

Power Therapies and possible threats to the science of psychology and psychiatry

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Objective: Advocates of new therapies frequently make bold claims regarding therapeutic effectiveness, particularly in response to disorders which have been traditionally treatment-refractory. This paper reviews a collection of new therapies collectively self-termed 'The Power Therapies', outlining their proposed procedures and the evidence for and against their use. These therapies are then put to the test for pseudoscientific practice.

Method: Therapies were included which self-describe themselves as 'Power Therapies'. Published work searches were conducted on each therapy using Medline and PsychInfo databases for randomized controlled trials assessing their efficacy, except for the case of Eye Movement Desensitization and Reprocessing (EMDR). Eye Movement Desensitization and Reprocessing has more randomized controlled studies conducted on its efficacy than any other treatment for trauma and thus, previous meta-analyses were evaluated.

Results and conclusions: It is concluded that these new therapies have offered no new scientifically valid theories of action, show only non-specific efficacy, show no evidence that they offer substantive improvements to extant psychiatric care, yet display many characteristics consistent with pseudoscience.

Key words: pseudoscience, PTSD, social influence, trauma, treatment.

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In 1975 Bandler and Grinder [1] published the first of their two volumes on Neuro Linguistic Programming (NLP). Their book was aptly entitled *The Structure of Magic* and in it they outlined a revolutionary new method for assessing, communicating with and treating patients. The basic premise was that people are influenced by internal 'maps' of information which they gather and organize visually, aurally or kinaesthetically. It was claimed that the trained consultant could identify the method in which the information was stored by eye-gaze patterns, posture, tone of voice and language patterns. It was further claimed that this knowledge facilitated communication during therapy to effect change (e.g. a kinaesthetic representational system would be more amenable to change through the use of 'feeling' words during therapy). At the

time of its introduction it was heralded as a breakthrough in therapy and advertisements for training workshops, videos and books soon began to appear in trade magazines. The workshops provided certification as an NLP practitioner, advanced workshops led to the title of Master Practitioner and one could even be certified as an NLP trainer. However, by the late 1980s a host of controlled trials had shed such a poor light on the practice, and those promoting the intervention made such extreme and changeable claims, that researchers began to question the wisdom of researching the area further and even suggested that NLP was an untestable theory [2].

I refer to NLP here not to target the practice for further denigration, but to hold it up as an early example of what some call an 'Alphabet Therapy' and others refer to as a 'Power Therapy'. To emphasize the issue of fads in psychotherapy what I aim to show is a cycle of business behaviour in our profession. Indeed, one practice within NLP is a technique called 'Visual-Kinaesthetic Dissociation' (VKD) and this has subsequently become one of the 'Power Therapies' in its own right.

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The Power Therapies: healers, sham or spin-doctors?

The term 'Power Therapies' arose from the coming together of various therapy advocates on the Traumatic-Stress Forum email list founded by Professor Charles Figley in March 1994. The declared aims of the Traumatic-Stress Forum are: 'Our most immediate concern is seeking the most powerful, painless and efficient method for eliminating or at least containing the unwanted consequences of traumatic events' [3]. However, in chasing these worthy goals, advocates of new therapies made unusual and unsubstantiated claims of 100% success rates and one-session-cures using their particular brand of therapy. Each of the therapies had slightly different methods. Some used tapping of 'energy meridians', some made people move their eyes backwards and forwards, some relied upon biofeedback-assisted 'dianetics' and some were 'so powerful' that even a small description of the protocol was prohibited without attending their rather expensive workshops. In testament to evolutionary processes, with each passing month the Traumatic-Stress Forum claims became more outrageous in a effort to overshadow the opposition, until a general truce was called under the shared banner of 'The Power Therapies'. It is claimed that these 'Power Therapies' are at the cutting-edge of psychiatry and psychology and that they are so termed because of their efficiency and efficacy being superior to traditional treatments. Sceptics refer to these treatments as the 'Alphabet Therapies', arguing that their major commonality is the use of acronyms and outlandish and unsubstantiated claims.

By 2004 the leading lights under the Power Therapy banner were Eye Movement Desensitization and Reprocessing (EMDR; [4]), Thought Field Therapy (TFT; [5]), Emotion Freedom Techniques (EFT; [6]), Traumatic Incident Reduction (TIR; [7,8]), the Tapas Acupressure Technique (TAT; [9]) and, of course, VKD [10]. A brief summary of each strategy is given here: the origins of the therapy, their claims and a very brief sum-up regarding the evidence for their use. I will leave EMDR to the last because a more in-depth review of this technique (which has more research studies evaluating it than any other technique in the treatment of trauma) is instructive regarding the scientific status and business practices of all the Power/Alphabet Therapies.

Thought Field Therapy [5]

Originally called the '5-minute Phobia Cure' and sold via infomercial advertising, this technique relies on tapping various energy meridians in a specific order for each

problem (called 'algorithms'), while imagining the feared stimulus. It is claimed that this procedure realigns the body's 'control system for the disturbing emotions' ([11], p.1154). Under this system there are 14 meridians/vessels which lead to approximately 87 billion possible tapping routine combinations. The originator of the technique claims that heart rate variability (HRV: the degree of fluctuation between heart beats) is a valid measure of psychotherapy and has presented various data in an effort to support his claims of TFT efficacy [12]. These data were presented in a special issue of the *Journal of Clinical Psychology* where the editor allowed seven unreviewed papers on TFT to be published next to seven critiques of the articles. The special issue makes for an interesting, and at times alarming, read. In effect, the evidence forwarded for TFT was predominantly anecdotal and the scientific method usually underlying experimental investigation was frequently misunderstood [13–15]. In reviewing Callahan's evidence in this special issue McNally [16] stated that he was reminded of Tertullian's motto: *Credo quia absurdum est* (I believe because it is absurd). Training in TFT ('Algorithm Level Training', 'Diagnostic Level Training Steps A, B and C', 'Advanced TFT Training' and 'Voice Technology Training') can cost over US\$300 000 with just the 'Voice Technology' 3-day training course costing US\$100 000. There has never been a randomized controlled trial of TFT against an extant, effective intervention.

Emotion Freedom Techniques [17]

Emotion Freedom Techniques grew out of TFT. The founder, Mr Gary Craig (an engineer by trade), apparently 'spent US\$110 000 to learn (TFT) at its highest levels' from Dr Callahan (Personal Communication, Gary Craig, 22 January 1999). He claims that, consolidating the various TFT 'algorithms' into a single general purpose, tapping routine (algorithm), EFT is less cumbersome and more efficient than TFT. Indeed, in the same correspondence, Craig claims:

the EFT comprehensive algorithm is also effective 80–90% of the time for the average client population. In the hands of an experienced practitioner, it goes well into the 90%*s*. I often (not always) get 90–100% applying it to entire audiences and I don't even know the specifics of the participants' various issues. It works just as well even if the tapping is done in 'reverse order' from that suggested in the EFT Course. Furthermore, I often do this using only a shortened version of EFT which includes The Setup (psychological reversal correction) and seven tapping points (EB, SE, UE, UN, CH, CB, UA). It takes about

15 or 20 seconds per round. (Personal communication, Gary Craig, 22 January 1999)

There have been two randomized controlled trials into EFT. In the first trial [18], participants who had symptoms matching the DSM-IV criteria for a specific phobia of small animals, received one 30-minute treatment session of either diaphragmatic breathing or EFT. Results displayed a significant treatment effect in favour of EFT. At the follow-up treatment, gains had dissipated to a large extent, although the gains were still improved compared to pretreatment scores on self-report measures and a behavioural avoidance test. In the second trial [19], 122 undergraduate students with self-reported specific phobias were randomly assigned to one of four groups: EFT; placebo (tapping the arms – away from the hypothesized meridians); modelling (tapping a doll instead of themselves); and a control condition (no treatment). Self-reported fear levels (assessed at pre- and post-treatment) displayed no significant differences between the EFT group, the placebo group and the modelling group, which all displayed a significant improvement over time. The control condition, however, did not display a significant decrease in fear ratings. The authors concluded that the apparent gains are, therefore, likely to be because of other non-specific factors such as systematic desensitization, distraction techniques and demand characteristics – the same hypotheses forwarded in explanation for the effects of EMDR [20], another of the Power Therapies. For now, all we can assume is that EFT compares favourably to no treatment or a treatment known to be ineffective for the target presentation. However, for the time being, the benefits appear to be non-specific to the tapping algorithm and unrelated to any putative energy meridians.

Traumatic Incident Reduction [7]

Traumatic Incident Reduction is a direct conversion from Scientology and, in particular, dianetic auditing – a process of discovering old (back to when the participant was 12 months old) ‘repressed’ and painful ‘chains of engrams’ (memories?) which are then removed to achieve happiness. The TIR process ‘involves repeated viewing of a traumatic memory under conditions designed to enhance safety and minimize distractions’ [21]. There has only been one fully randomized controlled trial. Valentine and Smith [22] compared 56 treated, female inmates who ‘reported’ experiencing trauma to 67 female inmates who were randomly assigned to a waiting list control. Those in the experimental treatment condition were given an unspecified number of treatment sessions in 3–4 hour blocks. Results displayed a ‘trend’ for TIR to be superior to the no-treatment control condition at post-treatment,

to produce statistically significant reductions on multiple measures of symptomatology and to build upon these gains to a 3-month follow-up to the point where there were statistically significant differences between the conditions. Interestingly, the control condition also displayed statistically significant reductions on multiple domains over time with a small to moderate effect size (Cohen’s $d = 0.34$). This study has multiple design problems (e.g. unknown method of randomization, unknown number of treatment sessions, a lack of diagnostic certainty at intake and a lack of information on, and control for, other factors that may affect inmates in correctional facilities). In sum, with the control condition being ‘no treatment’ all we can say for now is that TIR appears to be better than no intervention and unproven against extant, effective interventions.

Tapas Acupressure Technique [9]

Invented by Ms Tapas Flemming (a Californian licensed acupuncturist) in 1993, TAT has been marketed as ‘an easy process for ending traumatic stress, reducing allergic reactions and freeing yourself of negative beliefs’ [23]. The underlying theory is that trauma (and, for some reason, allergies) lead to a blockage of energy in various organs and that applying light pressure to one of four areas (inner corner of either eye, between eyebrows, or back of head) this energy is released and the trauma resolved. Throughout this process the person concentrates on the objectionable material and is also taken through a series of statements. The advocates for this intervention also argue that many allergies are trauma-related and they can be relieved through this process. There does not appear to have been a study of any kind into this technique which has been published in the peer-reviewed literature.

Visual-Kinaesthetic Dissociation [10]

Visual-Kinaesthetic Dissociation is a process whereby the patient imagines the trauma as if watching a videotape of the event from different perspectives, coupled with a temporary dissociation from the event, followed by directed re-association of beliefs regarding the event. It is claimed that the desired dissociation is different from traumatic dissociation in that the desired goal is ‘a shift in one’s perception of a memory from associated (i.e. as if one is reliving the experience) to disassociated (i.e. not experiencing the memory in an associated manner)’ [24]. There has never been a published, peer-reviewed, trial into this technique.

Eye Movement Desensitization and Reprocessing [4]

Shapiro first introduced EMDR with claims of a near 100% success rate for any trauma-related memory within a single session of EMDR [4] and caught the imagination of clinicians and researchers to a possible unitary cure. Until this point posttraumatic stress disorder (PTSD) had been viewed, together with obsessive compulsive disorder, as one of the anxiety disorders most resistant to either psychological or pharmacological therapy. Not surprisingly, Shapiro's claims led to an overwhelming interest into the technique and led to over 30 trials of the intervention having been completed by 2004. Shapiro now describes EMDR as an eight-phase treatment protocol (see [25] for an analysis of EMDR mutation over time) and labels it as an 'information processing' therapy [26]. These eight phases now include: a history taking phase; a preparation phase (e.g. providing coping skills); an assessment phase (e.g. identifying the most vivid visual image related to the traumatic memory, assessing negative beliefs and alternative positive beliefs, obtaining anxiety ratings); a desensitization phase (e.g. following therapists' fingers with eyes while imagining trauma scene); an installation phase (i.e. challenge negative beliefs with positive beliefs); a targeting of tension phase (with eye movements); a closure phase (homework assigned and feelings normalized); and a re-evaluation phase (techniques taught in phases 1–8 are reassessed for patient learning).

Reviews and meta-analyses of EMDR studies published in high-ranking peer-reviewed journals have consistently found that: there is overwhelming evidence that eye movements are neither a necessary nor a useful addition to the procedure [25,27]; there is strong and consistent evidence that EMDR is better than no treatment and better than ineffective treatments, yet only as good as any other treatment that uses some aspect of exposure therapy [25,28]; and there is growing evidence that a full, exposure-based, intervention package is superior to EMDR in the long term [29,30]. Previous studies not specifically investigating EMDR have shown that distraction techniques used during exposure frequently lead to a dissipation of therapeutic gains and that such dissolution specifically impacts anxiety and depressive symptomatology and becomes more pronounced over time [31–33]. It is argued that such a pattern is beginning to emerge in the case of EMDR [20]. In sum, reminiscent of the charges laid at Jungian psychology, it has been claimed that 'what is effective in EMDR is not new and what is new is not effective' ([28], p.619).

A major problem that has plagued EMDR researchers regards the mercurial nature of the protocol itself. In the original paper [4], it was claimed that reading the

manuscript was adequate 'to achieve complete desensitization of 75–80% of any individually treated trauma-related memory in a single 50 minute session' (p.221), and that further details could be obtained from the author. Enquiries for these details returned a flyer for available workshops – not the more detailed protocol, as is usual in academia. In short order, this declaration of efficacy had changed to 'while successful treatment without proper training may be achieved perhaps 50% of the time, in other cases, untrained clinicians place the client at risk' ([34], p.188). By 1994 it was claimed that Level II training was required to properly evaluate the procedure and by 1999 much research was discounted because the treatment adherence raters used in various studies were not sanctioned by the EMDR Institute [35]. By 2004, to become a certified therapist in EMDR, requirements included: EMDR Level II training; at least 2 years experience in the relevant field (e.g. as a psychiatrist or psychologist); having conducted at least 50 EMDR sessions with no less than 25 clients; having received 20 hours of consultation by an approved consultant in EMDR; be recommended for certification by one or more EMDR International Association (EMDRIA)-approved consultants in EMDR; obtaining two letters of recommendation regarding one's professional usage of EMDR in practice, ethics in practice and professional character; and having completed at least 12 hours of EMDRIA-approved continuing education credits [36]. Every 2 years, 12 continuing education credits in EMDR are also required to maintain certification.

Furthermore, EMDR was initially differentiated from other treatments by the eye movements. As research appeared which showed little utility of inducing eye movements, the protocol insidiously changed. By 1991 it had been changed to include hand or finger tapping instead of eye movements [34], and by 1996 this had extended to 'any external stimulation' [37]. It was fortuitous for EMDRIA that researchers were testing the technique by having *control* conditions which used exactly these behaviours, just before each change in what counted as an acceptable EMDR protocol. When no differences were found between tapping and eye movement conditions, for example, the ground had already been laid to claim that the researchers were simply comparing two forms of EMDR against each other.

Further mutation of the EMDR protocols occurred over time until the ubiquitous one-session cure required at least 5–12 sessions (dependent upon client and trauma type), and included in vivo exposure (an already validated strategy for avoidant behaviours), guided self-imagery and mastery (referred to as 'positive future templating' [38]) and, of course, imaginal exposure and cognitive challenging.

Good theories and treatment models do evolve over time. However, such theories explicitly state the conditions under which they could be falsified. Changes over time to the assumptions and procedures should also be made explicit and differentiated from earlier versions to preclude confusion. Failure to meet these criteria results in practices based upon unfalsifiable theories and the utility of spending scientific resources on treatment evaluation becomes questionable.

Commonalities in practice (or how to spot a Power Therapy)

Perusing the above therapies it should become apparent that there are a few factors which unite their protocols. It is known that strategies such as exposure (imaginal and in vivo) and cognitive challenging are effective in treating trauma [39] and all of the above strategies include aspects of these interventions. However, each technique adds its own differentiating twist and domain-specific jargon, whether they be eye movements, body tapping, 'voice technology', 'installation phases' or targeting of 'chained engrams'. It is, therefore, unsurprising that these strategies tend to prove better than no treatment or non-specific treatments. Indeed, misattribution of treatment efficacy to accoutrement practices might lead me, for example, to hypothesize that it is the green leather chair that I use during imaginal exposure for PTSD treatment which is the active ingredient to my therapy and responsible for symptom relief. Does this give me the right to advertise my new Green Chair Therapy? It would be interesting to see the medical fraternity's reaction to a 'new, revolutionary treatment' for bacterial infections that consisted of prescribing the cutting-edge 'bluer-than-blue' coloured amoxicillin. With this in mind a popular satirical website is that of a Dr Fatima Shekel, which markets a 'revolutionary breakthrough in trauma treatment' called Sudotherapy [40]. Selling a Sudometer to aid in treatment and offering Sudodoctorates (SyD) and certification in Sudotherapy up to Level IX. This approach is even conducting an online 'clinical' trial.

But how did these interventions obtain such a widespread following of practitioners? It is my thesis that there are certain other commonalities amongst the Power Therapies that are best examined through a social psychology lens. It is claimed that social influence strategies are commonly used by those peddling pseudoscience. Pratkanis [41] identifies nine tactics that are frequently used (sometimes unknowingly) by pseudoscientists and, using the Power Therapies as examples, they are as follows.

First, Pratkanis [41] recommends the creation of a *phantom* – a currently unavailable goal that might just be

obtained with the right angle, effort or insight. For example, EMDR proponents originally claimed a one-session cure for any trauma-related memory. This process is naturally aided by the suspension of disbelief and frequently relies on one's hopes that 'maybe it is possible – let's have a closer look'. Second, it is suggested that the aspiring pseudoscientist set a *rationalization trap*. With this tactic the pseudoscientist encourages further commitment to the technique by obtaining incremental commitments to the protocol. For example, trainings might start-off with a free 'information' session (or pamphlet) on the technique which is quickly followed by an invite to be trained to Level 1 at the 'knock-down' price of only \$233. After all, if you have spent a night listening about the technique (or reading about it) you must be interested, surely? Following this a larger 'investment' is suggested (e.g. for Level 2 training) and so on. In effect, the target (e.g. psychiatrist) rationalizes that they must be interested as they have already invested substantial time and money into the practice. It is also no accident that these trainings are held at plush, five star hotels which convey a sense of credibility whilst at the same time pairing a positive affect with the technique.

Third, Pratkanis suggests that the purveyor of pseudoscience manufactures *source credibility and sincerity*. This involves the creation of a guru-like leader with special (or specialized) traits. It is indeed quite difficult to argue against someone of stature – particularly one trained to Level 9 in a 'Power Therapy' and who understands 'voice technology'. But it is even harder to argue with someone who is seen as 'gifted' and affects ostentatious compassion towards those in strife. Maybe they set-up a 'humanitarian' (and tax exempt) offshoot, such as the EMDR Humanitarian Assistance Program, or maybe all they do is sign all correspondence with the word 'hugs' instead of 'yours sincerely', as in the case of the founder of EFT. But whatever the method, faked credibility coupled with implied sincerity is a mighty force to oppose.

Pratkanis suggests that the budding entrepreneur then creates a *'granfalloon'*. This term was first introduced by Kurt Vonnegut [42] in the phrase 'if you wish to study a granfalloon, just remove the skin of a toy balloon' to describe what he later defined as a 'proud and meaningless association of human beings' [43]. All the Power Therapies promote at least one self-regulated body of followers who have in-group behaviours, rituals, jargon, shared goals and feelings and specialized information. For example, when EMDR was first introduced, training workshop delegates were required to sign a seemingly legal binding document stating that they would not train others in the technique and would not show therapists untrained in EMDR the treatment manual that was distributed during the training. Aside from ensuring a lack of

competition for the trainers, such a tactic declares those trained in the process as somehow ‘special’ and facilitates in-group thinking.

These in-groups are then more likely to rally to the call against enemies (out-group critics). It is particularly important to have enemies (i.e. critics), for without them there is little in the way of publicity, and few scapegoats, should none of your manuscripts be accepted by peer-reviewed journals (which raises another important issue, namely ‘what do we mean by peers’). This was not lost to P.T. Barnum, self-acclaimed as ‘the greatest showman on earth’ (and frequently misattributed with the saying ‘there’s a sucker born every minute’), who started his illustrious career with a travelling circus of ‘freaks and oddities’ and quickly learned that any publicity was better than none. Whenever he moved to a new town he would write a letter of complaint (under a pseudonym) to the local paper the morning after the circus had opened. He even complained that many of the acts were cons and advised the readership to go nowhere near the circus. Of course, people thronged to his shows which became famous in very short periods of time, and it is unsurprising that later in life his most popular lecture was ‘the art of money-getting’. Such social influences, for example, have led the *Journal of Clinical Psychology* to allow a special issue of unreviewed articles on TFT to be published, next to critiques of the articles, following claims by TFT advocates that ivory-tower pedagogues would never allow their breakthrough to see the light of published day – so threatened would they be by such results from unorthodox techniques. Of course, TFT is now marketed with the tagline ‘published in the *Journal of Clinical Psychology*’ [44], adding yet more source credibility to their claims.

The use of *self-generated persuasion* is thought to be one of the most powerful social influences [41]. Here, in true Amway fashion, the customer becomes the seller. Should someone be coaxed or coopted into selling the product the incurred cognitive dissonance [45] increases the belief in the product and acts to increase or maintain a social identity consistent with the group (i.e. groupthink; see [46]). These customers/sellers may then resort to *vivid appeals* to argue their case [21]. Being concerned with mental health, therapists tend to have a natural inclination towards compassion for human suffering. With respect to this the single case description very much humanizes the problem and coopts the listener to not disagree with the message in order to continue to be seen as a compassionate human being – particularly if the case study being relayed is by the actual patient. It makes it very difficult for the decision maker (e.g. psychiatrist or case manager) to appear to be a caring individual while publicly disbelieving the advocate or turning down approval for wholesale delivery of therapy X, having been told an

anecdotal case study. Furthermore, humans tend to have a confirmatory bias [47]. We always remember the horse that won the race, but not the multitude which lost, the time we put it all on number 4 and the chips came-up. But, of course, we remember the case where treatment X worked and not the times the clients never returned or did not improve. Consequent to such a bias, the neophyte Power Therapists may well believe their own vivid appeal to others, yet for scientists, case studies generate hypotheses and pique interest, but they also understand, as the adage would have it, that the plural of anecdote is not facts.

As mentioned earlier, TFT advocates have argued that heart rate variability is a valid measure of technique efficacy and have advanced such data in ‘proof’ of the protocol. The budding pseudoscientist may then argue that the burden of proof is on the critic – not those doing the claiming, as is usual in science. This is just one example of *prepersuasion*, where the advocate sets the stage for what should be counted as evidence for their product. One might even create whole new disorders that your therapy is then alone in being shown (via case studies, of course) to have curative powers (e.g. ‘love pain’ being ‘cured’ through EFT [48]). Another example of this tactic is to set expectations for a certain outcome which, because of the above-mentioned confirmation bias, then becomes a self-fulfilling prophecy (e.g. therapist allegiance effects in EMDR trials [20]). In sum, *prepersuasion* tries to stack the deck in favour of the dealer.

Pratkanis [41] goes on to suggest that taking advantage of various human *heuristics* (simple rules humans frequently use to govern decision-making) will increase the allure of the product. These heuristics include: the scarcity heuristic (if it’s scarce or costs more, it has more intrinsic value); the consensus or bandwagon heuristic (if key people or most people agree, then it must be true); the message length heuristic (the longer, the stronger); and the representative heuristic (if the protocol is complex it will be good for treating complex cases). Likewise, he argues that *commonplaces* (widely held beliefs in today’s society) also act to increase the perceived value of the product. These commonplaces include: the natural commonplace (natural energy intervention is good, man-made medicine is bad); the goddess within commonplace (people have a spiritual self which is neglected by science and modern medicine); and the science commonplace (having ‘scientific’-sounding aspects to the product adds to its credibility).

Finally, when all else fails, Pratkanis recommends that one should attack critics with *innuendo* and *ad hominem* arguments. Playing the man rather than the ball becomes far more profitable when one does not know the rules of the game, one is inept at the game, or where one is

obviously losing. This can take quite a few forms (e.g. implications of a flawed character through not being compassionate, charges of a general lack of therapeutic ability to explain poor outcomes with the new treatment, insinuations of being protective over the scientific *status quo* etc.) but the most subtle and insidious form in recent years has been the implied threat to sue any negative press (e.g. published randomized controlled outcome trials, commentaries etc.) as defaming a copyright name. Were this not the case, it is unlikely I would have had a high ranking scientific journal send my article outlining a randomized controlled trial to a lawyer before publishing it, and I doubt very much that McNally's article comparing EMDR to Mesmerism would normally contain the front page note 'I am very grateful to those who have reviewed previous drafts of this article including Harvard University attorney Frank J. Connors, J.D., attorney Kathleen Moore, J.D., Margaret Dale, J.D.' ([49], p.225). It seems that pointing out that the emperor has no clothes is becoming more fraught with liability as the years pass.

A more recent tactic has even been the discounting of the entire scientific method. Power Therapists have, in some cases, adopted the (quite illogical) postmodern mantra that science subjugates personal meaning. An example of this is the dismissal of science as unnecessary because of personal accounts and anecdotal case studies, as mentioned earlier. Another is a direct attack on both the null hypothesis and the application of critical examination/thought. In an online forum where there was some discussion regarding a lack of correlation between the claims frequently made by Power/Alphabet Therapists and the experimental data, one advocate unwittingly showed this tactic rather concisely:

Feeling rather tired of the scientism rampant in our professions, of the people who would rather devote their time to trying to disprove things than to helping people directly, and not feeling much patience right now – maybe I need to tap on that. (open correspondence to the Traumatic Stress Forum, 18 February 1999)

It is too easy to attribute these types of comments to one or two misguided individuals, but it is becoming a rather frequent response type in psychology and psychiatry. There is a difference between understanding the limitations of, and generalistic conclusion brought about through, randomized controlled trials and meta-analyses and the overall discounting of the scientific method.

Rucker and Pratkanis [50] argue that *ad hominem* insults, or accusations in general, are very powerful methods of influencing opinion when one accuses the target of negative traits that one is actually guilty of one-

self. In a series of experimental studies, they found that such 'projection' was effective even when the audience had evidence that the claimants were, in fact, guilty of this deed themselves. In a sad indictment of the ease with which humans are erroneously persuaded, Rucker and Pratkanis also found that the audience still laid blame on the target and became more sympathetic to the one doing the accusing even after suspicions had been raised about the motives of the projectionist.

A caveat for psychology and psychiatry

There is a rather important *caveat* that needs to be borne in mind when inspecting Pratkanis' methods 'to sell a pseudoscience' when considering psychotherapies: many, if not all, empirically supported psychotherapies meet at least some of these criteria! For example, nearly all have a charismatic leader, have established organizations devoted to their use and use vivid appeals to proliferate their use. The major difference, however, is that empirically supported practices build upon a scientific theory and state the terms under which this theory could be falsified. In effect, all scientific theories are tentative. I contend that this is the most important condition which delimits a science from a pseudoscience [51]. As summarized by Karl Popper in 1963:

Thus the problem which I tried to solve by proposing the criterion of falsifiability was neither a problem of meaningfulness or significance, nor a problem of truth or acceptability. It was the problem of drawing a line (as well as this can be done) between the statements, or systems of statements, of the empirical sciences, and all other statements – whether they are of a religious or of a metaphysical character, or simply pseudo-scientific. Years later – it must have been in 1928 or 1929 – I called this first problem of mine the '*problem of demarcation*'. The criterion of falsifiability is a solution to this problem of demarcation, for it says that statements or systems of statements, in order to be ranked as scientific, must be capable of conflicting with possible, or conceivable, observations. ([52], pp.38–39)

Another differentiating factor is the declaration of a coherent and consistent theory that underlies the practice – one which, besides being testable, does not disagree with currently understood and accepted experimental data. The therapies outlined above have all been derived in isolation of scientific theory and in many cases the theory has been subsequent to the practice (e.g. EMDR). Shallowness of theory is not a good enough reason in itself to dispel practice, but it should raise concern and suggest that such practices should be approached with caution. As

commented by Lewin [53]: ‘Many psychologists working in an applied field are keenly aware of the need for close cooperation between theoretical and applied psychology. This can be accomplished in psychology, as it has in physics, if the theorist does not look towards applied problems with high-brow aversion or with fear of social problems, and if the applied psychologist realizes that there is nothing so practical as a good theory’ ([53], p.169).

Conclusions

Community mental health is becoming a larger focus of governments and organizations as the years progress and rightly so. This has led to greater spending and more emphasis on evidence-based practice. However, without a grounding in what ‘evidence-based practice’ actually means, this has resulted in a larger market for pseudoscience. Practitioners, bureaucrats and the general public do not always understand the tenets of science and, as such, are more open to being duped. This is not to say that investigating new avenues and new hypotheses are a waste of resources, but rather that we need to set, and abide by, stringent conditions as to what counts as evidence and the methods we use to evaluate hypotheses. However, possibly the largest hurdle in this field facing psychology and psychiatry is the education of our practitioners and the wider community into the scientific method and internal and external threats to its integrity. As referred to above, McNally resorted to Tertullian’s motto (I believe because it is absurd), yet the clever hawk of pseudoscience would be well aware of St Augustine’s variation: *credo ut intelligam* (I believe so that I might understand).

I see two major steps that are needed immediately to help counter this proliferation of pseudoscientific practices within the field of mental health. The first involves the education of extant mental health professionals in the tenets of science and the tactics of pseudoscience. This will be best met by continuing education focusing on this larger issue and promoting the work of organizations such as the Commission For Scientific Medicine and Mental Health which publishes journals such as the *Scientific Review of Mental Health Practice* and *The Scientific Review of Alternative Medicine*. Consequently, this also raises the thorny issue of *not* crediting certain workshops as meeting the minimum requirements needed for continuing education credit. Second, it is imperative to train new students in the scientific method and alert them to practices which threaten the scientific integrity of the profession. Courses have been proposed, and are indeed now run, based upon differentiating science and pseudoscience within the mental health professions (e.g. see the edited book by Lilienfeld *et al.* [54]).

To end where I began – NLP is no longer as prevalent as it was in the 1970s and 1980s, but is still practised in small pockets of the human resource community today. The science has come and gone yet the belief still remains. In fact, you can enrol in an Australian workshop today for certification as: an NLP Practitioner (\$3995); a Master NLP Practitioner (\$4395); or an NLP Trainer (\$10 570). The companies offering the training will even arrange finance. Be quick, places are limited!

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