1. INTRODUCTION TO A CREATIVE DIALOGUE WITH OUR GENES

This chapter presents therapeutic hypnosis and mind-body therapy as a “creative dialogue with our genes”. While this approach is consistent with current neuroscience and much practical clinical experience, it has not yet been validated to meet the criteria of Evidence Based Medicine (EBM) and Cochran meta-analysis.

There is a need to report the implications of current neuro-science research for mind-body therapy, and to provide innovative approaches to hypnosis and healing, that are easy to learn and practice in brief therapeutic interventions, by health workers, without a background in neuro-science. The full scientific report of the authors is provided for deeper study in the DVD.

This brief printed text presents basic concepts, in a simple way that can be easily absorbed by primary health care workers and others. It mainly concentrates upon practical application, with relatively simple approaches that have been taught to caregivers in practical workshops throughout the world for many years. Each approach is capable of many variations with more experienced therapists.

2. PATIENTS CAN HEAL THEMSELVES

The basic concept of mind-body healing is that the patient’s own creative activity evokes activity-dependent gene expression, brain, and behavioral plasticity and the so-called “magic and miracles” of mind-body healing. It is the deeply meaningful and creative replaying of the listener’s own mental processes that creates hypnotic experience, problem solving and healing.

The locus of healing is within the patient; the therapist has no mysterious or extraordinary powers of programming, control or healing (1).

Patients heal themselves when they are fortunate enough to receive appropriate “therapeutic suggestions,” that function as “implicit processing heuristics,” which evoke the psychological experiences of novelty, enrichment and activities that generate activity-dependent gene expression, brain plasticity and mind-body healing (7).

The ideal of therapeutic suggestion is to facilitate the natural dynamics of implicit and explicit processes in the adaptive reconstruction of the neural networks of mind, memory and behavior, not to merely influence or program the patient with direct, indirect, or covert suggestions.
3. MIND-BODY THERAPY

Medical pioneers such as Anton Mesmer (1734-1815) and James Braid (1795-1870) originally explored hypnosis as a method of healing had little understanding of how it worked. James Braid’s defines hypnotism as a study of reciprocal actions and reactions of mind and matter upon each other.

Even today, 150 years later, exactly how psychophysiology operates in mind-body therapy is poorly understood. There are no generally recognized departments of therapeutic hypnosis or mind-body therapy in our universities and medical schools that conduct systematic research on these therapies. Within the past generation, however, the new discipline of neuroscience has emerged with the advent of new technologies for scientific investigation.

The classical four stage creative process for health care included:

Stage one is getting and idea and starting to work on a problem.

Stage two is the sometime difficult experience of struggle and conflict trying to solve the problem.

Stage three is the creative moment of getting a flash of insight.

Stage four is the happy verification of the problem solution (15).

But how does the mind-body healing get from the brain into the body? One obvious answer is that “the nerves” carry messages between mind, brain and body. A more subtle pathway is via hormones, growth factors, etc, synthesized in the brain in response to environmental signals and stress, which are then transmitted as “molecular messengers” through the blood stream to potentially every organ, tissue and cell of the body as illustrated in figure four (21).

Functional magnetic resonance imaging (fMRI), DNA microarrays and bio-informatic databases, for example, have made a great deal of research available, for understanding hypnosis and therapeutic suggestion related to mind-body therapy.

4. INNOVATIVE APPROACHES

The current evidence of the degree of involvement of gene expression and brain plasticity in memory, learning, behavior, education and psychotherapy is still controversial at this time but it is being strongly implied by many scientists (32).

Mind-body communication, via our nervous system, takes place almost instantly in milliseconds. The flow of mind-body communication via molecular messengers such as hormones, etc, in the blood stream throughout the body requires about a minute. When these signals are received by cells, many of them are communicated to the nucleus of the cell where they “turn on” genes (gene expression).
Genes express a DNA code to make proteins that are “molecular machines” that can carry out the actual physical healing in mind-body therapy. As illustrated in figure 4, an entire cycle of mind-body communication and healing as well as the ordinary activities and performances of daily life takes about 90-120 minutes.

This is sometimes called an “Uladian Cycle” (in contrast to the “Circadian” or daily 24 hour cycle). In chronobiology (the biology of time) it is also called “The Basic Rest-Activity Cycle” (BRAC), (22, 23).

There is a wide range of interrelated psychobiological functions that manifest aspects of the BRAC when “immediate-early genes,” are turned on within minutes of receiving salient environmental cues of novelty, reward or enrichment.

This means that a fundamental unit of mind-body communication and healing can be initiated and sometime actually take place within the typical time parameters of a single session of therapeutic hypnosis or psychotherapy. It is noteworthy that Milton H. Erickson, MD (7), generally regarded as one of the most innovative psychotherapists of our time, typically conducted his sessions of therapeutic hypnosis for 90-120 minutes.

Brain plasticity is regarded as the physical basis of the natural transformations of mind, consciousness and behavior. Direct evidence for gene expression facilitated by therapeutic hypnosis and psychotherapy remains sparse at this time, however (7, 23, 27-31).

5. PRACTICAL APPLICATION – FOUR STEPS

The four-stage creative process of therapeutic hypnosis are all variations of Erickson’s Hand Levitation method of inducing therapeutic hypnosis and facilitating psychological problem solving and mind-body healing (7):

**Step One: Initiation** - Symptom Scaling & Privacy - A natural induction to activity-dependent Ericksonian work begins with the typical history taking in brief psychotherapy.

**Step Two: Incubation** - The Dark Night of the Soul  - This is the valley of shadow and doubt, or “the storm before the light” that is portrayed in the poetry and song of many cultures. Emotional conflicts and symptoms that come up are the mind-body language about unresolved problems at an unconscious level that require review and re-construction.

**Step Three: Illumination** – The “Ah-ha” Experience - This stage is characteristic of the famous “Ah-ha” or “Eureka” experience celebrated in ancient and modern literature when the creative process is described in the arts and sciences.

**Step Four: Verification** – Reality Testing - What current life changes does the client want to make as a result of this creative experience?
The therapist’s job here is to:

Facilitate a follow-up discussion to validate the value of the psychotherapeutic process and;

Reframe Symptoms into Signals and Psychological Problems into Inner Resources.

The symptom scaling of the subject’s subjective state of being before and after the psychotherapy can be a validation of therapeutic progress, problem solving and healing.

This process is illustrated the training exercises (Figures 1, 2, 3)
### Figure 1. Facilitating the Four Stage Creative Process with Hand Mirroring

| Stage 1: Preparation: Sensitization & Ideodynamic Experiencing. | ![Image](image1.png) |
| "Place your hands up with the palms facing each other in a symmetrical manner about 7 to 8 inches apart [Therapist demonstrates]... With great sensitivity, notice what you begin to experience ... Is one hand warmer or cooler than the other? ...Lighter or heavier? ... More or less flexible? ... Stronger or weaker? A force or energy pulling them together or apart? ... Do they seem to move with a mind of their own? ... Allowing those hands to express whatever they need to about your feelings and life situations? |

| Stage 2: Incubation: Accessing, Reviewing, and Creatively Replaying Salient State-Dependent Memory, Learning, and Behavior. | ![Image](image2.png) |
| "Will just one of those hands now begin to drift down slowly to signal that your inner nature will now explore some private... even secret emotions and memories...? Courage to receive all that is needed? ... One part of you experiencing that as fully as you want to... while another part guides you safely to a satisfactory solution. |

| Stage 3: Illumination: The Novelty-Numinosum-Neurogenesis Effect. | ![Image](image3.png) |
| "Will the other hand now drift down slowly as you explore possibilities of healing and problem-solving?... Will that hand go down slowly signalling when you are ready to begin to experience something new?... Interesting? ... Curious? ... Experiencing what you need for healing... Exploring sources of strength and success as that hand comes to rest? |

| Stage 4: Verification: Reframe Symptoms into Signals & Problems into Resources. | ![Image](image4.png) |
| When your inner mind knows you can continue these positive developments and when you can enjoy taking a break several times a day to review and strengthen your progress... What will it feel like to come back to a full awakening? [Review the entire session by Reframing Symptoms into Signals and Problems into Inner Resources for Self Care.] |
**Figure 2. Therapeutic Focusing for Clarity and Strength**

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<td><strong>1. Preparation: Wanting and not wanting.</strong></td>
<td>“Everyone wants something very much on the one hand … [Therapist models by holding out one hand with the palm facing upward as if receiving.] At the same time most people have some idea of what they do not want on the other hand… [Therapist models the other hand with a palm facing outward position as in a “stop” gesture.] “As you tune into yourself, you can begin to wonder which hand feels like the side of you that wants something and which hand expresses what you do not want… That’s right, test one hand and the other to experience, which expresses two opposite sides of your nature. [Therapist models by making a few tentative alternating gestures of the receiving and stop gestures with one hand and the other with an exploratory attitude to find which side feels right expresses which part.]</td>
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<td><strong>2. Incubation: Accessing motivations and creative replay.</strong></td>
<td>“That’s right, as if each hand and arm has a mind of its own… each going their own way…? [The therapist pantomimes a dramatic confrontation between the two hands with slow exploratory movements.] Sometimes together…sometimes apart..? Allowing that to continue until…? One hand pushing away memories, conflicts or difficulties, while the other hand receives what you need for healing.</td>
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<td><strong>3. Illumination: Creative Replay, discovery and surprise.</strong></td>
<td>[Therapist continues to model a psychodrama between the hands to encourage the person with supportive implicit processing heuristics.] “That’s right… how does it come to its own natural resolution…? Letting that inner drama play itself out in its own way. Yes, honestly letting it guide you in ways that may seem surprising…? [Pause] All right, what was most surprising (curious, unexpected, meaningful, etc.) to you about all that…? What is most rewarding in your experience now?</td>
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<td><strong>4. Verification: Review and self-prescribed behavioral change.</strong></td>
<td>[The person usually comes to experience spontaneous resolution of the inner journey within 15 or 20 minutes and usually feels ready to say something about it.] Are you clear about what you need to change? …What you need to let go of in your life? …What you need to receive for strength and well being in your life? What changes will you now make in your real everyday life to optimize healing?</td>
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**Figure 3. Problem Solving by Integrating the Opposites**

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<td><strong>1. Preparation:</strong> Facilitating self-awareness and self-sensitivity.</td>
<td>&quot;When you are ready to do some important inner work on that problem will you hold your hands above your lap with your palms up… as when you are ready to receive something? [Therapist models] As you focus on those hands in a sensitive manner, I wonder if you can begin by letting me know which hand seems to experience or express that fear (or whatever the negative side of the patient’s conflict may be) more than the other…? [As soon as the person indicates that one hand is more expressive of the problem or symptom than the other, the therapist goes on to stage two.]</td>
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<td><strong>2. Incubation:</strong> Accessing Resources and Creative Review.</td>
<td>&quot;Wonderful… now I wonder what you experience in your other hand, by contrast,… at the same time…? What do you experience in that other hand that is the opposite of your problem [issue, symptom, etc.]? Good, as you continue experiencing both sides of that conflict [or whatever]…at the same time…Will it be okay to let me know what begins to happen next…? Reviewing and replaying that until…?</td>
</tr>
<tr>
<td><strong>3. Insight:</strong> Creative Replay, Intuition &amp; Creative Possibilities.</td>
<td>&quot;Becoming more aware of…? Interesting…? Something changing…? And is that going well…? Is it really possible…? Something new? …Continuing to explore positive possibilities …Appreciating the value of what you are experiencing… knowing what is best… most important? …Your own way of helping yourself? …</td>
</tr>
<tr>
<td><strong>4. Verification:</strong> Reintegration, reframing &amp; self-prescriptions.</td>
<td>&quot;What does all this experience mean to you…? How will you experience [behave, think, feel, or whatever] differently now…? How will your life be different now…? How will your behavior change now…? What will you do that is different now…? What recommendations do you prescribe for yourself as a result of this creative experience today?</td>
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6. PRACTICAL APPLICATION – ADVANCED APPROACH TO MIND-BODY HEALING

The previous three highly structured activity dependent approaches to therapeutic hypnosis are appropriate for health care workers and students and professionals in mental health on many levels.

The following clinical approach is unstructured, however, and requires more extensive professional training in psychodynamics and psychosomatic medicine, because it deals with medical symptoms. It is considered to be an advanced approach that should be conducted only with adequate medical supervision.

Figure 4 Stages 1-4 are artist sketches of how this patient with rheumatoid arthritis experienced the four stage creative process of mind body health.

The “thought blooms” of the therapist are his conjectures of what the patient may be experiencing on all levels from the molecular-genomic to the cognitive-emotional-behavioral.

This is a highly speculative interpretation that is consistent with the neuroscience and bioinformatic perspective. Research is now urgently needed to assess these conjectures with fMRI, DNA micro-arrays, etc (4)

Figure 4. An Advanced Approach to the Four Stage Creative Process in Mind-Body Therapy

| Stage One: The therapist models a delicately balanced and symmetrical hand position a few inches above the lap to initiate a hand levitation approach to the induction of therapeutic hypnosis. The therapist wonders what stage of the basic rest-activity cycle (BRAC) the patient may be experiencing, whether CYP17 — the social gene — is becoming engaged as a natural manifestation of the psychotherapeutic transference and to what extent immediate-early genes (IEGs) such as c-fos and c-jun — associated with a creative state of psychobiological arousal, problem solving and healing — are becoming engaged. |
Stage Two: The patient experiences psychobiological arousal (associated with behavioral state-related gene expression (BSGE). She evidences surprise and confusion about her unusual sensations and involuntary movements that were not suggested by the therapist. The therapist wonders how to facilitate the psychosocial genomics of immunological variables such as interleukin-1, 2 and 1β associated with Cox2 that has been implicated in rheumatoid arthritis which is the patient’s presenting symptom.

Stage Three: of the creative cycle wherein the patient experiences the playful activity-dependent exercise of shadow boxing as a creative breakout of her typically restrained hand and finger movements associated with her rheumatoid arthritis. Future research will be needed to determine if activity-dependent gene expression (ADGE) — such as the CREB genes associated with new memory and learning — as well as the ODC and BDNF genes associated with physical growth and neurogenesis are actually being engaged during such creative moments.

Stage Four: of the creative cycle when the patient received a standing ovation from the audience. The therapist speculates that the zif-278 gene will certainly be expressed in her REM dream states tonight to encode her new therapeutic experiences with this unusually strong show of psychosocial support (4).

7. OVERALL
Nothing, it seems turns on gene expression and brain plasticity as much as the presence of others of the same species!

Researchers consider this an example of the deeply conserved and constitutive nature of molecular-genomic experience at this deep psychobiological level of life. This means that it is highly likely that it is a life process that is common to most species —including humans."

Yet the researchers consider this an example of the deeply conserved and constitutive nature of molecular-genomic experience at this deep
psychobiological level of life. This means that it is highly likely that it is a life process that is common to most species—including humans.

This generalization to the human level would certainly have many interesting implications for understanding the psychosocial and cultural genomics of human behavior and society ranging from the dynamics of personal relationships to families, group processes, the madness of crowds, politics, war and peace as well as the seeming uncanny efficacy of psychotherapeutic demonstrations in the history of classical hypnosis (44).

Psychosocial and cultural genomics is the newly emerging study of how our psychological and social environment interacts with gene expression in everyday life as well as the creative dynamics of human experience in the cultural arts, sciences and healing (29).

This chapter can only offer a tentative outline to help students and therapists conceptualize the deep psychobiology of therapeutic hypnosis on all levels from gene expression and brain plasticity to the psychosocial dynamics of problem solving and healing.

While gene expression is currently being documented as a source of individual differences between human groups (51), the significance of gene expression and brain plasticity for human behavior, consciousness, relationships and health remains a topic of scientific scrutiny, interpretation and debate at this time (52).

A full research report of the authors is provided for deeper study in the DVD.

8. AUTHOR REFERENCES


FULL LIST OF REFERENCES


