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EDITORIAL

I am very pleased to welcome our members and wider readership to Volume 40, No. 1, of the Australian Journal of Clinical and Experimental Hypnosis. This edition is truly broad ranging with contributions spanning scientific, clinical, theoretical, and cultural dimensions of the practice of hypnosis. Usman Jaffer from the International Islamic University of Malaysia and I seek to locate the core phenomena of hypnosis within an evolutionary and neurobiological account of cognitive and affective control systems within the human brain. Ide Chan, a clinical psychologist based in Hong Kong, shares with us two case studies. In the first hypnosis is used to treat a complex case of conversion disorder and PTSD. This case study is notable for the careful and ongoing analysis of the client's changing state and needs and the systematic theory-based development of the treatment. In particular, the strengths and the limitations of chosen hypnotic interventions are realistically balanced to nest hypnosis within a wider treatment framework. In the case of David, hypnotic and CBT interventions are combined in a theory-guided, individually planned manner to treat realistic but disabling anxiety and build much-needed self-efficacy in a client suffering from Brugada syndrome, a leading cause of sudden death due to cardiac failure.

Irina Hollingworth presents the results of a study forming part of the Antenatal Training for Childbirth Trial at the Women's and Children's Hospital in Adelaide examining antecedent beliefs and experiences in relation to the use of hypnosis amongst the participants in that trial. Bruce Gregory, a highly experienced Los Angeles based psychotherapist, discusses how Eriksonian hypnotherapy principles can be seen to be implemented in the Chinese martial art of Tai Chi and how in turn the principles of this mind-body therapy art may be integrated at key moments into an Eriksonian based approach to hypnotherapy. Finally Kathryn Gow provides us with her informative review of *The Handbook of Contemporary Clinical Hypnosis: Theory and Practice* edited by Les Brann, Jacky Owens and Ann Williamson. This 2012 textbook for professionals on the theory and practice of clinical hypnosis will be of direct interest both to ASH members and many of our other readers.

Many readers will be interested to view a recent one-hour interview with the internationally recognized hypnosis researcher Professor Peter Sheehan AO recorded by Michael Yapko and now posted on YouTube. The

following link will take you to the first section of the interview with this distinguished Australian contributor to our field: <http://www.youtube.com/watch?v=1UBb4y-uGfw>.

Graham A. Jamieson

HYPNOSIS AND THE NEUROSCIENCE OF COGNITIVE AND AFFECTIVE CONTROL

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This paper examines hypnosis in relation to the neuroscience cognitive and affective control. It is proposed that hypnotic phenomena are rooted in evolution and thus biologically based. Animal hypnosis is considered to confer important advantages in natural selection which have been preserved and extended in the development of the human brain. Two influential models in the neuroscience of cognitive control are described and evidence for brain structures implementing conflict monitoring and cognitive control is reviewed. The neural basis of affective control is then examined in relation to cognitive control. Dorsal anterior cingulate cortex (dACC) is proposed as a common cognitive and affective monitoring mechanism. Ventrolateral prefrontal cortex (vlPFC) is proposed as monitoring stimulus salience whereas the medial prefrontal cortex (mPFC) was involved in the monitoring of affective conflict. The dorsolateral prefrontal cortex (dlPFC) is implicated in resolution of cognitive conflict and the rostral anterior cingulate cortex (rACC) was implicated in affective conflict resolution. Current theories of hypnosis as a dissociative state are then analysed in relation to these models of cognitive and affective control.

Keywords: hypnosis, neuroscience, cognitive control, affective control.

Hypnosis-like phenomena are reported throughout recorded history and have formed part of established western medicine for over 200 years (Barber, 2000). At present hypnotic interventions are evidence-based therapies for many psychological and physical conditions and hypnosis serves as a research tool in many areas of neuroscience (Vandenberg, 2010). The hypnotic experience,

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which seems to some mysterious, almost magic, may usefully be viewed as a product of human evolution (Ray, 2007).

A hypnotic episode formally starts with an individual making a decision to accept hypnosis as a form of therapy, accepting to undergo hypnosis for the experience of being hypnotized, or accepting to participate in experiments dealing with hypnosis. This decision itself, prior motivations and preconceived ideas all play an important role in the unfolding of the hypnotic experience (Barber, 2000). The individual who presents themselves to undergo clinical, experimental, stage hypnotism or self-hypnosis is typically presented with a few words requesting relaxation, focused attention and absorption in prescribed imaginings. This forms the induction ritual. This is followed by the delivery of a series of explicit suggestions. Depending in part on their level of susceptibility, the individual will respond to the suggested experiences in a highly variable and individualized manner (Sheehan & McConkey, 1982). Except in the case of post-hypnotic suggestion, hypnotic suggestions are terminated with a de-induction ritual marking the return of the individual to everyday psychological reality.

At face value this seems both straightforward and yet mysterious. How does a human being actually manage to construct the experiences suggested under hypnosis, like regress to childhood, decrease pain, hallucinate voices or experience apparent changes in the control of their own limbs? Even though there are two roles assumed in the hypnotic situation, the hypnotized individual and the hypnotist, this paper will be focusing on the hypnotized individual. In order to understand what changes the individual is undergoing in hypnosis some understanding of the normal state or point of departure of the individual is first required. Our gaze will then be turned to the effects of hypnosis in relation to cognitive and affective control.

EVOLUTION AND ANIMAL HYPNOSIS

The evolutionary origins of hypnosis have been emphasized by Ray (2007). Since human beings share 95–98% of their DNA with the other existing primates it is clear we are more similar than different. Anatomically modern humans have evolved only 200 millennia ago. It is therefore reasonable to consider whether hypnosis-like behaviours may be observed in nonhuman species in the search for evolutionary antecedents to trance ability. According to contemporary evolutionary accounts a species will only keep an endowment or a mutation if it serves an ongoing adaptation. If it is no longer

required and thus selected, then random shuffling will over time phase it out of the genetic code.

An Austrian monk in 1646 gave detailed descriptions on how he, by holding down the head, fixating the eyes on a line and through stroking, apparently hypnotized a chicken (Völgyesi, 1966). There are many accounts of other animals like crocodiles and rabbits in which this was accomplished as well. Animal hypnosis was used to immobilize the animal and even for the animal to experience analgesia (numbing of pain). Induction was usually through stroking, and even eye fixation (Draper & Klemm, 1967). Pavlov (1927) purported that the inhibitory cortical mechanisms during such hypnosis were similar for animals and humans.

THE EVOLUTIONARY ADVANTAGE OF HYPNOSIS

In order for hypnosis-like responses to survive naturally, they have to confer a survival and/or reproductive advantage for the individual. Before modern medicine, healing was primarily facilitated by behavioural and internal state regulation. Human beings and their ancestral species evolved the ability to heal through adaptations to physiological and behavioural self-regulatory mechanisms. Pain management, flight or fight regulation and somatic regulation, as observed in hypnosis, could potentially confer direct survival and reproductive advantages to individual members of ancestral species. The domain of hypnosis may therefore be linked to specific evolutionary adaptations (Ray, 2007).

EVOLUTION OF THE BRAIN: JACKSON'S INHIBITORY CONTROL AND ENCEPHALIZATION

The neurologist Hughlings Jackson (1884) examined the brain from an evolutionary developmental perspective. He proposed two principles. The first was hierarchical integration through inhibitory control, which is that the brainstem, limbic system, neocortex and other brain systems could interact with each other through an inhibitory control from the top down. Reflexes and instincts which are attributed to an earlier evolutionary origin were believed to be inhibited through higher control functions which evolved later. Encephalization was the second principle he proposed, in which special purpose neural systems, which have initially evolved to control a specific action or response, become subordinate to the unified control more general higher order systems which emerge later in the course of brain evolution.

MACLEAN REPTILIAN BRAIN, PALAEOMAMMALIAN BRAIN AND NEOMAMMALIAN BRAIN

In a highly influential account, the functional anatomy of the human brain has been parsed according to adaptations originating with three distinct eras of vertebrate evolution. Paul Maclean (1990) proposed his theory of the triune brain, which states that the core of the human brain preserves and corresponds to the basic reptilian brain plan. Overlaid on this is a successive evolutionary radiation of brain structures which he calls the palaeomammalian brain. Surrounding this set of structures is a further (and later) radiation of brain evolution which he calls the neomammalian brain. The human brain on this account then processes external and internal information in three distinct but hierarchically integrated ways. The reptilian brain which includes the brainstem and cerebellum controls unconscious homeostatic processes like temperature regulation, sleep–wake cycles, heartbeat and breathing, and through the basal ganglia potentially complex but rigid or stereotyped fixed motor responses to fixed stimuli. The palaeomammalian brain which corresponds to the limbic system is involved in emotional processing, providing the affective basis of social bonds corresponding to the ancestral mammalian adaptation of maternal care. The neomammalian brain includes the neocortex and evolved driven by natural (and sexual) selection for learning, memory and flexible cognitive functions like executive control, problem solving, interpretation of the external environment and (in humans) language. This last layer of brain development (which includes the capacity for self-awareness) is particularly where the effects of animal and human hypnosis are expected to be different. Therefore it is this functional domain of brain networks which is the focus of the following discussion.

COGNITIVE CONTROL

While reading this paper many things are occurring at once. You are breathing, your heart is beating, and you are being bombarded with many stimuli from the environment, like the sounds surrounding you, things in your peripheral vision and maybe a memory of something that happened this morning or the impending necessity to pick up your child from school. All of these issues are competing for responses, leading to conflicts within your sensory and motor processing systems. You instead manage to focus on this page and read the few more sentences. This is due to the successful engagement of higher level cognitive or executive control systems to select and guide

processing in the presence of conflict (Miller & Cohen, 2001). “Controlled processing,” “effort,” “central executive,” “supervisory attention,” “attentional bias,” “conflict resolution” all refer to operations of this executive system (Alport, 1987; Baddeley, 1986; Desimone & Duncan, 1995; Kahneman, 1973; Miller & Cohen, 2001; Norman & Shallice, 1986; Posner & Peterson, 1990; Shiffrin & Schneider, 1977). Cognitive control refers to the set of functions which regulate cognitive performance on specific tasks, especially in non-routine, conflicting and challenging situations (Norman & Shallice, 1986). This higher order faculty is implemented by key networks in the prefrontal cortex (PFC) and anterior cingulate cortex (ACC).

Wood and Grafman (2003) outline the control-related areas and functional connections within the PFC:

It can be divided into ventromedial and dorsolateral regions, each of which is associated with posterior and subcortical brain regions. The ventromedial PFC has reciprocal connections with brain regions that are associated with emotional processing (amygdala), memory (hippocampus) and higher-order sensory processing (temporal visual association areas), as well as with dorsolateral PFC. The dorsolateral PFC has reciprocal connections with brain regions that are associated with motor control (basal ganglia, premotor cortex, supplementary motor area), performance monitoring (cingulate cortex) and higher-order sensory processing (association areas, parietal cortex). The ventromedial PFC is well suited to support functions involving the integration of information about emotion, memory and environmental stimuli, and the dorsolateral PFC to support the regulation of behaviour and control of responses to environmental stimuli. (pp. 139–140)

Two influential models of cognitive control will be discussed below, Norman and Shallice’s (1986) attentional control model and Miller and Cohen’s (2001) guided activation theory.

ATTENTIONAL CONTROL MODEL

This model proposes that there are two mechanisms involved in monitoring behaviour. The contention scheduler (CS) is a type of automatic selection mechanism that selects programs called schemas which have stored information about habitual processes. Among others are skills, reflexes and heuristics. In other words, the CS implements fixed automatic and unconscious reactions to a stimulus. These schemas are not innate, however, but are learned and new schemas can be added. The second mechanism is the supervisory attention system (SAS) which modulates completion among competing schema (input–

output mappings) in the CS system. The SAS is required to select novel stimulus response mappings for which there are no firmly established schemas. The SAS is closely associated with the experience of cognitive effort or conscious (intentional) control. When a salient stimulus is presented CS automatically activates the required schema. If there are two stimuli with strong stimulus response mappings, processing conflict interferes with response selection. The SAS monitors processing conflict and selects task-relevant responses by enhancing cognitive control. In the case of a novel stimulus or situation CS does not have available schemas to guide responses and the SAS must again provide top down control. Holding a heated plate in one's hand will normally trigger the release of the object (CS); however, when there is food on the plate a hungry person may override this strong automatic response and maintain their grasp on the plate. By extension the SAS is involved in the self-regulatory processes of strategy generation, episodic memory retrieval, error monitoring, problem solving and intention generation (Norman & Shallice, 1986).

The SAS is closely linked with the activation of task-set representations in the PFC. However, the contention scheduling process is associated more with posterior action selection and perceptual processing systems. Evidence for this model comes from neuropsychological observations that, following lesions in the PFC, reportable awareness of routine behaviours is impaired (Allain, Le Gall, Etcharry-Brouyx, Aubin, & Emile, 1999). Novel tasks activate anterior PFC, but overlearned tasks activate medial and posterior PFC regions (Koechlin, Corrado, Pietrini, & Grafman, 2000). There is strong evidence for different PFC regions being implicated in different components of executive functioning: For example, error monitoring is closely associated with the ACC (Egner & Hirsh, 2005a), control of episodic memory retrieval with the dorsolateral PFC (Rugg & Wilding, 2000) and problem solving in the anterior PFC (Braver & Bongiolatti, 2002).

GUIDED ACTIVATION THEORY

Miller and Cohen (2001) propose that goals, rules, or retrieval cues are represented in the prefrontal cortex. These goals, rules, or cues in turn control the responsiveness of connections between other regions of the brain. However, contextual cues do not always provide sufficient information about what reactions are appropriate in that context. Therefore context related information is also stored in the PFC, which may select appropriate reactions. In some situations more control is required over natural responses than in

others. In these situations the PFC will have to be more activated, signalling the level of control required. The anterior cingulate cortex (ACC) identifies potential and significant conflicts times when a cue activates different response tendencies (Botvinick, Cohen, & Carter, 2004). Miller and Cohen (2001) propose the orbital prefrontal cortex acts to control processing conflicts due to “hot” social and appetitive processes whereas the dorsal areas of the prefrontal cortex are involved in controlling conflict due to “cold” or cognitive stimulus attributes.

Guided activation theory proposes the PFC must be able to represent novel goals, rules, or means which become increasingly complex over time. PFC not only maintains contexts and goals, but must also update these representations when necessary. This set of regions must ultimately be able to integrate control over a wide range of information types and sources. The information input to the PFC from external stimuli, cues and contexts, as well as the internal motivations and goals, has to be integrated as well as communicated to the necessary processing and response implementation regions. Top down PFC control over these regions is reflected anatomically in long-range white fibre connections with them (Miller & Cohen, 2001).

These two models provide the underpinnings of a wide variety of specific control theories. Both start with the role of biologically and/or environmentally “programmed” responses and the need for flexible control to override these responses. Both therefore highlight the role of integrated monitoring and control function leading to more recent accounts of conflict monitoring and conflict control and reward-based error monitoring in cognitive control. This is the domain on which the next section will focus as it has significant implications for the understanding of hypnosis.

EXPERIMENTAL METHODS USED TO TEST COGNITIVE CONTROL

A common feature of experimental paradigms engaged in the study of cognitive control, such as the Stroop paradigm and the flanker task, is the generation of processing conflict either at the stimulus processing level or the response selection level (Botvinick et al., 2004; Egnér & Hirsch, 2005b). The rationale of such experiments is to present a conflict or situation in which the respondent has to ignore a distracter and focus on a specific piece of information. Relevant stimulus features are usually cues which are tied to biologically wired or over-learned processing schemas (e.g., face identification

or word reading schemas, respectively). Disruptive competition between schemas therefore requires activation of the SAS or the higher order system in order to overcome the conflict between normal reactions and select task-appropriate processing responses.

The Stroop task typically requires participants to view a series of visual stimuli nowadays presented on a computer screen. Stimuli traditionally (but not necessarily) take the form of words and at times a combination of both words and pictures. The stimuli are constructed so as to have multiple features which may be salient (in different ways) to the task at hand. These features may be either congruent or incongruent with each other in their meaning and/or mappings onto the task-defined response requirements. In the latter case a processing and/or response conflict is created which will be resolved by the stronger mapping in the absence of any top down control. The participant is directed to respond to one aspect of the stimulus ignoring the (potentially) conflicting aspect. In the classic Stroop, colour words like blue, green, red and orange will be presented in either the same colour (congruent) or in different colours (incongruent). The participant will typically be instructed to either name the colour of the word and ignore the colour name or vice versa. Response times for congruent stimuli are quicker and more accurate than those to incongruent stimuli. These differences may be used to indicate both the level of conflict generated and the level of control elicited (Egner & Hirsch, 2005a, 2005b).

The Eriksen flanker task, another common paradigm, presents multiple stimuli simultaneously. For example, a word may be presented in the middle of the screen which will be flanked, on the top and the bottom (or the left and right) with similar or different words. Participants are asked to focus on the middle word ignoring the “flankers.” The types of flanker words determine the level of conflict, and response time and accuracy are once again taken into account (Ochsner, Hughes, Robertson, Cooper, & Gabrieli, 2009).

BRAIN AREAS RELATED TO COGNITIVE CONTROL

According to van Veen and Carter (2002, p. 593), “monitoring refers to a cognitive mechanism that applies a simple algorithm to a limited domain of information to evaluate the quality of information processing and executive control and to alert the control mechanisms if information processing does not proceed adequately.” There is one area in the brain that has been studied and implicated more than others with error monitoring or detection, a deep

midline region of the PFC which wraps around the corpus callosum like a collar (or cingulum), giving rise to its name, the anterior cingulate cortex (ACC).

Early studies which implicated the ACC in error detection and control were based on event-related potentials (ERP). Immediately following an error a large negative wave is detected termed the error-related negativity (Ne) or error negativity (Falkenstein, Hoormann, Christ, & Honsbein, 2000). One study by van Veen and Carter (2002) used a flanker task with congruent and incongruent words to see the involvement of the ACC in conflict monitoring. They divided the flanking words into stimulus-incongruent, which were similar to the stimulus but not the same (creating conflict at the detection stage), and response-incongruent which had it mapping to the opposite response to the target stimulus (creating conflict at the response stage) thus requiring active selection of the correct outcome and monitoring and correction of potential response errors. They concluded that the ACC detects conflict at the response level and not at the stimulus level.

The ACC has been implicated in top down inhibitory control of responses. However, stronger evidence is in favour of its error monitoring capability. While the ACC is engaged most strongly during conflicts at the level of response selection (van Veen & Carter, 2002) there have been studies implying monitoring at other levels of processing which include stimulus evaluation (Milham, Banich, & Barad, 2003) and task representation (Badre & Wagner, 2004) which broaden its monitoring function. It is also observed that when the ACC is highly activated, it activates the dorsolateral prefrontal cortex (dlPFC) thereby modulating the source of top down cognitive control (Botvinick et al., 2004).

The evidence for the dACC being involved in conflict monitoring and dlPFC being involved in top down conflict resolution comes from numerous neuroimaging studies which investigated the neural substrates of conflict resolution using Stroop type tasks (Egner, Etkin, Gale, & Hirsch, 2008; Egner & Hirsch, 2005a, 2005b). In addition the ventro lateral prefrontal cortex (vlPFC) has also been implicated in the processing of stimulus salience and thus top down attentional control. Where the vlPFC recruited attention is insufficient the dlPFC which is involved in task set or goal representation is called upon to resolve the conflict (Egner, 2011).

The dlPFC has also been noted to be more active after an incongruent (high conflict) Stroop trial therefore resulting in faster response and fewer errors on an incongruent trial preceded by an incongruent trial than when

preceded by a congruent trial (Egner et al., 2008; Egner & Hirsch, 2005a, 2005b). Egner et al. (2008) conclude that “conflict adaptation paradigms have revealed a dACC-IPFC-sensory cortex cognitive control loop that ensures the protection of task-relevant processing from interference by task-irrelevant distracter stimuli” (p. 1475).

In relation to the two models of control discussed previously we can now see the specific functional pathways that permit the SAS or the PFC to modulate CS or the processing cues which are required for action in a specific behavioural or cognitive task. The SAS may therefore comprise both the vIPFC which recruits attentional control driven by the salience of the stimulus and the dACC which monitors response conflict and/or errors and activates the dIPFC to control those conflicts or errors thus priming the vIPFC once again. There is, however, a distinct process for affective as distinct from cognitive which will now be discussed.

AFFECTIVE CONTROL

Affect refers to moods generally and emotions specifically. Affective control is an extension of cognitive control which factors in emotion. Emotion is proposed to originate in the limbic regions of the brain. Affect is involved in many aspects of cognition in that the mood affects judgments, evaluation, concentration and attention. There is anecdotally reported evidence that conflicts often occur between being emotionally subjective or cognitively objective. In cognitive monitoring the dACC was implicated as the error detection region, while in emotional processing the rostral ACC (rACC) has been implicated. The ACC was neatly divided into the dACC for non-emotional processing and the rACC for emotional processing (Bush, Luu, & Posner, 2000). However, these divisions (and associated networks) must work in conjunction with each other.

Neuroimaging studies have implicated the rACC in the processing of emotional task-distracting stimuli using an emotional Stroop task where participants were asked to name the colour of an emotionally neutral word like tree or an emotionally charged word like death (Bishop, Duncan, Brett, & Lawrence, 2004; Mohanty et al., 2007). These studies were not however able to discern the precise role of the rACC in emotional processing. The processing of task-irrelevant stimuli (emotionally charged words) is not in direct conflict with the processing of task-relevant stimuli (colours) (Algom, Chajut, & Lev, 2004). Egner et al. (2008) therefore formulated a Stroop task requiring

conflict in the same domain by using emotional face pictures with either a congruent emotion word transposed on it (e.g., a happy face with the word happy on it) or an emotional face picture with an incongruent emotion word on it (e.g., an angry face with the word happy on it). When combined with results from the non-emotional task of the politician and actor word picture Stroop mentioned this experiment demonstrated dissociable neural systems for cognitive-behavioural and emotional conflict regulation.

An overlapping region in the dACC has been implicated in the monitoring of conflict in both emotional and cognitive-behavioural conflict tasks. Where conflict resolution is concerned emotional processing is distinct in that it employs the rACC to regulate the response of the amygdala in a top down process. In high conflict situations the rACC inhibits the affective response of the amygdala. Once the task conflict is resolved the rACC decreases activity thereby restoring amygdala responsiveness in emotional processing (Etkin, Egner, Peraza, Kandel, & Hirsch, 2006)

These studies were however criticized for using faces as target stimuli as these are known to activate the amygdala. Therefore Ochsner et al. (2009) employed a flanker task using emotional and non-emotional words as stimuli, thus controlling for this effect of face stimuli. They concluded that bilateral regions of dACC, posterior medial frontal cortex (pmMFC) and dlPFC were activated in both emotional and cognitive response tasks. Affective conflict, however, further recruited rostral ACC and medial prefrontal cortex (mPFC).

The rostral ACC and mPFC are thus implicated in performing a generic negative emotion inhibitory function that can be recruited by other regions (e.g., dorsal ACC and mPFC and lateral PFC) when there is a need to suppress limbic reactivity (Etkin, Egner, & Kalisch, 2011). One again these brain areas must be incorporated into extended models of SAS and CS interaction as well as guided activation accounts.

HYPNOSIS

Theories of hypnosis are principally divided into state and non-state accounts. These theories have different outlooks at different stages of the hypnotic experience. State theorists hold that induction alters the state of the consciousness whereas non-state theorists hold that hypnotic induction is not needed for response to suggestions. State theorists hold that induction initiates a trance state which fundamentally alters brain mechanisms related to conscious control, whereas non-state theorists hold that participants are in a

state of altered belief not an altered state of consciousness. Contemporary state theorists hold that responses to hypnotic suggestion are due to dissociation or other special processes whereas non-state theories suggest that responses are due to expectancy, motivation and attitudes which are normal psychological processes. State theorists deem the hypnotizability of an individual stable over long periods of time whereas non-state theorists hold that suggestibility can be altered substantially by appropriate training and instruction (Lynn, Fassler, & Knox, 2005). Hypnosis research has been carried out in two ways – intrinsic research, which is the research on the processes of hypnosis itself, and instrumental research which uses hypnosis as a means to understand other psychological conditions (Oakley & Halligan, 2010).

POSSIBLE EVIDENCE FOR HYPNOSIS AS AN ALTERED STATE

Rainville, Hofbauer, Bushnell, Duncan, and Price (2002) used positron emission tomography (PET) before and after hypnotic induction in 10 participants to compare a non-hypnosis baseline to a hypnotic induction without further suggestion. So-called ‘neutral hypnosis’ was associated with increased metabolic activity in the brainstem, thalamus, ACC, right inferior frontal gyrus and right inferior parietal lobule. Self-reported relaxation during hypnosis was most strongly associated with increased regional cerebral blood flow (rCBF) to the occipital region and decrease in other cortical regions. By contrast self-reported absorption was most strongly associated with increased rCBF to the rostral ACC.

Deeley et al. (2012) investigated the “default mode” (the normal resting state) of brain activation during hypnosis. They found an altered pattern of brain activity (down regulation of the default mode network and up regulation of inferior frontal gyrus, midfrontal gyrus and precentral gyrus) as well as a decrease in spontaneous conceptual thought. Fingelkurts, Fingelkurts, Kallio, and Revonsuo (2007) using EEG found altered functional connectivity between brain areas in neutral hypnosis in a single hypnotic virtuoso. Weakened functional connectivity in hypnosis was found to relate to reported timelessness and detachment of self in the hypnotic experience. They also found that this state in this participant was stable when retested after one year.

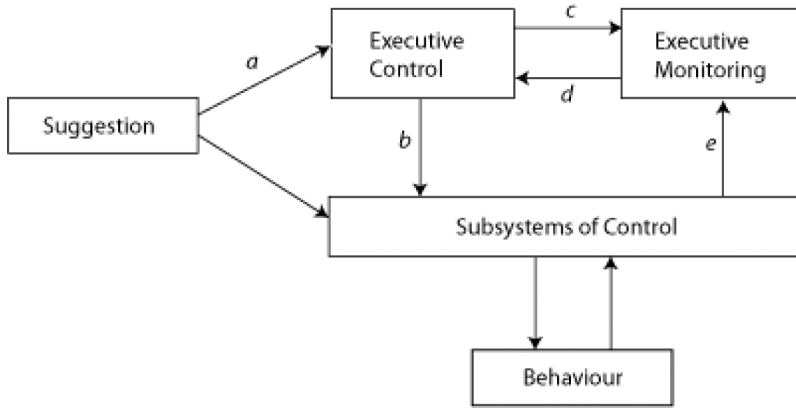
DISSOCIATION

Dissociation is the core process in most contemporary altered state accounts of hypnosis. Janet (1901) proposed the notion of dissociation as a cluster of mental processes that gets cut off or segregated from other processes. Due to this dissociation the process would be unavailable and unregulated by awareness and therefore become autonomous. On this account an individual should be able to engage in two (appropriately chosen) separate tasks, one requiring conscious control and another implemented by the dissociated processes, at the same time without interference. Hilgard (1977) developed Janet's idea to formulate neo-dissociation theory taking it out of the realm of pathological phenomena and abnormal processes and applying it to normal cognitive functioning. He proposed that, in susceptible individuals, hypnosis dissociates mental processors which temporarily results in parallel streams of controlled (conscious) processing. A hidden observer was proposed as the stream of consciousness that is aware of reality and orchestrates hypnotic responses and a second stream corresponding to hypnotized experience which remains unaware of the former stream. For example, in the case of suggestion pertaining to analgesia the hidden observer stream is fully aware of the pain, but the parallel stream is not. The hypnotized individual is not aware of the control processes which implement suggestions due to temporary amnesia-like barriers in the flow or availability of information. Hilgard proposed that hypnosis has the effect on the executive control system of (temporarily) weakening the ability to plan and initiating new behaviour, inhibition of monitoring functions as well as disrupting the feedback normally provided by monitoring (Brown, 2004; Sadler & Woody, 2010).

Bowers (1992) was influenced by Hilgard. However, he discarded the notion of amnesia-like barriers as implausible and distinguished between two distinct accounts of dissociation in hypnosis: dissociated experience (Hilgard's account) and dissociated control (his preferred alternative). Dissociated experience proposes that under hypnotic conditions, suggestion might engage the executive to a very high degree; however, the individual is unaware of this control and therefore experiences an (apparent) loss of volition accompanying hypnotic responses. Dissociated control proposes that the nature of the dissociation in hypnosis is that which occurs between the executive or supervisory attention system and the automatic subsystems which implement CS. Thereby the individual under hypnosis accurately perceives a loss of volitional control. Woody and Bowers (1994) elaborated dissociated

control based on Norman and Shallice's (1986) attentional control model. In addition to dissociated experience and dissociated control accounts what has been termed second-order dissociated control, a revision of dissociated control theory, has since been proposed by Jamieson and colleagues (Egner, Jamieson, & Gruzelier, 2005; Jamieson & Sheehan, 2004; Jamieson & Woody, 2007).

Figure 1



Reprinted from *The Oxford Handbook of Hypnosis* edited by Michael R. Nash & Amanda J. Barnier (2008) Ch. 4 'Dissociation theories of hypnosis' by Erik Z. Woody & Pamela Sadler pp. 81–110 Figure 4.2 from p. 90. By permission of Oxford University Press.

In each of these theories it is proposed that (refer to Figure 1) the SAS is comprised of separate executive control and executive monitoring functions, which parallels Hilgard's (1977) conception of the executive system comprised of monitoring and control functions. The CS coordinates automatic subsystems of unconscious control. The difference between these theories of dissociation, however, is in precisely how the integration between and within these various components of control breaks down (Woody & Sadler, 2008).

DISSOCIATED EXPERIENCE AND ITS POSSIBLE EFFECTS ON COGNITIVE AND AFFECTIVE CONTROL

In dissociated experience, the individual is not consciously aware of aspects of their response but the executive system is nonetheless highly active in the implementation of suggestions. This breakdown in the executive system occurs in the flow of information from executive control to monitoring (line *c* in Figure 1). Suggestion therefore activates the SAS control subsystem

directly but without representation in awareness. Suggestion can recruit control systems within the SAS for the generation of creative or non-schema governed responses. Without feedback from the SAS control to the monitor, this occurs outside of awareness (although its effects may be experienced).

The review of cognitive control implicated the dACC and vIPFC and in the case of affective control implicated the dACC and mPFC as the locus of the monitoring and appraisal functions of the SAS. It should therefore be expected in the case of dissociated experience that these cognitive and affective control systems may also become dissociated in hypnosis. Suggestion might therefore be able to recruit either the dlPFC in cognitive control suggestions or the mPFC and rACC in emotion regulation suggestions when under hypnosis in a way that uncouples the reciprocal feedback and control each exerts over the other.

DISSOCIATED CONTROL AND ITS POSSIBLE EFFECTS ON COGNITIVE AND AFFECTIVE CONTROL

In dissociated control theory by contrast SAS control functions are dissociated from the CS (line *b* Figure 1) and suggestion directly influences the organization of activity by the CS process. Suggestion therefore directly activates schema and there is no conscious control over the actions that are suggested. This account seems plausible if the suggestion is for modulation of a stereotyped behavioural, cognitive or perceptual process such as visual colour processing, word reading or mental arithmetic. However, it does not account for what transpires in the case of a novel suggested response (Brown & Oakley, 2004). This theory could then be interpreted as further implying that both the cognitive control the dlPFC and the affective regulation of the mPFC and rACC are dissociated from the contention scheduling system during hypnosis.

SECOND-ORDER DISSOCIATED CONTROL AND ITS POSSIBLE EFFECTS ON COGNITIVE AND AFFECTIVE CONTROL

Second-order dissociated control theory proposes that SAS control is active and able to modulate CS and there is a feedback loop available to SAS monitoring. However, within the SAS it is the feedback link from monitoring to control functions (*d* in Figure 1) that is degraded (dissociated). This would therefore imply that suggestion may influence the control component of the SAS which can select goals and modulate CS. However, as there is no updated

feedback from monitoring functions, even novel responses will be experienced as non-volitional. Hypnotic influences on cognitive control would therefore dissociate the vIPFC and dACC from the dlPFC and if extended to affective control the monitoring mPFC from the regulating rACC.

EVIDENCE FOR DISSOCIATION WITH RELATION TO THE THREE THEORIES

Kaiser, Barker, Haenschel, Baldeweg, and Gruzelier (1997) used a Stroop task to examine the dissociation between SAS and CS. Using EEG they found that against their expectation N_e , which is related to error detection and conflict monitoring and which is generated by the dACC, was similar in both the hypnotized and non-hypnotized condition for all subjects. However, the P_e , a later positive peak in the error related potential linked to awareness of error and correction (Falkenstein et al., 2000), was significantly higher in the non-hypnotized than in the hypnotized condition for higher susceptible subjects only.

This finding contradicts the dissociated experience account, which posits that hypnosis dissociates the monitor from directly receiving information from SAS control processes, as error monitoring was not disrupted in the hypnotic condition. In relation to dissociated control theories it fits only with a version in which monitoring remains active in the hypnotic condition.

Egner, Jamieson, & Gruzelier (2005) using event-related fMRI and EEG tested attention control during hypnosis. They used a Stroop-task and found that hypnosis impaired attention in individuals as opposed to the non-hypnotic condition. They found that conflict-related dACC activation was highest in the high susceptible group in hypnosis while for the low susceptible group the opposite was true. However, control related lateral inferior frontal cortex (LIIFC) activation was indistinguishable across all low and high groups in both hypnotized and non-hypnotized conditions. They concluded that this is due to a decoupling of top down control functions from the modulating feedback of conflict monitoring. Attention was seen to be diminished in the high susceptible group as their accuracy decreased in the hypnotized condition (Jamieson & Sheehan, 2004).

Dissociated experience theory does not seem to account for this finding in which monitoring functions appear intact. Dissociation of information flow appeared to occur from monitoring to control. Control-related ILPC activation was present in all conditions, which best fits with the second-order dissociated control theory.

REFERENCES

- Algom, D., Chajut, E., & Lev, S. (2004). A rational look at the emotional Stroop phenomenon: A generic slowdown, not a Stroop effect. *Journal of Experimental Psychology: General*, *133*, 323–338.
- Allain, P., Le Gall, D., Etcharry-Brouyx, F., Aubin, G., & Emile, J. (1999). Mental representation of knowledge following frontal-lobe lesion: Dissociations on tasks using scripts. *Journal of Clinical and Experimental Neuropsychology*, *21*, 643–665.
- Allport, A. (1987). Selection for action: Some behavioral and neurophysiological considerations of attention and action. In H. Heuer & A. F. Sanders (Eds.), *Perspectives on perception and action* (pp. 315–419). Hillsdale, NJ: Erlbaum.
- Baddeley, A. D. (1986). *Working memory*. Oxford: Oxford University Press.
- Badre, D., & Wagner, A. D. (2004). Selection, integration, and conflict monitoring: Assessing the nature and generality of prefrontal cognitive control mechanisms. *Neuron*, *41*, 473–487.
- Barber, T. X. (2000). A deeper understanding of hypnosis: Its secrets, its nature, its essence. *American Journal of Clinical Hypnosis*, *42*, 208–273.
- Bishop, S., Duncan, J., Brett, M., & Lawrence, A. D. (2004). Prefrontal cortical function and anxiety: Controlling attention to threat-related stimuli. *Nature Neuroscience*, *7*, 184–188.
- Botvinick, M., Cohen, J. D., & Carter, C. S. (2004). Conflict monitoring and anterior cingulate cortex: An update. *Trends in Cognitive Sciences*, *8*, 539–546.
- Bowers, K. S. (1992). Imagination and dissociation in hypnotic responding. *International Journal of Clinical and Experimental Hypnosis*, *40*, 253–275.
- Braver, T. S., & Bongiolatti, S. R. (2002). The role of frontopolar cortex in subgoal processing during working memory. *Neuroimage*, *15*, 523–536.
- Brown, R. J. (2004). Psychological mechanisms of medically unexplained symptoms: An integrative conceptual model. *Psychological Bulletin*, *130*, 793–812.
- Brown, R. J., & Oakley, D. A. (2004). An integrative cognitive theory of hypnosis and hypnotizability. In M. Heap, R. J. Brown, & D. A. Oakley (Eds.), *The highly hypnotizable person* (pp. 152–186). New York: Brunner-Routledge.
- Bush, G., Luu, P., & Posner, M. I. (2000). Cognitive and emotional influences in anterior cingulate cortex. *Trends in Cognitive Science*, *4*, 215–22.
- Deeley, Q., Oakley, D. A., Toone, B., Giampietro, V., Brammer, M. J., Williams, S. C. R., & Halligan, P. W. (2012). Modulating the default mode network using hypnosis. *International Journal of Clinical and Experimental Hypnosis*, *60*, 206–228.
- Desimone, R., & Duncan, J. (1995). Neural mechanisms of selective visual attention. *Annual Review of Neuroscience*, *18*, 193–222.
- Draper, D. C., & Klemm, W. R. (1967). Behavioral responses associated with animal hypnosis. *Psychological Record*, *17*, 13–21.
- Egner, T. (2011). Right ventrolateral prefrontal cortex mediates individual differences in conflict-driven cognitive control. *Journal of Cognitive Neuroscience*, *23*, 3903–3913.

- Egner, T., Etkin, A., Gale, S., & Hirsch, J. (2008). Dissociable neural systems resolve conflict from emotional versus nonemotional distracters. *Cerebral Cortex*, *18*, 1475–1484.
- Egner, T., & Hirsch, J. (2005a). Cognitive control mechanisms resolve conflict through cortical amplification of task-relevant information. *Nature Neuroscience*, *8*, 1784–1790.
- Egner, T., & Hirsch, J. (2005b). The neural correlates and functional integration of cognitive control in a Stroop task. *Neuroimage*, *24*, 539–547.
- Egner, T., Jamieson, G., & Gruzelier, J. H. (2005). Hypnosis decouples conflict monitoring and cognitive control functions of the frontal lobe. *Neuroimage*, *27*, 969–978.
- Etkin, A., Egner, T., & Kalisch, R. (2011). Emotional processing in the anterior cingulate and medial prefrontal cortex. *Trends in Cognitive Sciences*, *15*, 85–93.
- Etkin, A., Egner, T., Peraza, D. M., Kandel, E. R., & Hirsch, J. (2006). Resolving emotional conflict: A role for the rostral anterior cingulate cortex in modulating activity in the amygdala. *Neuron*, *51*, 871–882.
- Falkenstein, M., Hoormann, J., Christ, S., and Honsbein, J. (2000). ERP components on reaction errors and their functional significance: A tutorial. *Biological Psychology*, *15*, 87–107.
- Fingelkurts, A. A., Fingelkurts, A. A., Kallio, S., & Revonsuo, A. (2007). Cortex functional connectivity as a neurophysiological correlate of hypnosis: An EEG case study. *Neuropsychologia*, *45*, 1452–1462.
- Hilgard, E. R. (1977). *Divided consciousness: Multiple controls in human thought and action*. New York: Wiley-Interscience.
- Jamieson, G. A., & Sheehan, P. W. (2004). An empirical test of Woody and Bowers's dissociated control theory of hypnosis. *International Journal of Clinical and Experimental Hypnosis*, *52*, 232–249.
- Jamieson, G. A., & Woody, E. (2007). Dissociated control as a paradigm for cognitive neuroscience research and theorizing in hypnosis. In G. A. Jamieson (Ed.), *Hypnosis and conscious states: The cognitive neuroscience perspective* (pp. 111–129). Oxford: Oxford University Press.
- Janet, P. (1901). *The mental state of hystericals: A study of mental stigmata and mental accidents*. New York: Putnam.
- Kahneman, D. (1973). *Attention and effort*. Englewood Cliffs, NJ: Prentice-Hall.
- Kaiser, J., Barker, R., Haenschel, C., Baldeweg, T., & Gruzelier, J. H. (1997). Hypnosis and event-related potential correlates of error processing in a Stroop-type paradigm: A test of the frontal hypothesis. *International Journal of Psychophysiology*, *27*, 215–22.
- Koechlin, E., Corrado, G., Pietrini, P., & Grafman, J. (2000). Dissociating the role of the medial and lateral anterior prefrontal cortex in human planning. *Proceedings of the National Academy of Sciences*, *97*, 7651–7656.
- Lynn, S., Fassler, O., & Knox, J. (2005). Hypnosis and the altered state debate: Something more or nothing more? *Contemporary Hypnosis*, *22*, 39–45.
- MacLean, P. D. (1990). *The triune brain in evolution: Role in paleocerebral functions*. New York: Plenum Press.

- Milham, M. P., Banich, M. T., & Barad, V. (2003). Competition for priority in processing increases prefrontal cortex's involvement in top-down control: An event-related fMRI study of the Stroop task. *Brain Research Cognitive Brain Research*, *17*, 212–222.
- Miller, E. K., & Cohen, J. D. (2001). An integrative theory of prefrontal cortex function. *Annual Review of Neuroscience*, *24*, 167–202.
- Mohanty, A., Engels, A. S., Herrington, J. D., Heller, W., Ringo Ho, M. H., Banich, M. T., Webb, A. G., Warren, S. L., & Miller, G. A. (2007). Differential engagement of anterior cingulate cortex subdivisions for cognitive and emotional function. *Psychophysiology*, *44*, 343–351.
- Norman, D. A., & Shallice, T. (1986). Attention to action: Willed and automatic control of behavior (revised reprint of Norman & Shallice, 1980). In R. J. Davidson, G. E. Schwartz, & D. Shapiro (Eds.), *Consciousness and self-regulation: Advances in research and theory* (pp. 1–18). New York: Plenum Press.
- Oakley, D. A., & Halligan, P. W. (2010). Psychophysiological foundations of hypnosis and suggestion. In S. J. Lynn, J. W. Rhue, & I. Kirsch (Eds.), *Handbook of clinical hypnosis* (2nd ed.) (pp. 79–117). Washington, DC: American Psychological Association.
- Ochsner, K. N., Hughes, B. L., Robertson, E., Cooper, J. C., & Gabrieli, J. (2009). Neural systems supporting the control of cognitive and affective conflict. *Journal of Cognitive Neuroscience*, *21*, 1841–1854.
- Pavlov, I. P. (1927). *Conditioned reflexes: An investigation of the physiological activity of the cerebral cortex* (G. V. Anrep, Trans. and Ed.). London: Oxford University Press.
- Posner, M. I., & Petersen, S. E. (1990). The attention system of the human brain. *Annual Review of Neuroscience*, *13*, 25–42.
- Rainville, P., Hofbauer, R. K., Bushnell, M. C., Duncan, G. H., & Price, D. D. (2002). Hypnosis modulates activity in brain structures involved in the regulation of consciousness. *Journal of Cognitive Neuroscience*, *14*, 887–901.
- Ray, W. J. (2007). The experience of agency and hypnosis from an evolutionary perspective. In G. Jamieson (Ed.), *Hypnosis and conscious states: The cognitive neuroscience perspective* (pp. 223–240). Oxford: Oxford University Press.
- Rugg, M. D., & Wilding, E. L. (2000). Retrieval processing and episodic memory. *Trends in Cognitive Science*, *4*, 108–115.
- Sadler, P., & Woody, E. (2010). Dissociation in hypnosis: Theoretical frameworks and psychotherapeutic implications. In J. W. Rhue, S. J. Lynn, & I. Kirsch (Eds.), *Handbook of clinical hypnosis* (2nd ed.) (pp. 151–268). Washington, DC: American Psychological Association.
- Sheehan, P. W., & McConkey, K. M. (1982). *Hypnosis and experience: The exploration of phenomena and process*. Hillsdale, NJ: Lawrence Erlbaum.
- Shiffrin, R. M., & Schneider, W. (1977). Controlled and automatic human information processing: II. Perceptual learning, automatic attending, and a general theory. *Psychological Review*, *84*, 127–190.
- Vandenberg, B. (2010). Evidence, ontology and psychological science: The lesson of hypnosis. *Journal of Theoretical and Philosophical Psychology*, *30*, 51–65.

- van Veen, V., & Carter, C. S. (2002). The timing of action-monitoring processes in the anterior cingulate cortex. *Journal of Cognitive Neuroscience*, *14*, 593–602.
- Völgyesi, F.A. (1966). *Hypnosis of man and animals*. London: Billing & Sons Ltd.
- Wood, J. N., & Grafman, J. (2003). Human prefrontal cortex: Processing and representational perspectives. *Nature Review Neuroscience*, *4*, 139–147.
- Woody, E., & Bowers, K. (1994). A frontal assault on dissociated control. In S. J. Lynn & J. W. Rhue (Eds.), *Dissociation: Clinical and theoretical perspectives* (pp. 52–79). New York: Guilford Press.
- Woody, E. Z., & Sadler, P. (2008). Dissociation theories of hypnosis. In M. R. Nash & A. J. Barnier (Eds.), *The Oxford handbook of hypnosis* (pp. 81–110). Oxford: Oxford University Press.

HYPNOSIS IN THE TREATMENT OF CONVERSION DISORDER AFTER TRAUMA

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This case describes the use of hypnosis in the treatment of a man, Wilson, who, after sustaining injury to his face and eyes in the explosion of a coach car battery, suffered from both the conversion disorder of blindness and post-traumatic stress disorder. The battery exploded when Wilson lifted the coach's bonnet for a routine check-up at work. After thorough medical investigation, the doctors found that his vision problem could not be explained organically. Wilson was extremely hyperaroused. He avoided going to sleep and closing his eyes, worrying that he would lose the little vision that remained. He also suffered from distressing flashbacks, exhibited social withdrawal, became easily irritable with temper outbursts, and had fleeting suicidal thoughts. He was so overwhelmed and restless in the session that he had difficulty in following the cognitive-behavioural treatment approach. After some initial groundwork on educating the patient about the nature of his problems, Wilson was treated with hypnosis for anxiety reduction and trauma work. After some initial stabilization, hypnosis was used in adjunction with CBT. Through the use of hypnosis, his symptoms of PTSD were reduced and his visual ability was largely restored.

Keywords: hypnotherapy, PTSD, conversion disorder, CBT.

FAMILY AND SOCIAL HISTORY

Wilson, a 40-year-old married man, was referred for psychological assessment and treatment. As reported, he enjoyed a good relationship with his wife and two daughters. He was particularly close to his youngest child, who was still

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a toddler. In the family, he was the major decision-maker and his wife was used to relying on him. He worked as a coach driver for years. Wilson was responsible and hard-working, and spent most of his time in his job. He led a simple life with few leisure and social activities. He regarded himself as simple-minded and rational in style. No history of marked emotional disturbance was reported.

PRESENTING PROBLEMS

Incident

Wilson recalled doing the regular check-up on his coach after he returned to the car park of his company. When he lifted the bonnet, the car battery exploded. He felt pain over his face and eyes. He ran for a bottle of water in the vehicle to pour over his face. It was then that he noticed that his vision was blurred. At the time, Wilson did not think or feel anything, except getting out of the car park to look for help. Finally, he got to the main road, found help, and was sent to the hospital quickly.

The First Interview

In the intake session, one month after the accident, Wilson was restless and hyperventilating. According to the medical report, initial findings showed that he had corneal abrasion which was healing. His poor visual acuity and constricted visual field could not be explained organically. Wilson described his visual ability as similar to that of a person who was almost blind. He could not recognize objects beyond an arm's length. He could not go out on his own. He could barely manage basic self-care routines. Moreover, he had to endure a non-stop burning sensation in his eyes and tinnitus. Depressive and anxiety features were noted, including temper outbursts, irritability, poor appetite, poor sleep, pessimistic thoughts, and social withdrawal. As Wilson was so afraid of losing his residual vision, he would not allow himself to close his eyes for rest and sleep. However, Wilson related no re-experiencing of the accident, whether in the form of flashbacks or nightmares. While describing the accident in the session, Wilson showed no fear response.

The Second and Third Interviews

Wilson presented a whole range of traumatic reactions in the second session, more than two weeks after the intake session, and in the third interview a

fortnight later. He described being scared by the bursting sound of a car tyre when he was walking in the street. After this incident, he started to dream of this and of being blind. He became hyper-vigilant and showed startled responses whenever he heard any unexpected sounds. Wilson also avoided going into a nearby car park as it resembled the one where the accident took place. In the sessions, Wilson was helped to combat the fear of losing his vision with the cognitive-behavioural approach. However, he showed difficulty in concentrating on the conversations. When the psychological perspective of his blindness as a post-traumatic reaction was suggested, Wilson doubted that the accident could have had such severe impact on his psychological functioning, as he felt hardly anything at the time of the accident. Numbness as a psychological mechanism for survival and protection at times of threats was proposed. As Wilson expressed his willingness to accept any possible explanation and to try anything that could help him recover, hypnosis was suggested. Myths over losing control and dependence on the hypnotist were clarified.

DIAGNOSIS AND DISCUSSION

According to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; APA, 1994), Wilson was diagnosed as suffering from conversion disorder of sensory deficit subtype and post-traumatic stress disorder (PTSD). The blindness cannot be fully explained by an organic medical condition after relevant investigations. It was apparent that the blindness was a traumatic response as it started right after the battery explosion. Furthermore, clinical interviews did not suggest any signs of factitious disorder or malingering. Wilson presented to be a responsible and hard-working person who highly valued self-reliance. Neither were there any stressors suggesting the need for assuming a sick role or the motive to obtain financial compensation. In fact, the blindness caused significant distress in all aspects of Wilson's life, and he showed strong motivation to recover.

Regarding PTSD, Wilson presented some delay in the manifestation of the symptoms. Full-blown symptoms only surfaced when the auditory cue of explosion was triggered by the incidental event of the bursting of a car tyre. Wilson re-experienced the accident in nightmares, avoided any stimuli associated with the trauma, and showed persistent symptoms of hyperarousal. It was hypothesized that Wilson was traumatized and fixated on the accident at the time of the explosion, with heightened arousal, sensory loss, and repressed memories.

Hypnosis has been used and documented in the treatment of trauma for more than a century (Brom, Kleber, & Defares, 1989; Bryant, Moulds, Guthrie, & Nixon, 2005; Cardena, Maldonado, van der Hart, & Spiegel, 2000; Evans, 1991; Jiranek, 2000; Leung, 1994; Spiegel, 1988; Spiegel, Koopman, & Classen, 1994). Evans (1991) indicated that hypnosis may be used to uncover repressed memories of traumatic events, to release suppressed emotions, to control the client's anxiety, to reintegrate the psychic split caused by the trauma, and to help the client develop a sense of mastery over his or her life.

Moreover, sufferers of PTSD also tend to have high levels of suggestibility (Evans, 1994; Spiegel, Hunt, & Dondershine, 1988; Stutman & Bliss, 1985). The value of using hypnosis is particularly obvious in the present case. The patient was so overwhelmed that priority should be given to reducing the extremely high level of arousal. Hypnosis demonstrates the ability to induce a relaxation response and a state of neurological desensitization (Everly & Lating, 2004). The use of hypnosis in the early phase is also beneficial because treatment that commences shortly after the onset of symptoms is usually the most effective (Evans, 1991; McFarlane, 1989; Spiegel et al., 1994).

TREATMENT

Session 1 (one week after the third interview)

The Stanford Hypnotic Clinical Scale for Adults (Morgan & Hilgard, 1975) was administered to the patient. Wilson got 3.5 out of a total score of 5, which suggested that he was a suitable hypnotic subject.

Right after the assessment, Wilson was introduced to his first hypnosis session for the purpose of anxiety management. Wilson was led into trance by the reverse arm levitation (arm lowering) method (Erickson, 1980) and the stairs script (Allen, 1997). He was then taken to his serenity place (Hammond, 1990) with an emphasis on relaxation and safety. Wilson responded promptly to the induction and looked relaxed. He reported no images of the stairs or the serenity place. Although he remained tense, he felt a sense of lightness after he came out of the trance. The session was audio-taped for him to regularly listen to at home.

Session 2 (two weeks later)

Owing to the poor quality of the audio-tape, Wilson could not listen to it in between the two sessions. After the first hypnosis session, he was able to feel

relaxed the whole day until he went to bed, at which point he became anxious again. Meanwhile, a strange event happened. A large piece of earwax fell out from one of Wilson's ears after he returned home from the session. Later on the same day, another piece of earwax also got dislodged and fell out from his other ear while he was bathing. Wilson felt a lessening of the clicking sound of his tinnitus and less "stuck" as a whole. Moreover, Wilson saw nearby objects as brighter than before. The progress seemed to be symbolic of Wilson gradually emerging from/becoming released from the repression, in that he was not just being rid of the emotional tension but also from his sensory restrictions.

The usual induction and deepening methods were used in this session. Then the script on ego-strengthening by Hartland (1971) was adapted for use with Wilson. The suggestions of a warm sensation and power around the heart area were added. Wilson responded well in the stages of induction and deepening. He felt as if he was floating in the air and felt warmth around his chest. The right side of his body also became lighter (the right arm was reverse levitated in the induction). He was pleased with the progress, though worried that the effects of the hypnosis would soon be lost. Myths about hypnosis were clarified and reassurance was given. The session was taped and the tape was given to Wilson. Problem solving skills regarding his daily life adjustment due to his limited vision were again discussed.

Session 3 (1 week later)

Wilson reported improved sleep. His nightmares reduced from a daily occurrence to a frequency of three to four times per week. The theme of his nightmares also changed from being in total darkness to being at the scene of the accident. His anxiety level was also reduced. Moreover, he could see things more brightly, although the right visual field was still dimmer than the left visual field. Given the progress, Wilson expressed increased confidence.

After the induction and the deepening phase, Wilson did the ego-strengthening script (Hartland, 1971), followed by the first part of the healing script of Hunter (1994). Hunter's script emphasized the power of the healing imagery. Wilson reported the warm sensation over his chest and the feeling of lightness in his lower limbs after he was reoriented back. Moreover, Wilson was educated about the mind-body connection, the nature of anxiety, as well as anxiety management with cognitive skills.

Session 4 (two weeks later)

Wilson's sleep continued to improve. The frequency of nightmares slightly reduced to two to three times per week. There were no more nightmares around darkness, and all were related to the accident. Most importantly, Wilson showed much improvement in his visual ability. He could see contours and colours again, and find his way around in familiar places. Wilson's description of himself changed from being an almost-blind person to being a seriously short-sighted person without glasses. His mood and confidence were boosted further. Before starting hypnosis in the session, Wilson was assisted to give an account of the accident in detail. He was then prepared for the trauma and the abreaction work.

The steps of hypnosis for trauma work with Wilson were: (a) to establish protection by adapting the script of "the protective shield" (Hammond, 1990); (b) to ask for permission to go back to the trauma by an ideomotor signal; (c) to conduct age regression by adapting the script of "the book of time" (Hammond, 1990); and (d) to facilitate abreaction by expression of feelings and verbalization.

Wilson was deeply in trance. Once he regressed to the scene of the accident he started to become agitated, hyperventilate and half-open his eyes displaying a fearful facial expression. Wilson could verbalize his fear and the helplessness he felt at the time of the accident. After he was helped to put up the protective shield, he calmed down again. When he came out of the trance, Wilson reported that the protective shield was not strong enough and he was still feeling very anxious. To reinforce the power of the shield, as well as to restore a sense of security, Wilson was put back into trance, but this time he only went through the script of the protective shield. He became less anxious. In the post-hypnotic discussion, Wilson was debriefed about the purpose of the trauma work and the meaning of the abreaction.

Session 5 (two weeks later)

Wilson experienced heightened anxiety on the first two days after the last session. There were no changes in his nightmares and visual ability but he was disappointed at the slow progress compared with the earlier sessions. Frustrated, his mood deteriorated and he became irritable again. He was also disturbed by the persistent dryness and burning sensation in his eyes. Wilson was helped to adopt a realistic expectation over the course of treatment and was advised on mood regulation.

In this session, the hypnosis focused on working the discomfort in Wilson's eyes by adapting Hammond's script of "numbing your pain with glove anesthesia" (Hammond, 1990). Wilson easily went into trance. He could feel the numbness over his hand, but failed to transfer it to his eyes. The script was repeated and geared to his real life experience by suggesting that he put a can of cold soft drink on his eyes for relief from the burning sensation. Wilson could imagine the cold drink and feel the coldness around his eyes this time. The burning sensation was partially relieved.

Session 6 (one week later)

Conditions (e.g., the eyes' burning sensation, the nightmares and the visual problem) were more or less the same. Since Wilson found it hard to use the protective shield to calm down when he was in distress he was then prepared to build up a stronger and safer object in hypnosis. He chose his being in hypnosis as his safe image. He also preferred to use a real life experience of watching a video instead of reading a book for the regression work.

After the usual stages of induction and deepening, regression was conducted for Wilson to go back to the best hypnotic session he had experienced. Instead of turning pages, he did the searching with a video device. Once he entered the safe image, disturbing scenes such as a sudden loud noise in restaurants or pain over his eyes were introduced. He was led back and forth between the safe and the disturbing images.

Wilson entered trance promptly. In watching the video, he felt that he was inside the previous hypnosis session instead of watching himself being in hypnosis. Then he spontaneously went to the beach instead of sticking with the hypnosis image. Wilson could use the safe image to combat the anxiety brought about by the disturbing scenes.

Session 7 (two weeks later)

Wilson reported no improvement in his vision. Upon reviewing the last session, he preferred a shorter script and changed the safe image to playing with his daughter, which was a more touching experience for him.

In the trance, Wilson used the video device to search for the safe image. Images of minor nuisance were then introduced. He was led back and forth between the safe and the nuisance images. The safe image of playing with his daughter became more vivid with colour. He could use it to relax and keep the disturbing scenes at bay.

Session 8 (two weeks later)

Due to a lack of progress, Wilson appeared impatient and felt disappointed. He doubted whether psychological treatment could really help him recover. As time passed, he pressed himself harder and found it more difficult to concentrate when listening to the tapes. His anxiety and his doubt were addressed. The earlier hypnosis sessions were reviewed and revised with him. Finally a much shorter and simpler script was chosen.

The shortened version of ego-strengthening by Hartland (1971) was repeated. Then it was suggested to Wilson that he go directly to the safe image. The image was strengthened by adding a cue word and a bodily anchor. A post-hypnotic suggestion using these cues to return to the safe image when needed was installed. After Wilson was reorientated, he reported feeling easy and comfortable in every step, and he felt good to continue with hypnosis.

Session 9 (three weeks later)

Wilson felt good listening to the previous hypnosis session on tape and reported feeling less fearful in the nightmares. He was prepared to regress to the trauma again in this session.

The safe image was suggested in trance. Before the regression, it was emphasized that the unconscious would ensure that the emotions experienced would be within Wilson's window of tolerance. Wilson was then regressed back to the accident and told to go to the safe image whenever he felt overwhelmed. This process was repeated twice. When the unconscious was asked whether it could proceed further, the answer from the ideomotor signal was "no." Finally Wilson returned to the safe image and was then reoriented back to the present reality.

This time Wilson could follow through with the regression though he tensed up in the process. He exhibited a lot of eyeball movements while regressing to the accident scene. His level of anxiety reduced in his second attempt to re-enter the trauma scene and he found it easier to switch back to the safe image. After coming out from trance, Wilson reported feeling sore over his shoulders and his neck. He also felt less frightened when compared with his first attempt at trauma processing in the third session.

Session 10 (one week later)

Wilson's close friend died in a traffic accident the day after his last session. His mood was low and he was restless in sleep. However, he only dreamt of the car

accident once. The explosion scene also became less vivid when recalled. His visual ability and the burning sensation in his eyes remained the same. Some time was spent on working on his grief. As Wilson was in bad shape, having lost his friend, trauma work was suspended temporarily. This session focused on symptomatic relief.

The script for migraine was adapted (Hammond, 1990). Suggestions of warm limbs, cool forehead and cool eyes were made. Wilson reported warm limbs, but no sensation of coolness. His real life experience was again used to induce the sensation of coolness. He imagined his feet being in hot water with Chinese herbs while he put an icy eye patch on his eyes. Wilson reported slight coolness over the eye area, but the sensation faded quickly once he was out of trance.

Session 11 (three weeks later)

Wilson's nightmares were reduced to once per week. In the dreams, he felt less fearful and the details became vague. He was also less resistant to going to the nearby car park. However, Wilson shifted to worry about his job and his financial problems. He became depressed over the death of his close friend and the uncertain future he was facing. He listened less frequently to the hypnosis tapes and found the suggested coolness short-lived. In the session, mood management was advised. This session focused on ego-strengthening, given the increasing stress Wilson was experiencing. Also this session worked on eliciting state-dependent memory systems that encoded the symptom so as to facilitate physical change.

After Wilson was put under trance, the ego-strengthening script was repeated. Then the protocol of Madrid and Barnes (1991) was used with some adaptations. Wilson was presented with a list of possible factors that could affect his recovery. He was asked to think about each factor and respond by giving an ideomotor signal of its relevancy. The following factors were presented to Wilson:

“Consider yourself as relaxed and comfortable” (Answer: Yes)

“Tell your body to heal and to just do the healing” (Answer: No)

“Tell yourself that you will heal by building up more confidence” (Answer: Yes)

“The trauma was over and you can let your eyes see” (Answer: Yes)

Wilson was very relaxed and reported lightness of his body. Time distortion was obvious as he thought it was a short session, when in fact there was a long

lapse of time. He had no recall of the “factors” and only felt that he gave his ideomotor signals automatically.

Session 12 (two weeks later)

Wilson reported increased visual acuity for far-away objects. Though the progress in vision was not as drastic as in the early sessions, he felt uplifted by the progress after a prolonged period of stagnation. During this two-week interval there were two bad dreams, but little fear in them and also no waking up in the middle of the night.

Under trance, the scripts for ego-strengthening and healing power were repeated. Then statements with a “yes” answer from the previous session, such as “the trauma is over and you can let the eyes see,” were emphasized and strengthened. Wilson responded fast and easily.

Session 13 (three weeks later)

Wilson’s vision further improved. He rated that he had recovered 70% of his vision. He could do exercises and carry out daily activities in a spontaneous manner. Nightmares were reduced to two in the past three weeks, without much fear. Though improved, Wilson was frustrated at being unable to resume driving. His sleep turned restless again. An up-and-down course of the process of rehabilitation was highlighted and adjustment to a new level of visual ability was discussed.

Under trance, the “staircase imagery” (Hammond, 1990) for sleep was adapted for Wilson. It was suggested to him that he sleep in a comfortable and pleasant room for longer uninterrupted sleep. He was deeply relaxed, feeling that part of him was sleeping and another part of him was listening.

Sessions 14–20 (few weeks in interval)

Wilson was in bad shape. He tried to drive, but failed. Conflict with his wife increased. Finally, Wilson separated from his wife. His mother suffered from terminal cancer and he was in grief. He presented a whole range of clinical depression symptoms including low mood, crying spells, insomnia, loss of interest in daily activities, and fleeting suicidal ideations. Attempts were made to put him back on hypnosis, but he resisted and was restless. Hypnosis was therefore suspended. His vision was maintained at the 70% level, but he had nightmares with themes of loss two to three times per week. Treatment focus turned to work on his depression and on suicide prevention.

DISCUSSION

This case demonstrated the effectiveness of hypnosis in working with a complicated case where conversion disorder co-existed with PTSD. Sufferers of PTSD tend to show low compliance and a tendency to drop out from therapy (Burnstein, 1986). First and foremost, Wilson's initial experience with hypnosis in the assessment stage gave him a sense of hope and a sense of control. He was then so overwhelmed by the dread of blindness that he was not receptive to cognitive and relaxation skills conducted in the normal fashion. However, the experience of being calmed down in hypnosis, which he previously thought was unachievable, enhanced his sense of self-efficacy. Second, the hypnosis experience helped Wilson to loosen the state of frozen fear that seemed to have been maintained by an inappropriate appraisal, probably on an unconscious level, of the continual presence of the threats of danger when in fact the danger was already over. Third, the relaxed experience in hypnosis helped Wilson to lower his reactivity to anxiety-provoking situations, such as darkness, which in turn allowed him to find the room in later sessions to improve his coping and to do work in trauma processing.

Hypnosis was also particularly suitable for Wilson, whose thinking style was concrete, linear, pragmatic, and rigid. It was difficult for him to consider the possibility that the accident had adverse psychological impacts on him, given that he could recall no fear response at the time it occurred. He had more than once doubted the hypothesis of repression in the sessions. It was probably an even weirder thought for him that the loss of vision might be related to his unconscious working to fend for survival and protection against threats of danger as a result of the accident. Reduced capacity for critical thinking in hypnosis is well documented (Clarke & Jackson, 1983; Shor, 1969). Evidently, Wilson was more susceptible to accepting therapeutic communications in a hypnotic context.

Many studies report cases of severe abreaction when treating PTSD patients in hypnosis (Mutter, 1986, 1987; Peebles, 1989). Wilson also showed a strong abreaction response in Session 4. The hypnosis regression allowed him to successfully retrieve the repressed memories of his traumatic experience. At the same time, it was important to prevent Wilson from having a panic reaction during abreaction. It was essential that Wilson had some forms of protection before regression work could proceed. The suggestions for symptom relief such as reducing the eyes' burning sensation also helped to lower Wilson's anxiety and elicit his cooperation.

Nevertheless, it was unfortunate that Wilson developed depression of moderate severity at the later stage of therapy, and he hesitated to continue with hypnosis. In fact, depression often coexists with PTSD (Green, 1994). Wilson encountered many stressors in the later stage of his treatment, including the compensation issue, a strained marital relationship, and his mother suffering from terminal cancer. Evidently, treatment had not yet reached the final stage of reintegrating the trauma experience into the patient's consciousness. Although the symptoms of the conversion disorder were largely resolved, there were still some residual effects from the trauma. Evans (1994) states that the practitioner should distinguish the treatment goal of lessening the patient's intrusive memories from the treatment goal of relieving the patient's feelings of loss, anxiety and depression in relation to the traumatic event. All the different goals should be addressed and treatment should also deal with the whole range of painful emotional states evoked by the traumatic event. In retrospect, more attention should have been paid to ego-strengthening, addressing Wilson's mounting frustration in the treatment process, and the problem of social detachment in the middle and the later stages of treatment.

REFERENCES

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, D.C., Author.
- Allen, R. P. (1997). *Scripts and strategies in hypnotherapy*. London: Crown House Publishing.
- Brom, D., Kleber, R. J., & Defares, P.B. (1989). Brief psychotherapy for post-traumatic stress disorder. *Journal of Consulting and Clinical Psychology, 57*, 607–612.
- Bryant, R. A., Moulds, M. L., Guthrie, R. M., & Nixon, R. D. V. (2005). The additive benefit of hypnosis and cognitive-behavioral therapy in treating acute stress disorder. *Journal of Consulting and Clinical Psychology, 73*, 334–340.
- Burstein, A. (1986). Treatment noncompliance in patients with post-traumatic stress disorder. *Psychosomatics: Journal of Consultation Liaison Psychiatry, 27*, 37–40.
- Cardena, E., Maldonado, J., van der Hart, O., & Spiegel, D. (2000). Hypnosis. In E. B. Foa, T. M. Keane, & M. J. Friedman (Eds.), *Effective treatments for PTSD* (pp. 247–279). New York: Guilford Press.
- Clarke, J. C., & Jackson, J. A. (1983). *Hypnosis and behavior therapy: The treatment of anxiety and phobias*. New York: Springer.
- Erickson M. H. (1980). *The collected papers of Milton Erickson. Erickson on hypnosis* (Vols 1-4; E. L. Rossi, Ed.). New York: Irvington.
- Evans, B. J. (1991). Hypnotisability in post-traumatic stress disorders: Implications for hypnotic interventions in treatment. *Australian Journal of Clinical and Experimental Hypnosis, 19*, 49–58.

- Evans, B. J. (1994). Understanding post-traumatic stress disorder: Treatment implications. In B. J. Evans (Ed.), *Hypnosis in the management of anxiety disorders* (pp. 51–76). Heidelberg: Australian Society of Hypnosis.
- Everly, G. S., & Lating, J. M. (2003). *Personality-guided therapy for posttraumatic stress disorder*. Washington, DC: American Psychological Association.
- Green, B. (1994). Traumatic stress and disaster: Mental health effects and factors influencing adaptation. In F. Liehmac & C. Nadelson (Eds.), *International review of psychiatry: Vol. II*. Washington, DC: American Psychiatric Press.
- Hammond, D. C. (Ed.) (1990). *Handbook of hypnotic suggestions and metaphors*. New York: W. W. Norton.
- Hartland, J. (1971). *Medical and dental hypnosis and its clinical applications*. London: Bailliere Tindall.
- Hunter, M. E. (1994). *Creative scripts for hypnotherapy*. New York: Brunner & Mazel.
- Jiranek, D. (2000). Use of hypnosis in pain management and post-traumatic stress disorder. *Australian Journal of Clinical and Experimental Hypnosis*, 28, 176–187.
- Leung, J. (1994). Treatment of post-traumatic stress disorder and hypnosis. In B. J. Evans (Ed.), *Hypnosis in the management of anxiety disorders* (pp. 101–110). Heidelberg: Australian Society of Hypnosis.
- Madrid, A. D., & Barnes, V. D. H. (1991). A hypnotic protocol for eliciting physical changes through suggestions of biochemical responses. *American Journal of Clinical Hypnosis*, 34, 122–128.
- McFarlane, A. C. (1989). The aetiology of post-traumatic morbidity: Predisposing, precipitating and perpetuating factors. *British Journal of Psychiatry*, 154, 221–228.
- Morgan, A. H., & Hilgard, E. R. (1975). Stanford Hypnotic Clinical Scale and the Revised Stanford Hypnotic Clinical Scale for Children. *American Journal of Clinical Hypnosis*, 21, 134–147.
- Mutter, C. B. (1986). Post-traumatic stress disorder. In E. T. Dowd & J. M. Healy (Eds.), *Case studies in hypnotherapy* (pp. 34–45). New York: Guilford Press.
- Mutter, C. B. (1987). Post-traumatic stress disorder: Hypnotherapeutic approach in a most unusual case. *American Journal of Clinical Hypnosis*, 30, 81–86.
- Peebles, M. J. (1989). Through a glass darkly: The psychoanalytic use of hypnosis with post-traumatic stress disorder. *International Journal of Clinical and Experimental Hypnosis*, 37, 192–206.
- Shor, R. (1969). Hypnosis and the concept of the generalised reality-orientation. In C. Tart (Ed.), *Altered states of consciousness*. New York: Wiley.
- Spiegel, D. (1988). Dissociation and hypnosis in post-traumatic stress disorders. *Journal of Traumatic Stress*, 1, 18–33.
- Spiegel, D., Hunt, T., & Dondershine, H. E. (1988). Dissociation and hypnotisability in post-traumatic stress disorders. *American Journal of Psychiatry*, 145, 301–305.
- Spiegel, D., Koopman, C., & Classen, C. (1994). Acute stress disorder and dissociation. *Australian Journal of Clinical and Experimental Hypnosis*, 22, 11–23.

THE USE OF HYPNOSIS FOR THE TREATMENT OF ANXIETY IN ATYPICAL CARDIAC DISORDER

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Hypnosis has been widely used in the management of anxiety in a variety of conditions. This case describes the use of hypnosis in the management of anxiety in an atypical cardiac disorder. The patient, David, suffered from Brugada syndrome with the risk of lethal arrhythmia and was required to implant a cardiac defibrillator, which would deliver an electric shock if a dangerous arrhythmia was detected. The anxiety over the unpredictability of the electrical shock was so overwhelming that it greatly affected David's quality of life and strained his physical condition. Hypnosis was used in adjunction with CBT for this intrinsically threatening condition. Through the use of hypnosis, David's anxiety was eliminated and his self-efficacy was enhanced.

Keywords: hypnosis, Brugada syndrome, cardiac arrhythmia, CBT.

FAMILY AND SOCIAL HISTORY

David, a 50-year-old married man, enjoyed a stable relationship with his wife. Their only daughter was studying overseas and was well adjusted. David, who ran a family air-conditioning business with his wife, was often required to travel by plane and worked long hours. He enjoyed his work and planned to expand his business. He maintained regular social networks with his extended family and his friends. In spite of having gone through a number of crises in his business over the years, David had resiliently overcome the difficulties. No history of marked emotional disturbance was reported.

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PRESENTING PROBLEMS

David had a blackout while working late one evening at his office. He went through a body check and was subsequently diagnosed of Brugada syndrome. This is a genetic arrhythmia that causes the bottom chambers of the heart to beat rapidly to a point that blood is prevented from circulating efficiently in the body. This can lead to ventricular fibrillation (syncope), which may cause the individual to faint and possibly die in a few minutes if the heart is not reset. After the diagnosis, a cardiac defibrillator was promptly implanted in David's chest. In the first two months, David responded with composure and lived his life as usual, with frequent travel. It was not until he experienced two episodes of syncope followed by the electric shock of the defibrillator that he became extremely anxious. David described the shock as painful, followed by extreme fatigue. The most terrible moment was the experience of the loss of heartbeat with a sense of impending death just prior to experiencing the electric shock. From then on, David experienced chest discomfort, sudden fear, shortness of breath, chronic fatigue, poor sleep, and low mood. In fear of losing the heartbeat, he would hit his chest with his fist while pacing up and down. Since then, David stopped most of his business activities, though he continued to work long hours in his office. As he often failed to remain seated for more than half an hour, he began to avoid social and family gatherings. Afraid of being alone and of travelling without company, David lost confidence and felt lost about the future.

PSYCHOLOGICAL INTERVENTION

Seven treatment sessions based on the cognitive-behavioural approach were offered in the first five months after the intake interview. David seemed tense and paused from time to time during the conversations due to chest discomfort. He had a rational style of coping and had quite strong views. It took time to build rapport and to build his level of receptivity to advice. In the initial stage, treatment focused mainly on understanding his anxiety reactions and their impacts on his daily life, helping him to differentiate "false alarm" from "real threat," gearing him towards a realistic expectation of his treatment, and supporting him to reschedule his daily activities. Later, David was given biofeedback assessment and training. He showed a very poor breathing pattern of hyperventilation and breath-holding after exhalation. His heart rate variability, an index of the adaptability of the heart, was also extremely poor. He was trained in diaphragmatic breathing and respiratory sinus arrhythmia.

Under intervention, David showed reduced anxiety, particularly over the minor chest discomfort. He also reduced his maladaptive coping behaviours such as hitting his chest and hyperventilation. Regular practice of diaphragmatic breathing was helpful to decrease the symptoms of dizziness and shortness of breath. His daily life schedule now included a one-hour walk after work, and rest at fixed intervals.

Nevertheless, David's unstable medical condition presented him with significant life challenges. His anxiety level shot up after a regular medical check-up that showed presence of numerous "near-miss" episodes, as well as after he discovered that he was the worst case among the few cases locally, and that it was costly to change the time-limited battery of the cardiac defibrillator. His medical conditions deteriorated after some initial stabilization of his mood. Episodes of electric shock became more frequent, with up to 10 episodes in a fortnight, and there were many near-miss episodes. As the shocks did not just happen in daytime, but also at night, before and during sleep, David became extremely anxious when he went to bed. He woke up almost every hour until he eventually drifted off into sleep after long hours of apprehension.

In view of David's circumstances, hypnosis was introduced with the goals of alleviating his extremely high level of anxiety, boosting his confidence so as to face the difficulties brought by his unstable medical conditions, and enhancing his ability to maintain his daily activities as far as possible. Hypnotherapeutic techniques have been found to be useful for anxiety management (Edmonston, 1981; Evans & Coman, 2003; Hammond, 2010; Stanley, Burrows, & Judd, 1990). It reduces the patient's emotional reactions and enhances his/her ability to relax. When patients' senses of control are enhanced, there is also a positive shift in their locus of control and their self-efficacy.

Session 1

Based on the Stanford Hypnotic Clinical Scale for Adults (Morgan & Hilgard, 1975), David scored 2.5 out of a total score of 5. The medium score indicated that he was a suitable subject for hypnosis but that more efforts should be put on trance induction and maintenance. David indicated initial chest discomfort, but he showed no fear when he was put at rest in the assessment. He felt relaxed after he was reoriented back to external reality from the trance state. David was prepared to adopt an accepting attitude and was advised to gently shift his attention back to the script when he was distracted by anxious thoughts or somatic discomfort.

Session 2 (two weeks later)

David was in poor shape as he had experienced an episode of electric shock a few hours before the session. He was reminded of the relaxing experience in the first hypnosis session. The induction phase involved reverse levitation (Erickson, 1980), followed by deepening through the stairs script (Allen, 1977). David was then taken to his serenity place (Hammond, 1990). The shortened version of the serenity place was used, with an emphasis on being safe and relaxed. David was fidgeting in the beginning, but soon calmed down. As reported, he encountered four or five episodes of chest discomfort, but it stopped in the second half of the session. David needed to take a long time to lower his arm in the induction. He also reported no image or sense of relaxation in the deepening stage. However, at the last two steps in the stairs script, he snored as if he was falling asleep. Repeated reminders to stay awake by asking him to take deep breaths and to give ideomotor signals of his level of concentration were required. David could not recall the serenity place, and it took some time to reorient him back to external reality. He appeared much more relaxed after the hypnosis and enjoyed the session. The hypnosis part of the session was recorded on a CD for David to listen to at home.

Session 3 (two weeks later)

David revealed having more episodes of electric shock in the past two weeks. Increased anxiety was reported. His sleep was improved after he took the advice of taking walks after work. He tried to listen to the hypnosis CD a few times, but often could not complete the listening owing to an increasing sense of discomfort under a prolonged period of rest. David was reminded of the purpose and the need of regular practice. He was then prepared for a shorter script. David was led into a trance by the eye fixation method (Erickson, 1980) and the stairs script (Allen, 1977). Then it was suggested he go to a garden with trees and a lake. A section from Allen's experience induction (Allen, 1997) was adapted here. It was suggested to David that he "throw a stone into the lake, watch the stone sink, and wait for the ripples to quiet down." This image was intended to imitate David's experience of electric shock, with the implicit meaning that the shocks would pass, and calmness and safety would return eventually. David tuned in quickly, with much less fidgeting and discomfort than in the last session. Similarly, he fell asleep easily and snored, needing constant reminders to stay awake. This might be related to his fatigue over prolonged anxiety and his cardiac problem. David reported no recall of the garden, but

had vivid images of how he threw the stone into the lake and how it sank into the water. It took a long time to reorient him. The experience was positive.

Session 4 (three weeks later)

David's medical condition deteriorated with over 10 episodes of electric shock in the preceding two weeks. Finally, he had to be admitted to hospital and was put on a new drug that was still in the experimental stage. At this time, he had two episodes of electric shock during his sleep. Afterwards, he dreaded going to sleep and woke up hourly. He avoided using the hypnosis CD in the daytime, but regularly listened to it before sleep. It helped him fall asleep easily, but he kept waking up throughout the night. David often woke up feeling hot, with chest discomfort.

Following the induction by eye fixation, David was led to the "temperature hallucination" of drinking from a cold spring water under the hot sun in the Creative Imagination Scale (Wilson & Barber, 1978). Further suggestions of "walking into the river for a swim, and then noticing and sensing the coolness of the water first in the feet, then in the knees, thighs, hips, abdomen, and finally in the chest" were added. The purpose of this script was to reduce the sensation of hotness as a trigger for David's chest discomfort that usually alarmed and woke him up. Spring and river images were chosen as David responded well to images related to water.

David reported no signs of chest discomfort in this session. He quickly relaxed, but snored in the induction phase. He had no recall of the hot weather and the drinking, but felt the coolness rising from his feet to his chest. The coolness was comfortable and relieving.

Session 5 (one week later)

David reported no episode of electric shock in the week after taking the new medicine. He indicated reduced anxiety and improvement in concentration. He relied on the hypnosis CD and could quickly fall into sleep, but still woke up two or three times every night. Reduction of the hot sensation and enjoyment of coolness were also reported.

After the usual induction, the suggestions for sleep disturbance adapted from Garver (1990) were used with David. Garver's suggestions were about good sleep memory and emphasized safe sleep, waking up only in an emergency. David was guided to a river metaphor with the following suggestions: "Your sleep is like water flowing down gently from the upper river to the lower river.

It is soft and silk-like water, flowing smoothly and continuously. The longer it flows, the smoother the flow is. As the water is flowing down, your sleep becomes deeper, and deeper, gradually deepening into a profound state of relaxation of the mind and the body. If there is anything obstructing the way, maybe a leaf, a stone, no matter how big or small it is, the water can pass them easily and effortlessly. The water can glide past them and slip through them. There is no need for the water to stop; it just flows, and it flows continuously and smoothly. The further the water flows, the deeper your sleep becomes ... further down ... and deeper ... further down and deeper, until you rest on the riverbed in a valley. You rest in complete tranquillity, calm and peace. The next morning, you will wake up fresh and rejuvenated, with renewed energy and spirit.” The script was targeted at improving his sleep patterns. The water theme was chosen again due to David’s good responses in the previous sessions.

This is the first time David showed good concentration throughout the hypnosis without snoring. It may be related to the effect of the new medication. He quickly relaxed. David had no recall of the good sleep memory, but reported the vivid image of the river flowing non-stop. David requested to try a longer script. He was induced into a trance again by the eye fixation method, which was then deepened by counting. The suggestions for good sleep and the river metaphor were repeated. David could follow through the script under deep relaxation. A stronger and sharper image of the river was reported. He commented that this was the best hypnosis experience he had ever had.

Session 6 (two weeks later)

David had no experience of electric shock in the past two weeks. His mood was stabilized. He slept more deeply, though he still woke up two or three times every night. David used the “coolness” script of the hypnosis CD in Session 4 for sleep. The sensation of hotness and the accompanying irritability were greatly reduced. The script in Session 5 was repeated. David snored near the end of the session. He had vague recall of the whole script, but felt very relaxed.

Session 7 (three weeks later)

No experience of shock or any “near-miss” episode was reported. David slept well with few incidents of waking up, though he still had nightmares around the theme of “a non-stoppable electric shock” with a frequency of about once

a week. David began to go out on his own, but he still showed habitual fear responses in late evenings, when he was on his way back home from work. It was in fact the time when he experienced the first episode of the electric shock. Often he needed to stop in the streets to grab a fixed object, such as a lamppost or a gate, to anchor himself.

Before the hypnosis induction, we talked about his lack of trust in his body and its adaptability and ability to carry out different activities on a daily basis. We made a list of the activities he carried out in different hours. He was then put into a trance and a “large ship metaphor” was used. “Imagine yourself to be a large ship, a very big ship, as big as a cargo ship sailing in the ocean. It is a very safe, stable, secure, and reliable ship. It sails from day to night, smoothly and stably. It may stop for some rest and get refuelled for energy, and then it continues on with its voyage. It sails, and sails without much effort. From time to time, there may be currents and storms, but as a large ship, it can sail past them easily. This large ship can also choose to stop when it wants to. It just lower its heavy metal anchor into the sea to keep the ship stabilized. All kinds of needs are provided in the ship. The ship is totally self-reliant. It needs nothing from the outside. It is secure and stable, with a strong anchor on board. It keeps on sailing, sailing, and sailing until the night falls, when it drops anchor to take rest, relax, be safe and secure, and be at peace. It quiets down and rests ...” David had no snoring this time and was deeply relaxed. He nearly slept on the first part about “the adaptability of his body,” but he could recall the image of a large ship sailing steadily and he felt good.

Session 8 (three weeks later)

David’s medical condition was stable without any episode of electric shock. He no longer grabbed objects in the street when he went home from work in the late evening. When he felt some discomfort, he would stop for a while and wait for the sensation to go away. His family still worried about him travelling by himself outside of the district where he lived. Better communication with his family was advised. Time was spent on working on his grief over the loss of health and of further opportunity to expand his business. Now David decided to maintain the current size of his business and stick to his original retirement plan. Moreover, he showed increased acceptance of the disease and felt blessed that his medical condition was stabilized. He relied less on the hypnosis CD. No hypnosis was conducted in this session.

Session 9 (three weeks later)

David was improved in all aspects. He could sleep well without nightmares. He resumed travelling to Mainland China and stayed there alone for a few days. He even regained his confidence to take flights if needed. David resumed joining social activities as he did before. He experienced some shortness of breath under work stress. Some advice on stress management was given. David stopped listening to the hypnosis CD and was satisfied with the progress.

Post-Therapy Phone Contact

Three months later David reported being stable both physically and psychologically. He continued working in his business and increased his travel to Mainland China. His mood was back to normal and stable. He showed increased confidence in facing possible fluctuations and uncertainties in the future.

DISCUSSION

This case described how hypnosis could be effective in dealing with the course of a very difficult disease that was characterized by uncertainties and conditioned physiological reactions. David's overwhelming physical discomfort and extreme level of anxiety greatly compromised his ability to apply the coping skills he learned in therapy. At the most acute phase, tapping the patient's inner strengths was of utmost importance. Hypnosis provided him with a break from the chaos of his life. It provided a space for him to relax and to refuel his energy. The ego-strengthening scripts helped David to elicit his inner resources and boosted him when he was at his lowest points. Moreover, the effects of hypnosis were greatly enhanced by choosing the right images and metaphors that he was most receptive to (e.g., water, river, and ship). This quickly drew David into the hypnosis experience and made direct working with his symptoms, particularly the physiological ones, possible. The case also demonstrates how to adjust the lengths of the hypnosis scripts according to the changing physical conditions of the patient.

REFERENCES

- Allen, R. P. (1997). *Scripts and strategies in hypnotherapy*. London: Crown House Publishing.
- Edmonston, W. E. (1981). *Hypnosis and relaxation: Modern verification of an old equation*. New York: Wiley.

- Erickson M. H. (1980). *The collected papers of Milton Erickson. Erickson on hypnosis* (Vols 1-4; E. L. Rossi, Ed.). New York: Irvington.
- Evans, B. J., & Coman, G. J. (2003). Hypnosis with treatment for the anxiety disorders. *Australian Journal of Clinical and Experimental Hypnosis, 31*, 1-31.
- Garver, R. B. (1990). Suggestions with sleep disturbance. In D. C. Hammond (Ed.), *Handbook of hypnotic suggestions and metaphors* (p. 253). W.W. Norton.
- Hammond, D. C. (1990). *Handbook of hypnotic suggestions and metaphors*. New York: W.W. Norton.
- Hammond, D. C. (2010). Hypnosis in the treatment of anxiety- and stress-related disorders. *Expert Review of Neurotherapeutics, 10*, 263-273.
- Morgan, A. H., & Hilgard, E. R. (1975). Stanford Hypnotic Clinical Scale and the Revised Stanford Hypnotic Clinical Scale for Children. *American Journal of Clinical Hypnosis, 21*, 134-147.
- Stanley, R. O., Burrows, G. D., & Judd, F. K. (1990). Hypnosis in the management of anxiety disorders. In R. Noyes, M. Roth, and G. D. Burrows (Eds.), *Handbook of Anxiety: Vol 4. The treatment of anxiety* (pp. 537-548). Amsterdam: Elsevier/North.
- Wilson, S. C., & Barber, T. X. (1978). The Creative Imagination Scale as a measure of hypnotic responsiveness: Applications to experimental and clinical hypnosis. *American Journal of Clinical Hypnosis, 20*, 235-249.

KNOWLEDGE AND ATTITUDES OF PREGNANT WOMEN REGARDING HYPNOSIS

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This is a side study of the Hypnosis Antenatal Training for Childbirth (HATCh) Trial conducted at the Women's and Children's Hospital Adelaide. The aim was to assess knowledge, previous experiences, beliefs and attitudes of pregnant women recruited to the HATCh program. A total of 337 participated in the study. As 90% of this sample had completed Year 12, it was concluded that this group might not be representative of child-bearing women in the general population. The survey revealed a high level of acceptance of hypnosis as a potentially useful modality to reduce labour pain and increase the birth experience.

Keywords: hypnosis, antenatal, attitudes to hypnosis, misconceptions.

Clinical hypnosis is a skill of using words and gestures (frequently called suggestions) in particular ways to achieve specific outcomes. This form of communication facilitates patient focused attention and dissociation (Yapko, 1990). During hypnosis patients experience an increased receptivity to verbal and non-verbal communications (Spiegel & Greenleaf, 1992; Yapko, 1990). Hypnotherapy is the utilization of hypnosis and suggestions to effect clinical outcomes.

Hypnosis in obstetrics has been used for more than a century (Werner, Schauble, & Knudsen, 1982) and there is increasing evidence that it is an effective form of pain relief in labour and may be associated with other benefits such as reduced need for pharmacological labour analgesia, a

I would like to thank the women participants for their time, Dr Allan Cyna and Dr Marion Andrew for their supervision and advice. The HATCh trial has received funding from the Australian Society of Anaesthetists, the Women's and Children's Foundation, and the NH&MRC, Grant No: 453446. Correspondence regarding this paper should be sent to Dr Irina Hollingworth at imaier-lutz@web.de.

decreased use of oxytocic augmentation during labour and an increased incidence of spontaneous vaginal birth (Cyna, McAuliffe, & Andrew, 2004). While it is said to increase maternal satisfaction with the childbirth experience (Freeman, Macaulay, Eve, & Chamberlain, 1986), there is anecdotal evidence of hypnosis reducing the incidence of postpartum depression (Werner et al., 1982) and anxiety (Goldman, 1992). Self-hypnosis for anxiety management can be taught to the expectant mother (Schauble, Werner, Rai, & Martin, 1998) and it has been demonstrated that the receptivity to suggestion and hypnosis increases during pregnancy (Tiba, 1990), while stress increases the response to suggestion (Spiegel & Greenleaf, 1992). Previous studies in this field are often limited by methodological and analytical problems. Substantive conclusions about timing and delivery of hypnosis and the effect on analgesia requirements, and the incidence of spontaneous vaginal delivery remain unclear.

The Hypnosis Antenatal Training for Childbirth (HATCh) trial is the largest prospective randomized controlled trial to date that examines these factors and investigates whether mothers trained to use hypnosis in the third trimester improve their childbirth experiences and decrease postpartum complications. It is currently being conducted in the largest tertiary referral centre for maternity care in South Australia and seeks to determine the efficacy or otherwise of antenatal group hypnosis preparation for childbirth in late pregnancy. Inclusion criteria for the HATCh trial were: pregnant women >34 weeks gestation, singleton, viable foetus, vertex presentation, not in active labour, and planning a vaginal birth. Exclusion criteria were: active psychological or psychiatric problems such as active depression, schizophrenia, and severe intellectual disability; poor understanding of English; pain caused by specific pathological entities such as congenital neuromuscular disorders, spina bifida, infection, metastasis, and previous hypnotherapy for childbirth.

STUDY AIMS

In this side study of the main HATCh trial (Cyna et al., 2006), we aimed to assess knowledge, previous experiences, beliefs and attitudes of pregnant women recruited to the HATCh study.

METHODS

Following ethics committee approval and informed patient consent, potentially eligible women were identified during attendance at antenatal clinics, antenatal

classes, or midwifery group practice, or while an inpatient on the antenatal ward via posters advertising the trial. Expression of interest forms were made available and all women approached for eligibility had a structured explanation regarding participating in the trial and numbered as per consent statement (Begg et al.,1996). In January 2009, we reviewed baseline data collected prior to randomization and allocation to the three HATCh Trial Groups (Cyna et al., 2006) on the first 336 study participants. Baseline demographic data included: parity, highest level of formal education, marital status, and the use of any complementary therapies such as acupuncture or yoga. Questions referring to the effect of previous experiences with hypnosis on attitudes were included. Data collected were transcribed on to a password protected computer database (Microsoft Access). Data are presented as descriptive statistics only.

RESULTS

Table 1 below shows the demographic details of the women included in this study.

Table 1: Baseline Demographic Data of HATCh Trial participants.

Baseline demographic data	<i>N</i> = 337
Age range	16–42
Nulliparity	248 (74)
Previous LSCS	20 (6)
Gestation >33–36 weeks	299 (89)
Country of birth: Australia and New Zealand	226 (67)
English as first language	307 (91)
Tertiary education	198 (59)
High school completion	291 (86)
No degree, school not completed	30 (9)

Numbers of women in each category (percentage in brackets).

Table 2 below shows the use of complementary therapies during their pregnancy, such as yoga, fish oil supplements, meditation, acupuncture and others (water classes, massage, physiotherapy, chiropractic, naturopathy). Multiple responses were possible.

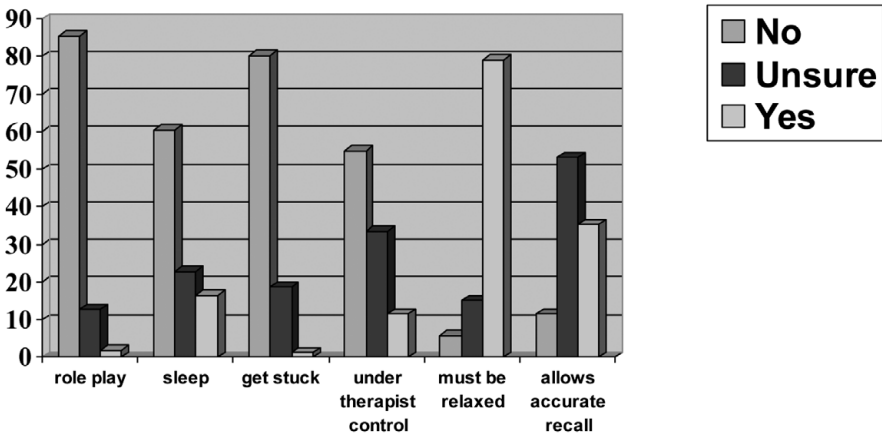
Table 2: HATCh Trial Participants: Use of Complementary Therapies.

Complementary therapy	N = 337
Yoga	181 (54)
Fish oil supplements	125 (37)
Water class	61 (18)
Meditation	52 (15)
Acupuncture	28 (8)
Massage	9 (3)
Physiotherapy	9 (3)
Chiropractic	7 (2)
Naturopathy	5 (1)

Numbers of women using this therapy (percentages in brackets).

Figure 1 below shows the women’s beliefs and misconceptions regarding hypnosis.

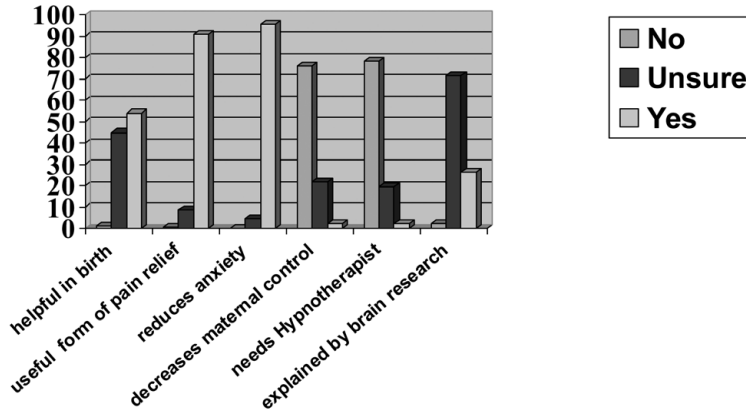
Figure 1: HATCh Trial Participants’ Beliefs and Misconceptions Regarding Hypnosis.



Numbers of women are shown as percentages.

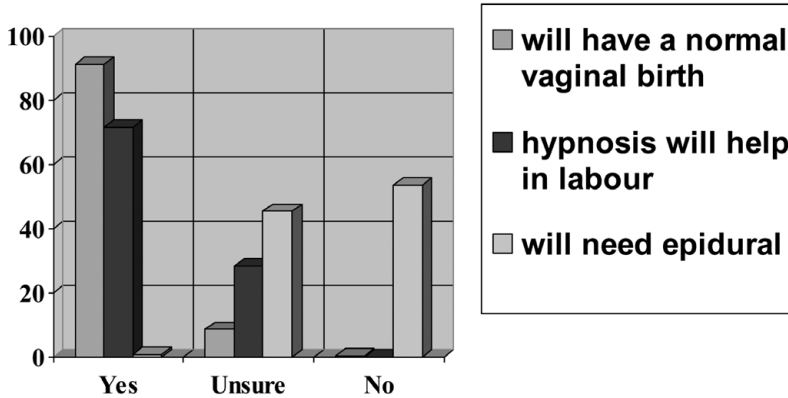
Figure 2 below shows the women's beliefs regarding the usefulness of hypnosis in childbirth and Figure 3 shows HATCH trial participants' expectations of childbirth.

Figure 2: HATCH Trial Participants' Beliefs Regarding the Usefulness of Hypnosis In Childbirth.



Numbers of women are shown as percentages.

Figure 3: HATCH Trial Participants' Expectations of Childbirth.



Numbers of women are shown as percentages.

DISCUSSION

The current study is the first comprehensive report of pregnant women's knowledge and attitudes to labour hypnosis performed to date. We were surprised by the high level of acceptance of hypnotherapy as a potentially useful modality to reduce labour pain and increase the birth experience. As seen in Table 1, study participants completing the study tended to be those who were more educated, with more than half having completed tertiary education. Women who participated did so voluntarily and there was no real incentive for them to participate. With voluntary participation, it is a relatively common for participants to be more educated than the overall population (Gravetter & Wallnau, 1996). This is possibly due to the fact that they have been involved in research as part of their studies. The participants were relatively homogenous as over 90% had completed Year 12 or tertiary education. This level of education could limit generalizability and external validity of the HATCh trial, as these women may not be representative of childbearing women in the general population.

Most women recruited to the HATCh Trial had not experienced hypnosis before yet expressed a positive attitude towards it. Even the women with exposure to non-clinical hypnosis showed a very low level of negative influence following that type of experience. Previous research has found that approximately one-third of people who are subjects for hypnosis in a non-therapeutic setting find the experience a negative one, mainly as it was felt that subjects were belittled and made to do things that they would not do if in full control (Echterling & Emmerling, 1987). Whether this attitude can be seen as a change due to a pregnancy-induced interest in alternative therapies or due to a selection bias of the study population is unclear. The majority of women used a variety of alternative therapies in their pregnancy and labour preparation, as shown in Table 2, which is probably not representative of childbearing women in the general population.

Approximately half of the respondents had knowledge consistent with the evidence; however, common misconceptions as outlined in Figure 1 were evident. These need to be addressed as realistic expectations may lead to an improved response to treatment. In addition, recruitment for further research could be adversely affected. For instance, "Relaxation is necessary for hypnosis" was wrongly assumed by the majority of women. This is highly unlikely to be achieved in active labour and therefore women preparing for childbirth with hypnosis should be reassured that relaxation is unnecessary for hypnosis to be

effective. Hypnosis sessions can also include wording on dissociation of mind and body during contractions.

While more than one-third of women thought that “hypnosis allows accurate recall of events,” the majority were unsure. This question aimed at assessing the medico-legal implications of hypnotherapy as this contentious subject has been discussed in the “recovered memory controversy” in the past as hypnosis can affect the distinction between memory and fantasy (Yapko, 1990). There is also the concern of some women that their recall of the birth may be affected.

Many hypnotic phenomena would be of advantage during labour. These include dissociation from the contractions, time distortion, amnesia, and anaesthesia. It has been shown that pain thresholds rise dramatically in late pregnancy and in labour (Cogan & Spinnato, 1986). Physiological changes in the brain in late pregnancy and for up to three days after childbirth appear to be associated with a reduction in anaesthetic requirements of pregnant women (Chan & Gin, 1995). Elevated levels of progesterone are recognized as having a sedative effect in both human and experimental animals (Datta, Migliozi, Flanagan, & Krieger, 1989) and may be a critical factor in increased hypnotizability in pregnancy.

There were few limitations in this study. The main limitation is whether the study findings can be generalised to other settings and pregnant women.

CONCLUSIONS

The study findings suggest that mothers choosing to use hypnosis during pregnancy and childbirth are highly motivated to seek an active role and believe that hypnosis can improve their childbirth experiences. In addition there is an expectation that the use of pharmacological analgesia will be reduced. This may result in a selection bias that could reduce differences in this outcome between groups.

REFERENCES

- Begg, C., Cho, M., Eastwood, S., Horton, R., Moher, D., Olkin, I., Pitkin, R., Rennie, D., Schulz, K., Simmel, D., & Stroup, D. (1996). Improving the quality of reporting of randomised controlled trials: The CONSORT statement. *Journal of the American Medical Association*, 276, 637–639.
- Chan, M.T. V., & Gin, T. (1995). Postpartum changes in the minimum alveolar concentration of Isoflurane. *Anesthesiology*, 82, 1361–1363.

- Cogan, E., & Spinnato, J. A. (1986). Pain and discomfort thresholds in late pregnancy. *Pain*, 27, 63–68.
- Cyna, A. M., Andrew, M. I., Robinson, J. S., Crowther, C. A., Baghurst, P., Turnbull, D., Wicks, G., & Whittle, C. (2006). Hypnosis antenatal training for childbirth (HATCh) BMC Pregnancy and Childbirth. doi:10.1186/1471-2393-6-5. Retrieved 12 February 2009 from <http://www.biomedcentral.com/1471-2393/6/5>.
- Cyna, A. M., McAuliffe, G. L., & Andrew, M. I. (2004). Hypnosis for pain relief in labour and childbirth: A systematic review. *British Journal of Anaesthesia*, 93, 505–511.
- Datta, S., Migliozi, R. P., Flanagan, H. L., & Krieger, N. R. (1989). Chronically administered progesterone decreases halothane requirements in rabbits. *Anesthesia & Analgesia*, 68, 46–50.
- Echterling, L. G., & Emmerling, D. A. (1987). Impact of stage hypnosis. *American Journal of Clinical Hypnosis*, 29, 149–154.
- Freeman, R. M., Macaulay, A. J., Eve, L., & Chamberlain, G. V. P. (1986). Randomised trial of self-hypnosis for analgesia in labour. *British Medical Journal*, 292, 657–680.
- Goldman L. (1992). The use of hypnosis in obstetrics. *Psychiatric Medicine*, 10, 59–67.
- Gravetter, F. J., & Wallnau, L. B. (1996). *Statistics for the Behavioral Sciences*. St Paul, MT: West Publishing Company.
- Schauble, P. G., Werner, W. E., Rai, S. H., & Martin, A. (1998). Childbirth preparation through hypnosis: The hypnoreflexogenous protocol. *American Journal of Clinical Hypnosis*, 40, 273–283.
- Spiegel, H., & Greenleaf, M. (1992). Personality style and hypnotizability: A fix-flex continuum. *Psychiatric Medicine*, 10, 13–24.
- Tiba, J. (1990). Clinical, research and organizational aspects of preparation for childbirth and the psychological diminution of pain during labour and delivery. *British Journal of Experimental and Clinical Hypnosis*, 7, 61–64.
- Werner, W. E. F., Schauble, P. G., & Knudsen, M. S. (1982). An argument for the revival of hypnosis in obstetrics. *American Journal of Clinical Hypnosis*, 24, 149–171.
- Yapko, M. (1990). *Trancework: An introduction to the practice of clinical hypnosis* (2nd ed.). New York: Brunner Mazel.

THE INTEGRATION AND APPLICATION OF TAI CHI PRINCIPLES WITH MIND–BODY HYPNOTHERAPY

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The integration of principles and processes of the internal martial art of Tai Chi with mind–body hypnotherapy can facilitate expanded trust, deeper levels of safety, and new forms of comfort in the treatment of a variety of symptoms. This integration is facilitated by the utilization of creativity, the implied directive, and the principle of correspondence utilized in the set theory of Cantor.¹ The main areas the integration incorporates are the utilization of time, space, motion, position, and the containment² and transformation of resistance. The main areas in which trust is expanded include additional subsets of physiological resources and a trust in the capacity to reduce pressure. A number of Tai Chi principles and processes are discussed in terms of their relevance and application in the areas of containment, temporal dynamics, the expansion of trust in resources, the healing effects of refocusing, and the treatment of resistance.

Keywords: creativity, implied directive, set theory, utilization, Ericksonian, Tai Chi, resistance.

The integration and application of mind–body hypnotherapy with other therapeutic modalities, areas of science and other disciplines has been evolving for over two decades (Gregory, 2007, 2010, 2011a, 2011b; Rossi, 1996, 2002). This integration is consistent with efforts within mainstream

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¹ Georg Cantor was a German mathematician who is recognized as the creator of set theory, to which he applied the principle of correspondence to develop the theorems relating to transfinite numbers. A detailed description of his work can be found in Dunham (1991, chaps 11–12).

² Containment is a term used in psychodynamic therapy that is utilised in the treatment of affect states and acting out behaviours. A detailed discussion of containment can be found in Masterson (1976). In a hypnotherapeutic context, containment refers to interventions involving the conscious mind and unconscious defences. Detailed examples can be found in Erickson and Rossi (1979).

psychotherapy (Magnavita, 2008; Norcross & Newman, 1992) and within the hypnotherapeutic discipline (Lynn & Hallquist, 2004) to find the common ground between differing approaches. Finding the common ground is supported by Einstein's implementation of the principle of equivalence (Isaacson, 2007) and Cantor's utilization of the principle of correspondence (Dunham, 1991) and facilitates a demystification of apparent differences between different therapeutic orientations and a broadening of the understanding of the healing process. This broadening and deepening of the understanding of the core dynamics of the healing process has been supported by the building of bridges between different disciplines and areas of focus to provide templates for expanding trust, developing deeper appreciation and utilization of creativity, and in general a wider skill set for facilitating safety and containment at deeper levels (Gregory, 2007, 2010, 2011a, 2011b; Rossi, 1996, 2002). This expanded skill set is a function of the integration of expanded trust of a group of subsets of physiological resources operating at different levels of the unconscious with the appreciation and utilization of creativity. Erickson (Erickson & Rossi, 1979) stressed the importance of building bridges when working with unconscious material in the context of mediating and pacing the polarity of the conscious and unconscious mind during the treatment process. Erickson's work (Erickson, 1958) was consistent with response set theory (Lynn & Hallquist, 2004; Lynn & Sherman, 2000; Sherman & Lynn, 1990) and dissociative theory (Hilgard, 1977, 1986, 1994) as he built associative networks that enhanced responsiveness and consistently used polarities to depotentiate the conscious mind and facilitate unconscious healing processes. Utilizing the *implied directive*,³ Rossi integrated mind-body hypnotherapy with molecular biology by recognizing that the physiological resources of the body facilitated the processing of psychological stimuli, identifying and expanding the pool of unconscious resources to include the physiological resources (Rossi 1986, 2002). These resources included systems, organs, molecules, cells, and the genes themselves,

The implied directive had been a valuable tool in the development of indirect suggestions through the creative use of language. The concept had wider applications which were expanded by Erickson. Erickson, Rossi, and Rossi (1976) wrote the following regarding its value:

An understanding of how Erickson uses implication will provide us with the clearest model of his indirect approach to hypnotic suggestion.

³ The implied directive was originally used by Erickson in the context of contingency suggestions. A detailed discussion can be found in Erickson and Rossi (1979, chap. 3).

Since his use of “implication” may involve something more than the typical dictionary definition of the term, we will assume that he may be developing a special form of “psychological implication” in his work. For Erickson, psychological implication is a key that automatically turns the tumblers of a patient’s associative processes into predictable patterns without awareness of how it happened. The implied thought or response seems to come up autonomously within patients, as if it were their own inner response rather than a suggestion initiated by the therapist. Psychological implication is thus a way of structuring and directing patients’ associative processes when they cannot do it for themselves. The therapeutic use of this approach is obvious. If patients have problems because of the limitations of their ability to utilize their own resources, then implications are a way of bypassing these limitations. (pp. 59–60)

Rossi extended the integration of mind–body hypnotherapy with other branches of science to include chronobiology with his recognition that the work of Kleitman, Kandel, and Ribiero with regard to the ultradian rhythm and the temporal variables affecting activity dependent gene expression could correspond to the natural learning rhythms of patients (Kandel, 1998; Kleitman, 1969; Ribiero, 2004; Rossi, 2002, 2005). This recognition supported the expansion of trust of the unconscious in exploring experiences, reorganizing experiences and receiving comfort (Gregory, 2007; Rossi, 2002, 2004). The recognition of the need for expanded trust represented a subset of Erickson’s approach to treatment in which he often worked with patients for up to seven hours before he initiated the formal part of treatment. This demonstrated that the patient could experience a variety of hypnotic phenomena which were indicative of trust and safety with the unconscious and its resources (Rosen, 1982). Rossi’s integration of molecular biology and chronobiology with mind–body hypnotherapy validated patients’ capacity to be creative, and implied that this capacity could be nurtured and trusted. This capacity for creativity was reflected by the processes of reorganization and integration of old and new experiences that included neurogenesis, new positions, and new experiences for the patient. Rossi described the process of fascination with new experiences that led to neurogenesis as the “novelty, numinosum, neurogenesis effect” (Rossi, 2002).

The expansion of trust in unconscious resources continued with the integration of chaos theory with mind–body hypnotherapy (Gregory, 2007, 2011a, 2011b; Rossi, 1996; Rossler, 1992). This integration was achieved

through the recognition that the attractors⁴ of chaos theory (fixed, limited, chronic, chaotic) were metaphors of nature that represented deeper resource networks that could be utilized creatively in expanding trust, providing containment, and facilitating unconscious healing processes.

Through the application of the implied directive, Rossi integrated other therapeutic modalities, which included the psychodynamic, cognitive behavioural, gestalt, and Jungian orientations. Rossi's implicit challenge to therapists to *rethink* their overall view of the healing process validated and appreciated the cognitive behavioural approach. An additional component of Rossi's challenge to therapists to rethink their approach to the healing process was his implicit directive to "think" in terms of mathematical equations, with an emphasis on complexity, nonlinearity, relationships between variables and the temporal components represented by the dx/dt components of the equations which referred to rates of change (Rossi, 2002). The primary mathematical principles supporting Rossi's challenge and the cognitive approach were Einstein's principle of equivalence which related gravity and acceleration (Isaacson, 2007) and Cantor's correspondence principle which was utilized to develop set theory (Dunham, 1991). The utilization and trust of physiological resources which all provide containment at a variety of levels affirmed the psychodynamic approach. In addition, Rossi's utilization of the polarity approach was an appreciation of Jung's transcendent function, Gestalt therapy's dialogue with parts, dissociation and the role of opposites in general throughout the healing process (Beck, 1976; Gregory, 2007, 2010, 2011a, 2011b; Hilgard, 1994; Jung, 1916; Perls, 1973; Rossi, 1996, 2002). Erickson had appreciated the significance of the role of opposites in his integration and utilization of;

- the active and passive approaches to hypnosis,
- knowing and not knowing,
- doing and not doing, and
- the relationship between the conscious and unconscious during the depotentialization stage (Erickson, 1958; Erickson & Rossi, 1979).

An additional consequence of Rossi's integration of mind-body hypnotherapy with molecular biology was the implicit validation of the *need for depth* and the *capacity* of the unconscious to provide the depth necessary. Through the application of the implied directive, mathematics and physics were integrated

⁴ An attractor is a concept from self-organization theory that represents a pattern of long-term behaviour. For a more detailed discussion, see Rossi (1996, pp.39–80).

with mind–body hypnotherapy around the issues of expanding trust, depth, complexity, time, space, motion and position (Gregory, 2011a, 2011b; Rossi, 1996, 2002). The need for depth and the capacity for containment at fundamental levels of depth were expressed mathematically by the work of the physicists Einstein, Heisenberg, Schrodinger and Dirac, all of whom won the Nobel Prize for their individual contributions that identified fundamental dynamics of nature's laws for motion on both micro and macro levels. Containment in the context of safety, anxiety and affect had been identified as one of the primary components of the treatment of trauma (Dolan, 1991; Erickson & Rossi, 1989; Grove & Panzer, 1989; Levine, 1997). Both Schrodinger and Heisenberg, working on the micro level of quantum mechanics, discovered the mathematical equations describing the *motion* of the electron and the variables responsible for supporting this motion. Schrodinger's equation described the electron from the perspective of it being a wave, while Heisenberg's equation described the motion of the electron from the perspective of it being a particle (TCL, 1996; Gregory, 2011a, 2011b). This was the second time physics had resolved a polarity, the first being when Einstein identified that light was also a particle, after Maxwell had identified light as a wave (Isaacson, 2007; TCL, 1996). Dirac developed equations that were the foundation of quantum field theory, which unified quantum mechanics and special relativity, and equations that described the variables, and the relationship between the variables for the creation and destruction operators. The equations for the creation and destruction operators validated the capacity for creativity and the need for creativity on deeper levels than had been done previously (Gregory, 2011a, 2011b). Einstein's main contributions included his formation of the equations for special and general relativity. The special relativity equation described the variables and relationships for uniform motion, a problem that had been explored since Galileo, and emphasized the roles of time and frames of reference. The equation for general relativity addressed accelerated motion, utilizing the principle of equivalence to describe the relationship between gravity, accelerated motion, and mass, and showed that the force of gravity caused space to curve (Greene, 1999, 2004; Isaacson, 2007; TCL, 1996).

By combining Erickson and Rossi's principle of yes sets for building bridges between the conscious and unconscious minds, and the implied directive, the variables identified by physics on both micro and macro levels concerning nature's laws of motion could be applied in facilitating response sets and unconscious healing processes. These primary variables include time,

space, motion, and position. Through a combination of expanded trust on the part of the therapist, the interspersal technique (Erickson and Rossi, 1979) and seeding/priming (Lynn & Hallquist, 2004; Zeig, 1985, 1988) additional containment and safety at deeper levels for the treatment of trauma could be facilitated. Further, these variables are often out of balance within patients, playing a role in symptom formation, and represent deeper resources within the patient that could be utilized for healing (Gregory, 2010, 2011a, 2011b). These variables—time, space, motion and position—are the core variables of Tai Chi practice, and were integral components of Erickson's treatment methods (Erickson & Rossi, 1979; Haley, 1973).

THE ROLE OF OPPOSITES IN THE INTEGRATION AND HEALING PROCESS

Although Jung's identification and appreciation of the transcendent function (Jung, 1916) in the integration of the unconscious and conscious minds set the stage for almost a century of exploration and utilization of unconscious healing resources in a variety of therapeutic contexts, including the treatment of opposites, it was not the first time that the interplay of opposites had been addressed. Throughout history the role and significance of the interplay, appreciation and utilization of opposites have been well documented. From a western perspective, the Greek philosopher Heraclitus around 500 BC taught that the changes in the world were a function of a dynamic and cyclical interaction between opposites, which were in essence part of a transcendent unity. Two German philosophers, Hegel and Nietzsche, in the nineteenth century identified the role of the play between opposites in the processes of external change and inner transformation. Influenced by Fichte, Hegel argued that the opposites existed in every thesis, which had its antithesis, and were ultimately integrated by a synthesis. Nietzsche drew on the work of Bachofen and Creuzer to argue that the opposites were united in the *Urbemensch* (Yelle, 2000).⁵

Inspired by Nietzsche, Jung identified the transcendent function as the mechanism that integrated the conscious and unconscious minds. As his exploration of the dynamics of the psyche evolved, Jung expanded the concepts of opposites to include a variety of psychic experiences which included light and dark, masculine and feminine, spirit and matter, fantasy and

⁵ The *Urbemensch* was introduced by Nietzsche in *Thus Spoke Zarathustra* (1883) and represented a man who had evolved beyond narcissistic values, was creative, altruistic, and impacted society in a positive direction.

reality, and creative and reactive. In addition, he noted that the opposites were complementary, which was also recognized in the Tai Chi system as being a fundamental component of nature's creation. This will be addressed in more detail in the Tai Chi section. In the later stages of his work, Jung collaborated with the physicist Pauli, the founder of the exclusion principle, to explore the integration of psychology and physics, focusing on the interplay between time and space.

The role of opposites had been addressed in physics in terms of whether light and the electron were particles or waves. Maxwell had shown that light was a wave in 1865 and in 1905 Einstein showed that it was also a particle, implying that there was a force behind, and somehow unifying the realities of particles and waves, which anticipated Jung's concept of the transcendent function prior to its introduction in 1916. The transcendent function was again validated when Schrodinger's equation for the electron as a wave and Heisenberg's equation for the electron as a particle were recognized as equivalent.

Shortly after Braid identified and defined the process of hypnosis in 1846 it was discussed in term of opposites from the perspectives of active and passive approaches developed in France in the nineteenth century. The passive approach, the perspective of the Salpetriere school, was led by Charcot, and the active approach was led by Bernheim of the Nancy school. This permutation of opposites continued in the early twentieth century when Pavlov asserted that hypnosis was a state of deep sleep, while Hull conceptualized hypnosis as an active state. Erickson took this a step further, integrating both perspectives with his naturalistic method that incorporated a wide range of indirect suggestions. His indirect suggestions contained a number of subsets that specifically utilized polarities (Erickson & Rossi, 1979), and complemented the direct approach to giving suggestions. In doing so, another set of opposites was established; direct and indirect suggestions. Currently, within the hypnotherapeutic world, another set of opposites—the sociocognitive perspective which emphasizes response set theory and the dissociation perspective—is being explored to determine the potential overlaps in the service of more integration (Lynn & Hallquist, 2004).

From an eastern cultural perspective, the dynamics between opposites had been explored and integrated at complex, deep levels by the martial art of Tai Chi, a subset of Taoism. Tai Chi utilized the principles of Lao Tzu, and incorporated the integration of the yin/yang opposites. Tai Chi, like physics, integrated the variables of time, space, motion and position.

Erickson developed processes that both utilized the transcendent function and were functionally equivalent to processes employed in classical music composition theory (Gregory, 2010). Erickson utilized a variety of creative interventions to depotentiate the conscious mind as a prerequisite for setting the foundation for facilitating multiple pairs of opposites that could be employed in the facilitation of trance/mind–body states, creative problem solving and healing. These included shock, surprise, distraction, confusion, and non sequiturs (Erickson et al., 1976). Rossi (1996, 2002) continued to expand the application of his polarity approach in which the symptom of the patient was placed in one hand and the opposite of the symptom was placed in the other hand. The patient was then guided to explore the relationship between the two forces in the hands, allowing for the unconscious acting as a representative of the transcendent function to mediate and integrate the dynamic between the two forces.

THE ROLE OF CANTOR'S SET THEORY AND EINSTEIN'S PRINCIPLE OF EQUIVALENCE IN THE INTEGRATION OF MIND–BODY HYPNOTHERAPY AND PRINCIPLES AND PROCESSES OF TAI CHI

Cantor (Dunham, 1991) utilized the principle of correspondence and set theory to develop his proofs for transfinite numbers. The issue to describe accurately limits had surfaced as a consequence of the development of calculus, without some of its basic foundations being adequately addressed. A major component of the evolution of the understanding of calculus was the development of non-Euclidean geometry, which was the mathematics of curved space that helped expand the knowledge of the laws of nature. Non-Euclidean geometry established a polarity within mathematics; linear and nonlinear space. This branch of mathematics, developed by Gauss, Riemann and others (Dunham, 1991; Isaacson, 2007) was an integral part of Einstein's formulation of the general relativity equation, which explained how gravity impacted space–time.

The problem of the limit, left in limbo by the attempts of Newton and Leibniz, was more adequately addressed by Cauchy. Later, and with much more clarity, it was sufficiently handled by Weierstrass. However, this left the problem of the opposite of the limit, the infinite, unattended. *The implied directive* exerted its influence when Cantor, in the process of developing and expanding the understanding of set theory, used the principle of

correspondence to consider the distinctions between the sets of rational and irrational numbers, and the implications of those distinctions. This led him to explore the idea and implications of power sets, which are sets that include all the subsets of any given set. The utilization of power sets demonstrated that infinities could be expanded infinitely. Cantor's set theory and his proofs for transfinite numbers were utilized as bridges to expand the yes set for creativity (Gregory, 2010, 2011a, 2011b).

Applying the implied directive thus meant more possibilities for creativity, meaning that more hope, more courage, and more creativity could be set against the depths of hopelessness, shame, and varieties of fear experienced by patients suffering from the wide ranging wounds of trauma and abuse. Further, infinities, when considered in the context of set theory, are subsets of creativity that could be utilized in polarities with limits, rigidities and reactivity, provided therapists expanded their trust of unconscious resources.

Cantor's *creative* thinking and resulting proofs validated, and added to, implications regarding the capacity and scope of the transcendent function to work with the opposites inherent in the thought experiments of Galileo, Newton and Einstein concerning the laws of motion, space, time and position. From a psychological perspective it implied a need to integrate creativity, creative thinking and cognitive behavioural therapy with other therapeutic approaches in and outside the realm of hypnotherapy. By showing that creativity was infinite, this implied that the creativity utilized by Cantor, Einstein, Newton and Galileo in discovering nature's laws of motion could be expanded in other areas, which would translate as subsets, where the variables time, space, motion and position played core roles. More importantly, however, the template Cantor provided in terms of thinking about the relationships between sets, subsets and powersets could be translated into thinking creatively in dealing the variables affecting the treatment process.

Einstein's special relativity and general relativity theories are about motion with respect to time, space and position. Special relativity applies to uniform motion. General relativity was developed through Einstein's exploration of accelerated motion. Through *creative thought* experiments, Einstein realized the force of gravity was equivalent to the force of acceleration motion (Greene, 1999; Isaacson, 2007). This realization validated the need and value of creativity and cognitive processes. In addition, along with Cantor's utilization of correspondence, it provided a template for criteria necessary in the process of recognizing the common ground required for the integration of different therapeutic points of view.

PRINCIPLES AND PROCESSES OF TAI CHI

The discipline of martial arts is generally divided into two groups—external and internal. External styles are characterized by fast and explosive movements with a focus on physical strength and agility, while the internal styles emphasize breath, energy flow, relaxation, weight distribution, and mental focus. Tai Chi is one of the internal forms, along with Baguazhang and Xingyiquan (Drager & Smith, 1981). There is some controversy over who is the founder of Tai Chi. From the perspective of oral tradition the first to practise Tai Chi was Cheng I Tao Jen, a Taoist priest from the Chusan Chiou period (722–480 BC) In AD 960 Chao Kuang Yin, the first emperor of the Sung Dynasty, founded a system of combat exercises and personal health which he called tai tzu chang chuan. Other sources credit San Feng from the Wu Tang Mountain around AD 1300 to be the founder. There are five main styles of Tai Chi that are practised with different form lengths and different points of emphasis: Yang, Chen, Wu, Sun and Wu Tang. The forms vary from 24 to 108 moves. Although Tai Chi is often perceived as an exercise form for relaxation and the promotion of health, vitality, and wellbeing, the training behind the forms is designed to facilitate the trust of the body and its resources (subsets) in ways that are in harmony with nature's design. The following main principles and processes are relevant, applicable, and can be integrated with mind–body hypnotherapy.

- Yin/yang
- Reduction of pressure
- Appreciation of joints
- Appreciation of waist
- Rooting
- Focus on tan tien
- Focus on breathing
- Dealing with resistance
- Spiraling, circling, coiling

The practice and training of Tai Chi is built around the principle of yin/yang, and is consistent with Chinese medicine, and the physics of force. Yin and yang are considered the two basic forces that emerged when the state of unity (Wuji) divided. Yin represents softness and stillness, and yang represents hardness and movement. The fighting strategies of Tai Chi are based on the interaction of yin and yang. Although yin and yang are opposites they are perceived as being more complementary, and being inside of the other, as opposed to simply being opposite.

One of the primary components of Tai Chi training is to orient the focus of attention around the tan tien, a point three finger widths below the navel that is considered the energy centre of the body. The foundation for the Tai Chi forms is a series of energy exercises known as Chi Gung. In both Chi Gung training and training for the Tai Chi forms, the emphasis is on slow movements with attention alternating between certain body parts being used and the breath. This emphasis serves as a metaphor and facilitator to reduce pressure in terms of time. In doing so, this orientation can stimulate curiosity about learning rhythms, and one's need for time, transforming the experience that there is a lack of sufficiency of time, thereby reducing anxiety.

The training of the specific movements in the form focuses on opening up the space between the joints, and aligning the joints. This is done to support the flow of energy in the body, and the vitality and functioning of the organs. Concentrated attention is given to the lowering and opening of the shoulders, opening and relaxing the wrists and elbows, aligning the hips and ankles, and keeping the hips even. Each of these resources, which are subsets of the resource group of joints, functions as a portal to expand trust in one's capacity for self-comfort, self-regulation, and new experiences. In addition, opening of the joints supports deeper relaxation and better flow of the chi (energy).

Many of the movements of the Tai Chi forms involve waist turns, which must be done horizontally if the shoulders are to remain in balance. Like all other movements, this trains the person to move in alignment and harmony with nature's design. This alignment keeps a person in maximum state of preparedness to maintain safety, and respond efficiently to incoming forces.

The training of proper alignment is supported by the foundation acquired through the training of proper "rooting." Rooting refers to a connection to the earth, and involves focusing attention on specific parts of the feet, whether it is the balls of the feet, the heel, the instep, or outside of the foot to maintain proper balance in the context of the move being performed. The process of training strong roots appreciates the need for balance, and implies an adequate capacity for learning, achieving, and maintaining that balance in the face of aggression.

Focusing on the tan tien when moving, along with the body part and breath is one of the subsets of training centring and being balanced, and facilitates a general sense of being connected, reducing anxiety and increasing a sense of wellbeing.

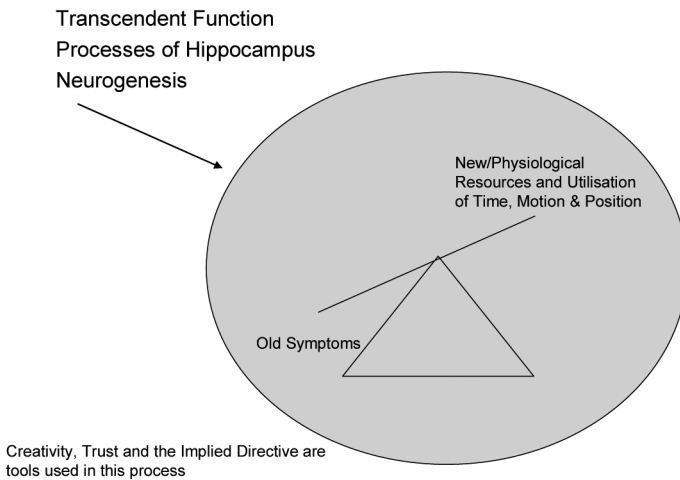
Tai Chi training incorporates the coordination of breathing while in motion. This helps increase the trust that there is sufficient time to breathe

while moving, to expand trust to focus on multiple areas of complexity, and develop the connection to the tan tien and the chi.

Dealing with resistance is learned through consistent, detail focused practice around the pushing hands exercises. These exercises develop sensitivity to an opponent's intent, while training the skills to align with the physics of forces by learning the peng, lu, an sequence. "Peng" means to empty or yield; "lu" means to redirect for the purpose of neutralizing, in Taoism the process for dealing with resistance and aggression is referred to as leading into emptiness. "An" means to push back. In the next section this will be discussed in terms of its equivalence to Erickson's resistance protocol.

In Tai Chi a number of the moves involve spiralling, coiling and circling motions. Each of these motions is designed to promote more connection and harmony with the energy flows in the body, which can facilitate more power, and wellbeing.

Figure 1: The Integration of Mind–Body Hypnotherapy with Tai Chi Principles and Processes (Copyright © 2011 by Bruce Gregory)



The processes and principles of Tai Chi represent subsets of resources and resource groups that can function as doorways to new forms of comfort in the healing process.

The integration of mind–body hypnotherapy with Tai Chi principles and processes is achieved through applying the correspondence principle used by Cantor in his development of set theory and the equivalence principle used

by Einstein in his formulation of the equations for general relativity which identified that gravity and accelerated motion were the same. The integration incorporates the following main areas:

- Expansion of the set of physiological resources and expansion of trust in capacity.
- Expansion of pathways to positively transform relationships with time.
- Addition of points of focus to support refocusing of attention, facilitating new forms of comfort, grounding, and reduction of anxiety, which increase response sets.
- Validation of Erickson's resistance protocol.
- Increased support for utilizing and trusting polarities.
- Valuing of the motion and position components of the patient's experience.

These categories essentially are subsets of the main set, the unconscious, with its accompanying process and capacities that are represented by the subsets. These subsets all contain seeds that can become pathways for comfort, problem solving and neurogenesis.

The physiological resources emphasized as points of focus in Tai Chi training—elbows, knees, tan tien, feet, shoulders, wrists and hips—add to Rossi's integration of molecular biology, chronobiology and chaos theory by expanding the set of physiological resources from which new comfort can be accessed, while simultaneously providing abundant opportunity to deepen trust in one's capacity for comfort, safety and problem solving.

The training to appreciate, align with and utilize the joints reflects a correspondence and validation of Erickson's utilization of the song about the ankle bone being connected to the foot bone, and so forth, that was a metaphor for appreciating the need and capacity for connection (Haley, 1973), and a metaphor for Erickson's recognition for the need to build bridges in working with the unconscious (Erickson & Rossi, 1979, p. 177). Focusing on the joints allows them to function as bridges to access new forms of comfort. In addition, this can aid therapists in expanding their trust in the resources available in the patient's unconscious, which can allow for more time and creativity to focus the attention of the patient in novel ways that interrupt rigid, dysfunctional patterns. One consequence of the interruption of rigid, dysfunctional patterns is the facilitation of new pathways for receiving comfort and gene expression that reorganizes unconscious positions within patients, allowing for healthier choices. The focus Tai Chi training places on the above physiological resources functions as an implied indirect suggestion

that communicates: “trust your body, trust the resources of your body, trust focusing, and breathing, trust practising, and trust that there is enough time.”

The training in Tai Chi emphasizes slow, small, focused movements. Consistently repeated is the message, “take your time, there is enough time; just continue to practise and you will learn, and your body (unconscious) will be responsive, supportive and capable.” On another level the slowness of practice is conducive to activating the parasympathetic nervous system. This emphasis on small, slow, progressive movements parallels Erickson’s efforts in working with the patient with phantom limb pain in which he utilized small increments of changes in heart rate to facilitate a geometric progression that had a significant impact on the treatment (Erickson & Rossi, 1979, p. 102). When the patient builds a yes set (Erickson & Rossi, 1979) for small, incremental movements and activates unconscious searches that explore the potential value that can come from direct and indirect consequences of the searches, these consequences can translate to the patient feeling less pressure, manifesting less resistance, and manifesting more capacity for self regulation.

The aspect of tai chi training that emphasizes increased awareness on the joints in conjunction with breathing and the particular movement involved represents a correspondence with Ericksonian principles of refocusing attention, interruption of habitual patterns, and an ongoing reorientation toward unconscious processes. These processes utilize a variety of resource networks operating cooperatively at varying levels of depth (Erickson & Rossi, 1979). This focusing on the joints generally functions as an experience of novelty that, with continued practice, represents an example of the “novelty, neurogenesis, numinosum effect” (Rossi, 2002). The unconscious processes associated with the nurturing and appreciating of novelty can continue to enhance response sets (Lynn & Sherman, 2000; Lynn & Hallquist, 2004) and response attentiveness (Erickson & Rossi, 1979), which in turn support the continuation and stabilization of positive momentum (Yapko, 2003). In conjunction with this are more opportunities for setting up polarities that are in alignment with a progressive dissociation between the old and the new (Erickson, 1958/1980; Kandel, 1998; Ribiero, 2004; Rossi, 2002).

In Taoism, the process for dealing with resistance and aggression is referred to as leading into emptiness. Learning to deal with resistance is learned through consistent, detailed, focused practice around the pushing hands exercises. The Tai Chi process of pushing hands is consistent with principles of physics in terms of dealing with force. In addition, it is equivalent to processes utilized in Erickson’s resistance protocol. Pushing hands develop sensitivity to

an opponent's intent, while training the skills to align with the physics of force utilizing the peng, lu, an sequence.

Erickson's process of validating the resistance, prior to refocusing of attention as seen by the quotes below, mirrors the peng portion of the pushing hands process. His redirection of attention is equivalent to the lu portion of the sequence. At the point at which he begins to depotentiate the conscious mind, he is mirroring the an portion of the sequence. All three stages of Tai Chi's handling of resistance (peng, lu, an) and Erickson's work that corresponds to and is equivalent to them build the positive momentum, although in different directions, that is necessary for reinforcing response sets/response attentiveness (Lynn & Hallquist, 2004; Yapko, 2003). When therapists trust and appreciate Tai Chi's handling of resistance their trust in their abilities to contain resistance is enhanced from the perspectives of preparation, feeling less pressure, being less reactive, and more sensitive to the temporal needs of patients. The following quote from Erickson's resistance protocol is equivalent to the peng stage of the Tai Chi pushing hands exercise:

You have come for therapy, you have requested hypnosis, and the history you have given of your problem leads me to believe strongly that hypnosis will help you. However, you state more convincingly that you are a resistant hypnotic subject, that others have failed despite prolonged efforts to induce a trance, that various techniques have been of no avail, and that reputable men have discredited hypnosis for you as a therapeutic aid in and of itself. You have frankly expressed your conviction that I cannot induce a trance in you, and with equal frankness you have stated that you are convinced that you will resist all attempts at hypnosis and that this resistance will be despite your earnest desire and effort to cooperate. (Erickson, 1958/1980, p. 302)

The following quote from Erickson's resistance protocol is equivalent to the lu stage of the Tai Chi pushing hands exercise.

Since you have come for therapy and you state that you are a fault-finding, uncooperative patient, let me explain some things before we begin. So that I can have your attention, just sit with your feet flat on the floor with your hands on your thighs, just don't let your hands touch each other in any way. (Erickson, 1958/1980, p. 302)

The following quote from Erickson's resistance protocol is equivalent to the an stage of the tai chi pushing hands exercise.

Now I don't really care if you listen to me with your conscious mind, because it doesn't understand your problem anyway, or you wouldn't be here, so I just want

to talk to your unconscious mind because it's here and close enough to hear me, so you can let your conscious mind listen to the street noises or the planes overhead or the typing in the next room. Or you can think about any thoughts that come into your conscious mind, systematic thoughts, random thoughts because all I want to do is talk to your unconscious mind, and it will listen to me, because it is within hearing distance even if your conscious mind does get bored. Just be comfortable while I am talking to your unconscious mind, since I don't care what your conscious mind does. (Erickson, 1958/1980, p. 302)

By focusing on the *tan tien*, and the activation of and harmonizing with the energy flow, the processes of Tai Chi support Erickson and Rossi's appreciation of the need for depth (Erickson & Rossi, 1979, p. 177; Gregory, 2011a, 2011b; Rossi, 2002). The focus on the different joints, the waist, the different points of pressure with respect to the feet connecting with the ground all provide novel experiences that point to new sources of comfort (Rossi, 2002).

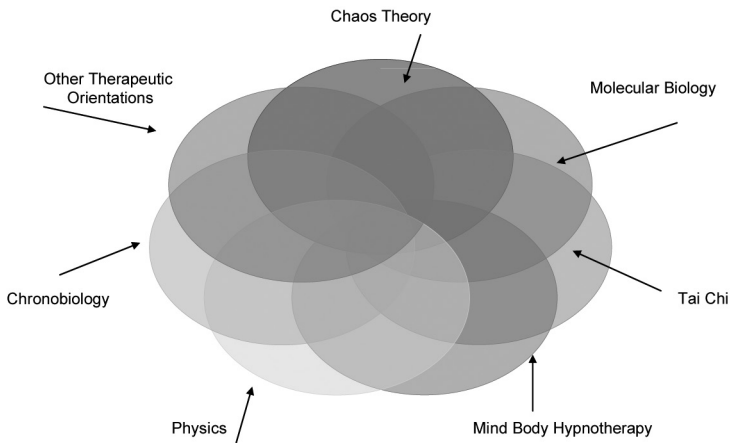
The continuous attention and focus on the interplay of opposites being complementary, necessary and supportive serve as a metaphor for approaching polarities from a fresh perspective, further enhancing trust with the therapist as the therapist mirrors the patient's need for continued dissociation from the past, unhealthy patterns, and unhealthy positions. This can facilitate the interruption of chronic, fixed, maladaptive patterns of dealing with experience and situations which have left one victimized on intrapersonal and interpersonal levels and affected one's self-esteem and attitude toward the world and life.

The emphasis on slowness, small steps, and softness all serve as metaphors, doorways, and implications for transforming symptoms and victim positions. Developing a yes set for slowness reduces pressure, facilitating a change in one's relationship with time, while simultaneously expanding the subsets of time identified previously by Erickson (Erickson, 1958/1980) and Rossi (Rossi, 1996, 2002). Developing a yes set for small steps also reduces pressure, while implicitly deflating components of narcissistic defences. Developing a yes set toward softness and its value facilitates a transformation of unconscious attitudes and positions regarding strength and empowerment.

Tai Chi's training for rooting, centring, and balance all refocus attention in ways that support empowerment, enhanced self-confidence and wellbeing, and correspond to mind-body hypnotherapy's refocusing of attention to unconscious healing resources. All of Tai Chi's processes utilize the implied directive to communicate a reassurance and encouragement to explore, learn, nurture and harness one's capacities for receiving, self-regulation and neurogenesis.

The integration of Tai Chi principles and processes does not require explicitly utilizing the concepts and processes directly. This integration is similar to the integrations of physics and classical music composition theory with mind–body hypnotherapy (Gregory, 2010, 2011a, 2011b). What is required is the therapist having a trust and appreciation for the principles and processes so that they can be utilized creatively either through the interpersonal technique or through questions that function as non sequiturs, interrupting rigid patterns and facilitating unconscious searches. Figure 2 includes Tai Chi in the integration process of mind–body hypnotherapy with other disciplines.

Figure 2: Integration of Mind Body Hypnotherapy with other Disciplines (Copyright © 2011 by Bruce Gregory)



Case Example

The patient is a 30-year-old male, married with no children. Patient is a recovering alcoholic with depression. Patient's father was rigid and hypercritical, and his mother was passive and co-dependent. Patient's primary defences were avoidance and intellectualization. Patient had a poor work history for the past 10 years with many prolonged periods of unemployment. Patient had been through two 30 day inpatient rehab programs, and entered therapy with an unstable recovery program. Patient was offered hypnotherapy to complement traditional therapy to help with his depressed mood and low self-esteem. In addition, hypnotherapy was considered a viable treatment option in the context of the duration of both the depression and low self-esteem, which had been chronic for over ten years, and that there were so many unconscious components of both the depression and low self-esteem.

Stages of Treatment

1. Approximately two months were spent validating the patient's experience from a variety of perspectives and time frames, with a focus on his shame, and tendency to intellectualize his experience in an attempt to avoid dealing with his feelings and pain.

Patient's nonverbal responses to being mirrored were interpreted in terms of his capacity to receive feedback that was directly and indirectly relevant to some of his unconscious needs. In particular, his eye movements and eye fixation were interpreted as possibly reflecting a connection with parts of his unconscious that were directing the focus of his attention in a particular direction. Patient demonstrated receptivity and responsiveness to the interventions that refocused his attention, and brought him comfort and some insight, as memories surfaced relative to the deprivations and anxieties he suffered during multiple relocations during adolescence. In addition, patient began to integrate the support he had received from hypnotic experiences and began to respond spontaneously to cues from his unconscious and go into trance naturally during session without the benefit of formal direction.

2. In the second stage of treatment patient was asked a series of questions (basic accessing) to assess receptivity, facilitate unconscious searches and interrupt rigid patterns. A series of questions, seeding and interspersing the themes of position, time, motion, interruptions of habitual patterns, and the establishment of a series of polarities were asked. Questions asked included;
 - Can you remember whether you drank in any specific position?
 - Did you have an average amount of time to finish your drink?
 - Did you often vary your rhythm in drinking?
 - Do you regularly drink with your left hand or your right?
 - Do you recognize any sensations or connection to places in your body when you reflect on your remorse about the damage drinking has caused in your life?
 - Have you ever explored particular areas of your body to connect to where tension might be being held?
 - Can you remember what you were feeling or thinking on any occasion prior to drinking?
 - Can you recognize the difference between when you are thinking and when you are feeling?
 - What does it feel like when you are in your head thinking?
 - When you contact a feeling, do you continue to feel it, or is it interrupted by a thought?

- When you notice your breathing changing, or your eyes beginning to flutter at a different rhythm, do you recognize consciously or unconsciously that you are receiving from your unconscious?
3. As containment evolved and the patient was receptive to unconscious searches, a series of polarities were seeded, and explored to facilitate reorganization of the patient's relationships with position, time, space, and motion. The therapist's delivery was slowed, and an emphasis was consistently placed on the next step in the exploration, or small steps. Questions asked in this stage included;
- As you continue to receive do you have any conscious or unconscious awareness of the rhythm your unconscious is setting for this experience?
 - As you notice your unconscious guiding you deeper can you take a moment or two to simply enjoy some small amount of satisfaction that you are being supported by the resources of your unconscious and that you have been spontaneously cooperating with intelligent, purposeful forces deep inside your core?
 - Can you imagine for a moment or two putting the support you are continuing to receive even now in one hand, while putting the cooperation your conscious mind is manifesting in the other, and wondering how the two hands might interact?
 - Can you take a moment ... and notice any difference between conscious thoughts and unconscious process as you continue to go deeper in small, gradual steps?
 - Have you ever wondered what kind of small step you might take to support you going even deeper?
 - If you were to imagine putting your inhalation and your exhalation in each of your hands, would your unconscious mind prefer a particular hand for your exhalation or your inhalation?

These types of basic accessing questions interrupted patterns of avoidance and intellectualization and initiated unconscious searches that could be paced to deepen the patient's experience and continue develop more trust with the unconscious and its resources.

After about six sessions of exploration of unconscious processes, the patient was able to spontaneously go into mind–body states for five to ten minutes throughout therapy sessions.

The patient experienced being supported by his unconscious, his general level of anxiety reduced by 50%, and he looked forward to receiving more support in the future.

As these experiences were integrated, the patient's level of functioning generally increased in the areas of time management and self-control. The areas of time management and self-control were considered to be the main criteria through which the effectiveness of hypnotherapy was evaluated.

CONCLUSION

The integration of Tai Chi principles and processes with mind-body hypnotherapy is achieved through the utilization of creativity, expanded trust, and the implied directive. The utilization of the implied directive incorporates the correspondence principle used in Cantor's set theory and the equivalence principle used by Einstein in his formulation of the equations for general relativity. The main principles and processes of Tai Chi are discussed in terms of their relevance and application to:

- The expansion of trust in physiological resources,
- Transformation of the patient's relationship to pressure and time,
- Dealing with resistance,
- Valuing and integrating the variables of time, space, motion and position, and
- Deepening an appreciation of the role of polarities in the treatment process.

The integration of tai chi principles and processes with mind-body hypnotherapy can facilitate new pathways for comfort, problem solving and healing through the development of yes sets, seeding, the interspersal technique, and the creative utilization of polarities.

REFERENCES

- Beck, A. (1976). *Cognition therapy and the emotional disorder*. New York: International University Press.
- Cantor, G. (1955). *Contributions to the founding of the theory of transfinite numbers* (P. E. B. Jourdain, Trans.). New York: Dover (reprint).
- Dolan, Y. (1991). *Resolving sexual abuse*. New York: Norton.
- Drager, D. F., & Smith, R. W. (1981). *Comprehensive Asian fighting arts*. New York: Oxford University Press.
- Dunham, W. (1991). *Journey through genius*. London: Penguin.
- Erickson, M. (1958/1980). Naturalistic techniques of hypnosis. In E. Rossi (Ed.), *The Collected papers of Milton H. Erickson on hypnosis: Vol 1. The nature of hypnosis and suggestion* (pp. 168–176). New York: Irvington.

- Erickson M., & Rossi, E. (1976). Two-level communications and the microdynamics of trance and suggestion. *American Journal of Clinical Hypnosis*, 18, 153–171.
- Erickson, M., & Rossi, E. (1979). *Hypnotherapy: An exploratory casebook*. New York: Irvington.
- Erickson, M., & Rossi, E. (1989). *The February man: Evolving consciousness and identity in hypnotherapy*. New York: Brunner Mazel
- Erickson, M., Rossi, E., & Rossi, S. (1976). *Hypnotic realities*. New York: Irvington.
- Greene, B. (1999). *The elegant universe: Superstrings, hidden dimensions, and the quest for the ultimate theory*. New York: W.W. Norton.
- Greene, B. (2004). *The fabric of the cosmos*. New York: Alfred A. Knopf.
- Gregory, B. (2005/2007). *Integration of Rossi's mind–body hypnotherapy with other therapeutic modalities*. Workshop presentation at Ericksonian Foundation Conference, Phoenix, AZ.
- Gregory, B. (2010). the integration of classical music composition theory with mind–body hypnotherapy. *Australian Journal of Clinical and Experimental Hypnosis*. Vol. 38, No. 1, 2010, 1–24.
- Gregory, B. (2011a). Utilizing and integrating mathematics and physics in treatment for recovery from trauma and abuse. In K. M. Gow & M. J. Celinski (Eds.), *Trauma: Recovering from deep wounds and exploring the potential for renewal*. New York: Nova Science Publishers.
- Gregory, B. (2011b). The expanding role of creativity in the treatment and transformation of resistance. *European Journal of Clinical Hypnosis*, 10, 42–59.
- Grove, D., & Panzer, B. (1989). *Resolving traumatic memories: Metaphors and symbols in psychotherapy*. New York: Irvington.
- Haley, J. (1973). *Uncommon therapy*. New York: W.W. Norton.
- Hilgard, E. R. (1977). *Divided consciousness: Multiple controls in human thought and action*. New York: Wiley.
- Hilgard, E. R. (1986). *Divided consciousness: Multiple controls in human thought and action* (expanded ed.). New York: Wiley.
- Hilgard, E. R. (1994). Neodissociation theory. In S. J. Lynn & J. W. Rhue (Eds.), *Dissociation: Clinical, theoretical and research perspectives* (pp. 32–51). New York: Guilford Press.
- Isacson, W. (2007). *Einstein: His life and universe*. New York: Simon & Schuster.
- Jung, C. (1916). The transcendent function. In *The collected works of C. G. Jung: Vol. 8. The structure and dynamics of the psyche* (pp. 67–91). Princeton, NJ: Princeton University Press.
- Kandel, E. (1998). A new intellectual framework for psychiatry? *American Journal of Psychiatry*, 155, 457–469.
- Kleitman, N. (1969). Basic rest-activity cycle in relation to sleep and wakefulness. In A. Kales (Ed.), *Sleep: Physiology and pathology* (pp. 33–38). Philadelphia: Lippincott.
- Lynn, S., & Hallquist, M. (2004). Toward a scientifically based understanding of Milton H. Erickson's strategies and tactics: Hypnosis, response sets and common factors in psychotherapy. *Contemporary Hypnosis*. Vol. 21, No. 2, 63–78.
- Lynn, S., & Sherman, S. (2000). Clinical Implications of sociocognitive models of hypnosis:

- Response set theory and Milton Erickson's strategic interventions. *American Journal of Clinical Hypnosis*, 42, 294–315.
- Levine, P. (1997). *Waking the tiger*. Berkeley: North Atlantic Books.
- Magnavita, J. J. (2008). Toward unification of clinical science: The next wave in the evolution of psychotherapy? *Journal of Psychotherapy Integration*, 18, 259–263.
- Masterson, J. (1976). *Psychotherapy of the borderline adult*. New York: Brunner Mazel.
- Norcross, J. C., & Newman, C. F. (1992). Psychotherapy integration: Setting the context. In J. C. Norcross & M. R. Goldfried (Eds.), *Handbook of psychotherapy integration* (pp. 3–45). New York: Basic Books.
- Perls, F. S. (1973). *Gestalt therapy verbatim*. Moab, UT: Real People Press.
- Ribeiro, S. (2004). Towards an evolutionary theory of sleep and dreams. *A Mente Humana*, 3, 1–20.
- Rosen, S. (1982). *My voice will go with you*. New York: W. W. Norton.
- Rossi, E. (1986/1993). *The psychobiology of mind–body healing* (rev. ed.). New York: W. W. Norton.
- Rossi, E. (1996). *The symptom path to enlightenment: The new dynamics of self-organization in hypnotherapy*. New York: Zeig, Tucker & Theisen.
- Rossi, E. (2002). *The psychobiology of gene expression: Neuroscience and neurogenesis in therapeutic hypnosis and the healing arts*. New York: W. W. Norton Professional Books.
- Rossi, E. (2004). Art, beauty and truth: The psychosocial genomics of consciousness, dreams, and brain growth in psychotherapy and mind–body healing. *Annals of the American Psychotherapy Association*, 7, 10–17.
- Rossi, E. (2005). The memory trace reactivation and reconstruction theory of therapeutic hypnosis: The creative replaying of gene expression and brain plasticity in stroke rehabilitation. *Hypnos*, 32, 5–11.
- Rossi, E., & Nimmons, D. (1991). *The twenty minute break: The ultradian healing response*. New York: Zeig, Tucker & Theisen.
- Rossler, O. (1992). The future of chaos. In J. Kim & J. Stringer (Eds.), *Applied chaos* (pp. 457–465). New York: Wiley
- Sherman, S., & Lynn, S. (1990). Social psychological principles in Milton Erickson's psychotherapy. *British Journal of Experimental and Clinical Hypnosis*, 7, 37–46.
- TCL(Transnational College of LEX). (1996). *What is quantum mechanics?* Boston: Language Research Foundation.
- Yapko, M. (2003). *Trancework* (3rd ed.). New York: Brunner-Routledge.
- Yelle, R. (2000). The rebirth of myth? Nietzsche's eternal recurrence and its romantic antecedents. *Numen*, 47, 175–02.
- Zeig, J. K. (1985). *Experiencing Erickson, An introduction to his work*. New York: Brunner Mazel.
- Zeig, J. K. (1988). An Ericksonian phenomenological approach to therapeutic hypnotic induction and symptom utilization. In J. K. Zeig and S. R. Lankton (Eds.), *Developing Ericksonian therapy: State of the art* (pp. 353–375). New York: Brunner/Mazel.

REVIEW

THE HANDBOOK OF CONTEMPORARY CLINICAL HYPNOSIS: THEORY AND PRACTICE

Les Brann, Jacky Owens and Ann Williamson (Editors)
Chichester: Wiley-Blackwell. 2012. 656 pp. US\$220

This treatise was developed as an introductory textbook to assist those professionals who wish to practise hypnosis and who need an overview of aspects of theory and practice. Thus the book has something for clinicians new to the area of hypnosis and also for those who are more experienced in this field (who wish to refresh their prior learning).

The three-part structure contains 40 chapters that are offered by 30 different practitioners. Some of these authors you will recognize from their contributions to, or citations in, the *AJCEH*: for example, David Craft, Jacky Owens, Phyllis Alden, Les Brann, Peter Naish and Peter Hawkins.

The instructions to the authors have obviously been to keep to a set format, give an introduction, outline the key issues, and summarize where possible utilizing a table formatting which assists in reference and recall. Because there is a strict word limit to each chapter, this is not a book for those readers who like to delve deeper into a topic. However, they would be happy with the inclusion of updates in the field that they can then read more about.

In the Foreword, David Spiegel updates us about what works and what doesn't in terms of hypnosis outcomes. Later, Chapter 6 addresses a range of safety issues in hypnosis which a clinician would need to be cognizant of before commencing practice, as would any person demonstrating hypnosis or conducting research in the field. In Chapter 40, in Part Three of the text, Les Brann advises us on how to commission, provide, and audit hypnotherapy services—something not covered in the majority of textbooks.

The Preface poses a challenge to evidence-based medicine as being restrictive in the anticipation of providing more cost-effective health outcomes. The drawback of this is that the protocols tend to drive the therapy

instead of the individual's unique problems (with the latter being one of the fundamental criteria for change and healing in hypnosis).

Part One ("The Fundamentals"—six chapters) commences with a brief chapter (Chapter 1) on understanding the relevant theory and making sure that what is being studied and measured is in fact the actual effects of hypnotic phenomena. The second chapter on hypnotic phenomena analyses hypnotizability, suggestibility and hallucinations; and gives some uses of hypnosis, debates on trait or state theories, socio-cognitive approaches, and other pertinent overview material.

As with most introductory textbooks, there is a chapter (3) on the history of hypnosis, including cultural ritual influences and information on altered states of consciousness. It includes both traditional and modern contributions and offers Table 3.1 as a tool for students to grasp the historical mapping of hypnosis theories.

In the role of imagery and visualization in hypnosis (Chapter 4), we are briefly introduced to several aspects of imagery including hypnopompic and hypnagogic images, associated and dissociated imagery and its uses and perspectives on mind-body links and the psychoneuroimmunology (PNI) perspective.

Chapter 5 deals with the use of language and metaphor, and the information is clearly presented by Ann Williamson in graphic and text box format, teaching the readers as they progress through the chapter. This is one of those chapters that practitioners who have not previously been exposed to Ericksonian hypnosis would find interesting. It is one of the longer chapters.

Part Two ("The Stages of Therapy"—seven chapters) outlines the actual steps and stages in therapeutic hypnosis session/s: initial steps, explaining hypnosis, going through induction and deepening procedures, establishing what the client's problem really is, resolving the problem, instructions on how to utilize ego-strengthening, anchoring and reorienting (including ecological checks) and how to teach self-hypnosis and when to set homework for clients. The chapters contain many techniques, scripts and case studies which are highly valuable for new students of hypnosis.

Part Three ("Specific Disorders"—27 chapters) focuses on the most common issues that bring clients to consider hypnosis as an adjunct to treatment. This section also includes chapters on using hypnosis with children, how to work in transcultural settings, and gives an overview of informal hypnosis techniques.

Reordering the sequence of therapeutic focus in the section for review purposes, chapters include self-esteem and self-confidence building and performance enhancement, which are clearly not part of disorders per se.

Chapters on treating specific psychological disorders include anxiety and panic attacks, depression, phobias, adjustments disorders, eating disorders, habit disorder and addictions, OCD, psychosexual problems, sleep problems and PTSD.

Some of the medical problems discussed where hypnosis can be helpful are dermatology, pain, oncology, cancer, death, and dying and loss. Additionally, the efficacy of hypnosis in anaesthesia and reactions to surgery and invasive procedures, and its place in obstetrics and treatment of infertility, are explained.

Moving into a lesser walked path, there are two chapters on how hypnosis may assist with learning disabilities and autistic spectrum disorder.

In this major part of the book, use is made of background research findings, relevant theories, tables and graphs, case studies, scripts, descriptions of techniques, and examples to aid the reader in understanding how to go about applying what they learn in professional hypnosis training programs.

Overall, a useful adjunct to one's professional learning for students of hypnosis.

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