and “meditation” cult that grew in the west, it would be useful to know that these western terms have been translated and interpreted from the original Sanskrit – *smṛti* – or Pali – *sati* – as terms that are conveniently drawn from western Christian perspectives. Neither *smṛti* nor *sati* connote or infer a conscious, objective mental activity. Hence instructing someone to “be mindful of the in-breath and out-breath” would convey an inaccurate rendering of the term. The accepted traditional translation of those term simply means “recalling to memory” – a subconscious mental activity. TThe sages, rishis and seers

of India did not immerse themselves in deep meditative practices of “trying to empty their mind and relax”. Rather the term used was “*bhavana*” – a mental culture that includes the adoption of high moral and ethical standards in one’s behaviour, periods of deep contemplation, reflection and transformation.

The topic and practices of “mindfulness” and “meditation” has, today, probably been oversold and undoubtedly commercialised. They have been neatly packaged to suit the insatiable appetite of the consumer industry. Nonetheless there is now a clamour to restore the term “mindfulness” and “meditation” to its proper domain and place them as methodologies in achieving inner-self transformational, moral and behavioural cultivation rather than merely a tool for mental and physical juggleries, relaxation, medical therapy and social interactions/occasions. The reductionist and secular approach by western society has diluted the fundamental structures of “mindfulness” and “meditation” that had originally meant to offer the practitioner the means for self-exploration into the inner psyche of oneself and the integrative relationship that one connects to the cosmos. Throughout the centuries, “mindful” (not “mindfulness”) meditative practices have been taught to fully integrate the person in a holistic manner that finally usher practitioners to a sense of self-realisation and total well-being because the nature of reality has been understood and experienced. This is where healing takes place. This is how “mindfulness” and “meditation” is taken as a spiritual and not a therapy path.

Jeffrey Po PhD, (Couns. Psych), Dipl. Buddhist Studies, Certified Meditation Instructor, Spiritual Counsellor, Pastoral Thanatologist.

MATTHEW DAHLITZ

When Richard asked me to write a few paragraphs addressing the question “Where to now?”, for me, it begged the question “Where have we been?”. Not that I want to make this about the past, but a brief glance backwards can inform forward direction. When I glance backwards, I see some wondrous advances in our detailed knowledge of the workings of the brain, and indeed the whole nervous system. I see technology helping us take leaps and bounds in our knowledge of specific biological functions and specific cause and effects in our neurobiology - making connections we didn’t realise before. But, I also see an overwhelming proliferation of theoretical camps and schools of thought and practice that have done as much to divide us as they have done to heal us. I see people hunkering down into a very accurate, yet narrow field of view. I see a fracturing of disciplines in an overwhelm of data, and all the camps being constricted by bureaucratic processes. In neuroscience terms, I see the left-hemisphere’s dominance, which has both catapulted us forward technologically, but hindered us in many other ways as well.

In looking around, and looking forward, I see this is all changing, and changing rapidly. I see a “Renaissance”. But unlike the Renaissance, that followed the dark and middle ages around 1500 AD, we are coming out of one sort of ‘enlightenment’, that of technology, into an age of rediscovering the power of interdisciplinary synergy. We are at the dawn of an age of “integrative” knowledge and practice, and the wisdom of the implicit, intuitive right-hemisphere. The “Renaissance Man” may soon be back, gleaning from the hyper-specialists, yet embracing a broader perspective. We are rec-

ognising them now and giving them our attention. They are the polymaths who are making much needed connections and integrations across disciplines.

If this is so, then what does it mean for psychotherapy? I believe it means that we will embrace a more holistic and open view of the human condition, using the tools of knowledge and technology but not led by them. Will we be “led” by a more intuitive, right-hemispheric sensibility? I believe we will see a shift from mandated “evidence-based psychotherapy” to a “scientifically informed” psychotherapy. Remember that the left-hemisphere is the expert at the scientific method, with all its decontextualized, mechanical, linear reasoning and love of abstracted data which is all backed up by its superior grasp of language. Effective therapy based on experience and circumstantial evidence is often regarded as suspect, at best, and dangerous pseudoscience at worst. Encouragingly, researchers and thinkers like Bruce Ecker, Allan Schore, and Dan Siegel are making great headway in opening up a broader perspective and we are seeing the science providing support for what was once considered ambiguous and therefore disqualified from receiving the “evidence-base” stamp of approval. In discussions with Richard Hill, Terry Marks-Tarlow, and others about complex non-linear systems and quantum physics, it seems the coming renaissance that I’m imagining is the only way we are going to develop a better psychotherapy theory and practice.

So as John Arden would say, this is the 21st Century and as therapists we have to know about a broad number of topics that impact our mental well-being for us to be effective. Welcome to the 21st Century Renaissance!

RITA PRINCI-HUBBARD

The Science of Psychotherapy extends itself beyond the therapy room to many domains as it provides a comprehensive explanation of how we work! In my view, it aligns with the growing area of research and practice in interpersonal neurobiology.

In particular, when working with children, implementing this model with parents greatly increases knowledge about what's happening in the brain, physically, socially and emotionally not only during developmental stages but also during times of emotional dysregulation. This approach then enables strategies to be utilised at home based on a scientific understanding to increase well-being rather than solely focusing on modifying behavior in order to achieve compliance.

In the educational domain, there is growing interest in understanding the science to assist with informing pedagogical approaches in the classroom. Rather than following the traditional fear-based approach, implementing the science of psychotherapy in the classroom setting provides an explanation about the critical benefits of focusing on wellness, then performance. In particular, learning that takes place under stressful conditions results in performance based on fear, whereas learning that occurs in supportive and thriving environments provides a platform for children to reach their full potential – emotionally, socially, physically and academic. The heightened anxiety a student feels when they fail, suffer ridicule (real or perceived), or find themselves in a fearful situation causes a cascade of stress hormones to flow through the limbic system, which can impede a student's learning. As environmental

sensory information is received and processed, influential memory systems and behaviours are developed according to the fulfillment or the violation of four basic psychological needs: 1. the need for a sense of belonging and attachment, 2. the need for control, 3. the need for pleasure as opposed to hostile or fearful situations, and 4. the need for healthy self-esteem.

Therefore, the science of psychotherapy, in my view, brings together all aspects of understanding the child by including neuroscience, psychology, biology, and the importance of social connections to improve well-being then focus on performance. Although the term “the Science of Psychotherapy” emphasizes therapy, when understanding the principles within various domains, in particular, the educational setting, it then provides educators with scientific understanding about why the child is reacting. This understanding then enables strategies guided by psychotherapy to assist the educator to connect and engage with the child. By attuning themselves, they can be in an informed position to attune with the child to provide a safe and nurturing environment for the child to learn, emotionally, socially and academically to their full potential.

Rita Princi-Hubbard, B.Psych(Hons), M.Psych(Clin), MAPS, FCCLP, MIAAN: Princi Consulting & The Institute for Neuroscience and Education.

JEFFREY K. ZEIG

In psychotherapy, and even in our personal communications, sometimes the goal is to elicit realization of a concept that leads to a change in state that can lead to a change to a more adaptive identity.

Communication is both evocative and informative. The simple informative statement, "Here is some useful wood," seems to have a fundamental meaning, but it means one thing to a carpenter, another to a Boy Scout, and something different again to a woodcarver. We are continuously processing and interpreting the evocative level of communication – the unique inferences created by elements of communication other than basic information.

We can expand the ways in which we communicate and facilitate effective therapy by learning in evocative communication. How can we use evocative orientations in psychotherapy and personal communication to elicit a change in state? The answer can be found in art.

Art is evocative communication. When Picasso painted his masterpiece, *Guernica*, he was not directly saying that war is hell. *Guernica* creates an evocative experience where the viewer realizes the horrors of war. In *The Godfather*, Francis Ford Coppola did not say that Michael Corleone was a hypocrite. He mixed a scene of Corleone at a baptism with violent scenes of Corleone taking revenge on his enemies. The meaning of these contrasting scenes evoked our own sense that Corleone lived a hypocritical life. Picasso, and Coppola use their medium in unusual and unexpected ways to elicit an experiential realization. Therapists can do the same thing. They do not need to verbally communicate a clear and concise message; they can take artistic license. They can enter with delight and exit with wisdom.

When we understand the evocative "grammar" of art, we can apply it in psychotherapy. Artistic communication, which is evocative, conceptual, and experiential, activates older

brain centers, including the limbic system. Animals use limbic communication that does not need to be mediated by consciousness. They have an instinct of purpose.

Humans also have instincts. Human problems have a reflexive quality that involves non-conscious processes. Clients often emphasize the automaticity of the problem: I walked onto the airplane and I just panicked. Or, he talked about going on vacation, and I just got angry. These are limbic responses, rather than cognitive, so using evocative communication is a logical choice. Address the problem at the level of experience at which the problem is generated.

Consider how filmmakers use of music and sound effects to evoke emotion. Therapists can also use sound and movement to better communicate. For example, if a patient says, "I'm depressed," I might respond, "You're feeling ough." My goal is to empathize multidimensionally. Similarly, I might also use a gesture or posture to communicate empathy. If a patient says, "I'm not motivated," I might reply, "It's like you're feeling..." and then suddenly drop both my hands into my lap. Or, I might say, "It's like you're feeling..." and then slump back in my chair.

Certainly, direct intervention can be effective, but evocative communication is a powerful alternative when it does not work. Evocative communication is the ground from which emotional response springs. Therapists will benefit from evocative training, because it enhances their capacity to enter the beneficial therapist states, including utilization, orienting toward, and being strategic. Therapists will also benefit from being trained to evocatively communicate

to enhance the opportunity and possibility for the client to change state in a way that is deeper than mere cognitive understanding.

Excerpted from *Evocation* available from The Erickson Foundation Press, www.erickson-foundation.org.

ISABELLE ONG

In today's world, we are witnessing a remarkable growth and extension in the frontiers of knowledge in psychotherapy through neuroscience. Both researchers and mental health experts have attempted to shed light on the inner workings of the brain to explain how psychotherapy works. Increasingly, we are also seeing holistic therapies such as mindfulness and yoga heavily backed with neuroscience explanations to justify their use and place in psychotherapy.

In the next few decades, the melding of neuroscience and psychotherapy may be the norm rather than the exception. As experts and researchers in the field bring both new, current and existing therapeutic approaches and strategies into the realm, neuroscience language may be prevalent and even necessary in their application and enhancement. Not only will this integration better define our craft and work, clients can benefit from better understanding how psychotherapy works from a brain health and behavioral perspective. It is my hope that therapies considered more abstract in nature such as holistic therapies and expressive art therapies that are so critical to the healing and well-being of clients, continue to earn greater credibility and authority in the field of psychotherapy through

advances in neuroscience. I am looking forward to the day we can finally articulate the whole heart-brain-body connection and their valuable contributions in psychotherapy.

Isabelle Ong, Assistant Professor Psychological Studies. National Institute of Education, Singapore.

JOHN ARDEN

The causes and remedies to psychological disorders have long been the subject of debate and ongoing research. Every few years a seemingly new psychotherapeutic approach surges in popularity, only to fade away later. Recently several lines of converging research have identified the wide variety of interactive factors underlying many health and mental health problems. My recent book suggests an integrated vision, and model, of psychotherapy that includes psychoneuroimmunology and epigenetics, combining it with the neuroscience of emotional, interpersonal, cognitive dynamics, with psychotherapeutic approaches. This will promote a sea change in how we conceptualize mental health problems and their solutions.

There are multidirectional causal relationships between stress, depression, anxiety, the immune system, and gene expression. The interaction between all these factors has been illuminated by studies examining the effects of life style factors on the incidence of health and psychological problems. There are significant relationships between immune system function, stress, insecure attachment, anxiety, depression, poor nutrition, bad quality sleep, physical inactivity, and neurophysiological dysregulation. For example, insecure attachment, deprivation, and child abuse contribute to anxiety and depression in far more extensive

ways then was once believed. Some of these dysregulating effects includes the epigenetic down regulation of the cortisol receptors, the stress induced activation of the sympathetic nervous system, and the breakdown of the neuroendocrine system. The excessive release of cortisol can result in the eventual development of hypocortisolism with the simultaneous spikes in epinephrine and norepinephrine which in turn, stimulate the release of proteins called pro-inflammatory cytokines. Chronically high levels of these cytokines adversely affect the central nervous system, resulting in autoimmune diseases, as well as physiological symptoms including lethargy, achiness, and disturbances in mood, cognition, and promoting withdrawal behaviors that contribute to major depression and anxiety. This complex range of health conditions effects millions of people who seek psychotherapy. Building on research in neuroscience, epigenetics, and psychoneuroimmunology, we can better understand how we thrive when nurtured, or develop psychological disorders when we are not. The quality of our relationships, particularly those with family in our formative years, have a strong link to our psychological state and our mental operating networks.

Given that psychotherapy will increasingly address health factors, with epigenetics and psychoneuroimmunology we can integrate these fields of research that had previously been compartmentalized into a robust vision of psychotherapy. Psychotherapy in the twenty-first century could be renamed "behavioral health," because self-care behaviors have major effects on the immune system, the brain, and the body in general. These interactions have a profound effect on mental health. When we apply this

approach to psychological disorders such as anxiety and depression it will bring the integrative model to life.

John Arden, PhD, ABPP is the Author of 15 books. His new book is entitled *Mind-Brain-Gene: Toward the Integration of Psychotherapy*. He has presented in all US States and 27 countries. You can connect with John on Facebook.

drjohnarden.com.

FABIO SINIBALDI

We are living such a significant moment in time for psychotherapy and the science of change in general, that we could even call it a Renaissance. In total alignment with this publication's new title - *The Science of Psychotherapy* - we can finally define psychotherapy as a fully-fledged scientific subject. Previously, we could only speculate as to the internal processes, as to what happens when we "write" a (traumatic or learning) memory, when we "learn" that something frightens us or how to "organize" a mental and physical response to a stressful event.

Different disciplines have now enabled us to study the fine mechanisms at the heart of these processes. Epigenetics, for example, helps us understand that intergenerational transmission can take place biologically even without mental and cultural factors. For example, culinary greed can be inherited from grandparents that lived through famine, without ever meeting them or knowing their story. On the other hand, by intervening in these processes through lifestyle changes and specific psychophysical techniques, it is possible to develop the neurological framework required to change mental attitudes that would otherwise be very

difficult to alter relying only on reasoning or will power.

The study of brain networks is similarly enabling us to take giant leaps forwards in understanding how to regulate states of hypervigilance, anxiety or stress. Thanks to information about the salience network, for example, we have been able to understand the central role of the insula (and its synergy with the amygdala) in emotional regulation and the feeling of self-control. Here, careful use of the body plays a key role. For example, the insula is sensitive to constant recalibration, so the use of slow movements and, in what is called the negative phase, the use of isometric contractions or of so-called 'neuro-hacking' by providing widely different sensations such as cold and hot at the same time, will enable a return to a physiological state that is better able to manage emotional response and self-regulation. These are practical exercises that patients find immediately effective. When we evaluate them in our research, they show significant change at perception level (on self-evaluation scales) and via instrumental measurement (heart rate variability, cortisol levels and other biomarkers).

Today psychotherapy is no longer a borderline science. It is a science that can interact and contribute in the same way as medicine, social science and education. The role of the psychologist and psychotherapist is ever more critical, even in daily life. It is important, however, that psychotherapy is not limited to the acquisition of new knowledge and tools but seeks to understand the effectiveness of processes in order to maximise them and develop ever more effective systems that can also be applied to daily life. One of the most satisfying things for me

is to see therapists leave our conferences and training courses with a greater sense of mastery, but also with the understanding that they play a solid and effective role because they have learnt new techniques and the processes that underly them. This way, they are able to intervene in any situation, even when it is not precisely the one studied, and they are able to take advantage of different aspects of the patient's daily life, turning on a transformative experience. We teach this through a process that we call Human Experience Design that can be explored at our website and in our training programs.

Fabio Sinibaldi, MBPsS, PsyD. Founder and Director at Real Way of Life - Institute for Research & Development (UK - IT). President of the Association for Integrative Sciences (Worldwide). Director of Master in Applied Integrative Sciences.

KAREN FERRY

Widening the audience even further?

As therapists, we bandage, mend and heal, and we do it well (mostly!), but are we are merely bandaging a swelling problem? Could The Science of Psychotherapy also extend its scope so that it not only targets therapists, but also become a practical resource for professionals in schools, day care centres, and amongst parent groups etc?

The Science of Psychotherapy should still do what does best - provide valuable, informative, cutting edge articles to the global network of therapists - but add another 'arm', if you like, that presents podcasts, magazine articles, blogs, brochures, Facebook articles and posts to assist and inform those at the 'coalface' of where psychopathological traumas actually be-

gin. There are many people who may not understand our psychology jargon, but who would like to learn more and be more “psychotherapeutically” effective. I believe there is scope to include the home and the school in this widened audience.

It fascinates me that we have Workplace Health and Safety brochures, booklets, videos and magazine articles to prevent physical injury in the workplace or the school yard or the day care centre, but we have much less information available for preventing injury to a child’s psychological well-being. I feel we need to move more towards being a ‘preventative’ measure rather than a ‘bandage’ or ‘healing’ resource, which seems to be what many psychology/psychotherapy articles are about.

I have the privilege of working with dysfunctional families and watch them transform their discipline methods, their interactions and care of each family member after obtaining knowledge and understanding around the developing brain, the importance of safe attachments and value for each family member in order for them to thrive. They all ask if there is material out there they can read. There is no doubt that there are many articles and blogs on ‘brain’ type approaches to parenting and education already out there, but none, to my knowledge, has the specific neuropsychotherapy approach.

The parent “arena” might be hard to infiltrate. Can we also produce articles that might be interesting to and re-published in popular magazines? Could we help create the opportunity for one of The Science of Psychotherapy community to write a popular magazine column? Will some of our more “lay person” oriented articles find wider exposure on social

media? Go “viral”! Can we become a resource that will appear in a Google searches for practical, sound and researched information for mental wellbeing from parents, teachers, and child care professionals? A future direction I suggest, is one where we can not only talk and write about help when there is a need, but also how to prevent before there is a need? I hope we can do this by connecting with a much wider audience, and especially those who interact with our children every day.

Karen Ferry is a neuropsychologist, counsellor, and educator with experience in primary, secondary and tertiary level classrooms.

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RICHARD HILL

There is an underlying principle to the shift that is represented by the name-change of this magazine. We are shifting our attention from a specific neuroscientific discipline to an inclusive and integrative engagement with a whole grab bag of scientific knowledge, information and practical experience. Our current problem lies in that we have been taught to think the wrong way. We have become overly entrained with the idea that we live in a predictable world that can be analysed to produce predictable outcomes. This misinterpretation of Newtonian physics, where fundamentals were described about the movement of matter, the effect of inertia in movement and the relationship between force, mass and acceleration has led many to believe they can control the world. The power of mathematics to create predictable outcomes based on these and other “rules” of motion, have enabled both amazing things like space travel and also, the miscomprehension that life can be simple and predictable if you

just do things in a certain way.

What we have learned is that very small changes in circumstances at the beginning and/or during an experience can have wildly unpredictable results and sometimes very little effect at all. The outcome can be confusing and surprising. Although that description is a little simplistic, this is the experiential reality that we know to be true which is better explained by Complexity Theory than the unrealistic safety of a predictable, linear, causal world. Rather than predictability, the “real world” is much more about possibility and the emergence of qualities and quantities from a self-organizing “mixing together” of all the elements involved. The exciting thing about a complex system is that it is sometimes possible to individuate, or differentiate, single elements and explore them independently of the emergent “thing” they are a part of creating. It is possible to examine the carburettor of a car, or the liver of person or the leaf of a tree. The value of this was described most eloquently by one of the early thinkers in thermodynamics, complexity and chaos theory, Ilya Prigogine (1917-2003), “...differentiation (enables)... further processes that would be impossible in an undifferentiated medium... to manifest its potentialities...” The key, how-

ever, is not to hold that element out of the system, as we do all too often with differentiated therapeutic practices and academic disciplines. It is time to return these isolated “silos” into the complex system of life – so that we can see what happens.

My suggestion as to the way forward is to encourage and engage our curiosity, not only as an enquiring state of mind, but also as a state of being that is always searching for the personal meanings and the possibilities that have yet to be realised. The real beauty of what we see on the surface, the emergent properties, is that it is almost certainly just the tip of an iceberg of contributing elements that have led to the emergence something obvious. This is why a symptom is not the problem to be fixed, but an indicator of something else beneath and within. Everything is something, but even more exciting is that everything is also potentially composed of other things, something more and full of unrealised potential. So, where to now? I suggest that we move toward and beyond this growing edge of possibility; and that we re-integrate what we know, what we feel and who we are as living beings. Who knows what will happen? I, for one, am excited to find out.