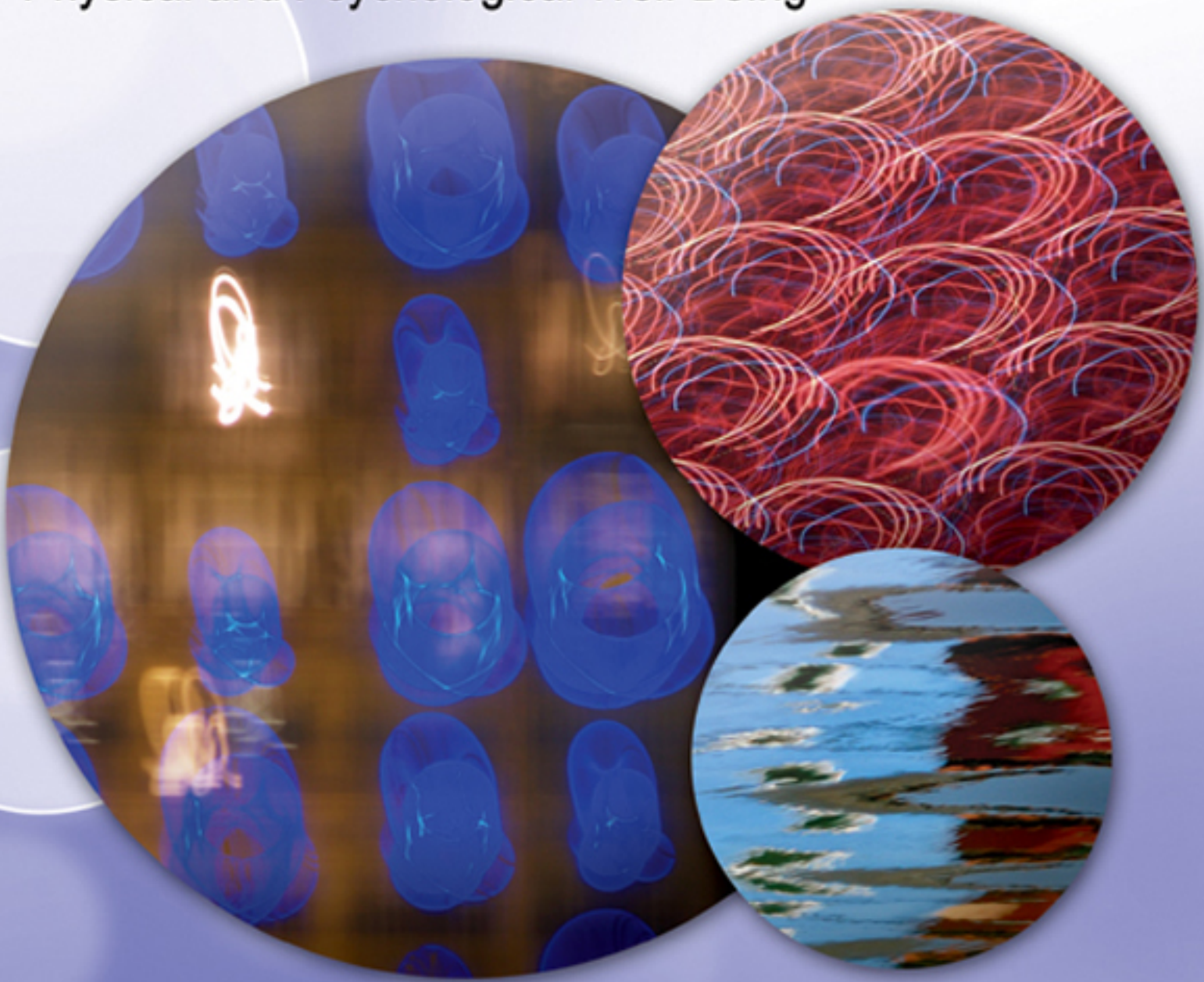
Clinical Hypnosis in Pain Therapy and Palliative Care

A Handbook of Techniques for Improving the Patient's Physical and Psychological Well-Being



Maria Paola Brugnoli, M.D.

CLINICAL HYPNOSIS IN PAIN THERAPY AND PALLIATIVE CARE

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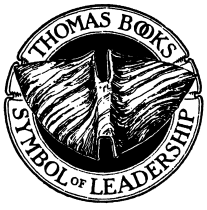

CHARLES C THOMAS • PUBLISHER, LTD.
Springfield • Illinois • U.S.A.

Published and Distributed Throughout the World by

CHARLES C THOMAS • PUBLISHER, LTD.
2600 South First Street
Springfield, Illinois 62704

ISBN 978-0-398-08765-4 (hard)
ISBN 978-0-398-08766-1 (paper)
ISBN 978-0-398-08767-8 (ebook)

Library of Congress Catalog Card Number: 2013023179

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Printed in the United States of America
MM-R-3

Library of Congress Cataloging-in-Publication Data

Brugnoli, Maria Paola, author.
Clinical hyponosis in pain therapy and palliative care : a handbook of techniques for improving the patient's physical and psychological well-being / by Maria Paola Brugnoli ; foreword by Julie H. Linden and Consuelo C. Casula.
p. ; cm.
Includes bibliographical references and index.
ISBN 978-0-398-08765-4 (hard) -- ISBN 978-0-398-08766-1 (pbk.) -- ISBN 978-0-398-08767-8 (ebook)
1. Title.
[DNLM: 1. Hypnosis–methods. 2. Hypnosis, Anesthetic. 3. Pain Management–methods. 4. Palliative Care,methods. 5. Spiritual Therapies. WM 415]

RC499.A8
615.8′5122–dc23

2013023179

FOREWORD

Anesthetist and pain specialist, Paola Brugnoli, brings together her experience, knowledge and emotional intelligence in this integrative work on clinical hypnosis and pain management. Unlike many other books that address the topic of pain treatments, this one is expansive. Conceptually, Brugnoli explores the links between ancient philosophy and quantum physics, reviews consciousness and modified states of consciousness, and updates our understanding of neurophysiology and neuropsychology as they each influence our understanding of how to relieve pain and suffering.

A clinical hypnotherapist, she considers the shared roots of clinical hypnosis and mindfulness and provides a spiritual overview of the universal contributions to healing that come from the practices of many meditative states in different philosophies and religions. Finally, she is able to frame this in a life-span perspective noting the diverse approaches with children and adults.

Her deep sensitivity is most notable in her attention to the dignity of the person in pain. She gathers together the techniques for distracting them from the painful present and transporting them to another dimension. One can imagine her psychological hand-holding and support as she moves her patients from suffering to relief.

Practically, Brugnoli is generous in providing the reader the scripts for many inductions. The handbook is enriched by medical and hypnotic techniques for pain analgesia as well as hypnotic deepening techniques to activate spiritual awareness. It also indicates when and how to use them with children and adults.

With extensive references, this book offers accessible concepts and practical suggestions to the reader. It highlights the relational and the creative process, encouraging each clinician to find his or her own way of facilitating the mechanisms in the patient to alleviate pain and suffering. The book demonstrates the vast experience Brugnoli accumulated in her work as anesthesiologist, palliative care specialist and Pain Therapist at University Department of Anesthesiology.

JULIE H. LINDEN, PH.D.
CONSUELO C. CASULA, PSY.D.

INTRODUCTION

And a man said, speak to us of self knowledge.
And he answered saying:
Your hearts know in silence the secrets of the days and of the nights.
But your ears thirst for the sound of your heart's knowledge.
You would know in words that which you have always known in thought.
You would touch with your fingers the naked body of your dreams.
And it is well you should.
The hidden well-spring of your soul must rise and run murmuring to the sea;
And the treasure of your infinite depths would be revealed to your eyes.

Kahlil Gibran

Yesterday I thought myself a fragment quivering
without rhythm in the sphere of life.
Now I know that I am the sphere,
and all life in rhythmic fragments moves within me.

Kahlil Gibran

Clinical Hypnosis in Pain Therapy and Palliative Care refers to the conscious, calm awareness of cognitions, sensations, emotions, and experiences. This state can be achieved through mindfulness and meditative states, which are practices that cultivate nonjudgmental awareness of the present moment. Mindfulness (from Pāli; *sati;* and Sanskrit; *smṛti;* furthermore, translated as awareness) is a spiritual or psychological faculty (indriya) that is considered to be important in the path to enlightenment according to the teaching of the Buddha. It is one of the seven factors of enlightenment. "Correct" or "right" mindfulness is the seventh element of the noble eightfold path. Mindfulness meditation can also be traced back to the earlier Upanishads, part of Hindu scripture.

The Abhidhammattha Sangaha, a key Abhidharma text from the Theravada tradition, defines sati as follows: "The word *sati* derives from a root meaning 'to remember,' but as a mental factor it signifies the presence of

mind, attentiveness to the present, rather than the faculty of memory regarding the past. It has the characteristic of not wobbling, not floating away from the object. Its function is the absence of confusion or nonforgetfulness. It is manifested as guardianship, or as the state of confronting an objective field. Its proximate cause is strong perception (*thirasanna*) or the four foundations of mindfulness."

Mindfulness practice, inherited from the Buddhist tradition, is increasingly being employed in Western psychology to alleviate a variety of mental and physical conditions. Scientific research into mindfulness, generally falls under the umbrella of positive psychology. Research has been ongoing over the last twenty or thirty years, with a surge of interest over the last decade in particular.

In 2011, the National Institutes of Health's (NIH) National Center for Complementary and Alternative Medicine (NCCAM) released the findings of a study in which magnetic resonance images of the brains of 16 participants, two weeks before and after mindfulness meditation practitioners joined the meditation program, were taken by researchers from Massachusetts General Hospital, Bender Institute of Neuroimaging in Germany, and the University of Massachusetts Medical School. It concluded that "these findings may represent an underlying brain mechanism associated with mindfulness-based improvements in mental health" (National Center, 2011).

The high likelihood of recurrence in depression is linked to a progressive increase in emotional reactivity to stress (stress sensitization). Mindfulness-based therapies teach mindfulness skills, designed to decrease emotional reactivity in the face of negative affect-producing stressors. Given that emotional reactivity to stress is an important psychopathological process underlying the chronic and recurrent nature of depression, mindfulness skills are important in adaptive emotion regulation when coping with stress (Britton, Shahar, Szepsenwol, & Jacobs, 2012).

In this model, self-regulated attention (an important component of consciousness) involves conscious awareness of one's current thoughts, feelings, and surroundings. Consciousness is extremely elusive from the empirical point of view. Scientists of consciousness usually proceed as if such a definition were already available. In clinical hypnosis, mindfulness, and meditative states, we assume a priori that consciousness is an object and exists in an observer-independent way.

A primary point of contention among the major theories of consciousness is whether attention is generally necessary for consciousness. The global workspace theory (Deahene et al., 2006) holds that an inability to accurately report supraliminal stimuli that are unattended indicates that they are processed unconsciously (inattentional blindness).

The neurogenetics of consciousness has three main components:

1. The neurophysiological neurogenesis, brain morphogenesis, and neuron maturation, which are all under the guidance of genes
2. The neuron-based continuum of consciousness that involves neurological and epigenetic factors, microtubules and neuroplasticity
3. The end of life processes that involves neurodegeneration

This suggests that it is important to go beyond the mask of brain anatomy to explore the fine spatiotemporal patterns and the underlying mechanisms of consciousness. The human brain consists of about one billion neurons, and each neuron has synapses on the order of 1000. Thus, the capability of the human brain is 1016 operations per second. We know that each neuron in the human brain consists of large number of microtubules. Penrose and Hameroff (2007) proposed that consciousness involves sequences of quantum computation in microtubules inside brain neurons.

Recent studies (Demertzi et al., 2009) show that awareness is an emergent property of the collective behavior of frontoparietal top-down connectivity. With this network, external (sensory) awareness depends on lateral prefrontal parietal cortices, and internal (self) awareness correlates with precuneal mesiofrontal midline activity. Both functional magnetic resonance imaging (MRI) and electrophysiology suggest that attention and consciousness share neural correlates. The fields of pain and palliative care have undergone a great revolution, and this volume reflects these exciting advances.

We are so accustomed to viewing pain as a sensory phenomenon that we have long ignored the fact that injury does more than produce pain; it also disrupts the brain's homeostatic regulation system, thereby producing "stress" and initiating complex programs to reinstate homeostasis. Stress can be defined as an activation of the limbic system of the central nervous system (CNS) that then activates neurohumoral mechanisms of arousal. Stress produced by painful experiences initiates a cascade of neurophysiological, humoral, and phenomenological events that challenge our understanding but also provide valuable clues in dealing with chronic pain (Melzack, 1998, 1999).

I wrote this textbook as a contribution to pain and suffering therapy in palliative care. Advances in pain and suffering therapy have tremendously influenced the development of new nonpharmacological and noninvasive pain management. Psychological therapies that were generally used when drugs or anesthesiology or neurosurgery failed are now integrated into mainstream pain management strategies.

The stress associated with advancing and incurable illness inevitably causes distress for patients, families, and caregivers. A palliative approach to

care aims to improve the quality of life for patients with a life-limiting illness by reducing suffering through early identification; assessment; and optimal management of pain and physical, cultural, psychological, social, and spiritual needs.

This book is quite different from others in its unique focus on the assessment of pain and suffering therapy through clinical hypnosis and mindfulness, rather than through conventional pharmacological, anesthesiological, and invasive techniques that have previously been dealt with in many other texts. The book explores the fields of clinical hypnosis and mindfulness as applied to the therapy of suffering and various type of acute and chronic pain and in dying patients. We were conscious of how much there is to learn in these areas, we believe that the dissemination of this rapidly growing body of knowledge will stimulate further research and exploration into the use of specific consciousness states for healing and wellness work.

This book is organized in order to show all scientific neuropsychological theories currently in use regarding various types of pain and suffering. Recent advances in the understanding of fundamental neurobiological mechanisms of nociception have provided insights into the evaluation and treatment of clinical pain (Melzack, 2002). Acute pain serves the purpose of alerting the organism to the presence of harmful stimuli in the internal or external environment. Acute pain may be repetitive in circumstances in which recurrent and/or progressive tissue injury is experienced.

The chronic "pain state" term is usually used in the context of patients who report pain on a long-term basis with no apparent tissue injury component or at least no apparent evidence of persistent nociceptor activation. The psychological counterparts to the chronic pain state include depression, anxiety, and other affective states and are key to understanding the disability associated with this condition (Cleeland & Syrjala, 1992). The different aspects of pathophysiological pain (neurophysiology and psychology), are described followed by a classification of anatomiconeurophysiological and neuropsychological pain.

Scientific literature distinguishes the philosophy of neuroscience and neurophilosophy. The former concerns foundational issues within the neurosciences. The latter concerns application of neuroscientific concepts, to traditional philosophical questions. Exploring various neurological concepts of representation employed in neuroscientific theories is an example of the former.

Examining implications of neurological syndromes for the concept of a unified self and in different states of consciousness, as in clinical hypnosis and mindfulness, is an example of the latter. I will discuss examples of both in the therapy of pain and suffering and will describe hypnosis techniques useful for the management of physical pain and mental suffering.

Therefore, I have chosen to describe many different techniques of clinical hypnosis and mindfulness. This book has been carefully studied, edited, and strongly desired by the author, who has a vast experience in the specific field of physical, mental, and spiritual suffering therapy in subjects afflicted by various types of pain, acute and chronic; disability; and cancer illness in order to relieve, within limits their anxiety and worry regarding a better quality of life.

If we look at the Contents, we can see that the arguments are dealt with in a scientific way but also from a psychological and spiritual point of view. The book highlights the importance the author gives to the study of clinical hypnosis and interior awareness, consolidating the studies carried out by psychologists at first and then by scientists through neurosciences. The World Health Organization (WHO) defines palliative care as "The active total care of patients whose disease is not responsive to curative treatment." One of the primary issues of palliative care for patients with advanced cancer is symptom control and quality-of-life issues.

This book presents a hypnotic model for improving the patient's physical and psychological well-being. There exists a need for a broad and inclusive model of mind-body interventions for pain therapy and palliative care. This is supported by the observation that symptoms related to psychological distress and existential concerns are even more prevalent than are pain and other physical symptoms among those with life-limiting conditions.

The hypnotic trance is a consciousness state of heightened awareness and focused concentration that can be used to manipulate the perception of pain and has been effective in the treatment of cancer-related pain. Our ordinary state of consciousness is not something natural or given but is a highly complex construction, a specialized tool for coping with our environment (Tart, 1972).

The last change comes from the new techniques of brain imaging, for which we must know the traditional separation of sensory and motor mechanisms of consciousness. The chapter titles of this book show how the author has incorporated this fundamentally new thinking about the origins of pain and suffering and the direction of new therapies. The conscious mind is one of the most unresolved problems of neuroscience. What are the conscious sensations that accompany neural activities of the brain? What is the bridge between pain perception and the experience of anxiety and suffering? Moreover, how can we cure suffering and pain in all their aspects, not only physical but also mental? How does a neurochemical phenomenon like pain, which starts from a biological state, transform into a psychological sensation?

Even if our neurophysiological knowledge should one day enable us to identify the exact neurochemical correlation of a psychic phenomenon, we

must not forget that neurochemical knowledge is not sufficient to explain all the subjective experiences in people. The conscious mental properties interact in causal and lawlike ways with other fundamental properties such as those of physics; however, their existence is neither ontologically dependent upon nor derivative from any other properties (Chalmers, 1996).

A major turning point in philosophers' interest in neuroscience came with the publication of Patricia Churchland's *Neurophilosophy* (1986). The Churchlands (Pat and husband Paul) were already notorious for advocating eliminative materialism. In her book, Churchland distilled eliminativist arguments of the past decade, unified the pieces of the philosophy of science underlying them, and sandwiched the philosophy between a five-chapter introduction to neuroscience and a seventy-page chapter on three then-current theories of brain function (1986). She was unapologetic about her intent. She was introducing philosophy of science to neuroscientists and neuroscience to philosophers (Bickle, 2003).

Science still does not know the mechanisms that produced awareness experiences, however, and does not have a clear definition of them. Consciousness then is more than the sum of its constituent neurophysiological events and substrates. The physician and mathematician John Taylor recently observed "the study of consciousness is like a black hole for those that study it. Once the scientific study is done they lose sight of their normal scientific activity and give an explanation of the phenomena that does not correspond to a scientific explanation" (Taylor, 2000).

In cancer patients and in palliative care, pain is neurophysiological, psychological, social, and spiritual. As David Chalmers wrote, "even if we explained all the physical events inside and around the brain and how all the neural functions operate something would be missing: consciousness" (1996). The question then naturally arises: Is it possible to incorporate both science and mysticism into a single, coherent worldview? Quantum mechanics shows that the materialistic common sense notion of reality is an illusion. The appearance of an objective world distinguishable from a subjective self is but the imaginary form in which consciousness perfectly realizes itself (McFarlane, 1995). How can one approach consciousness in a scientific manner? There are many forms of consciousness, such as those associated with seeing, thinking, emotions, pain, suffering and so on.

Clinical hypnosis can help the patients to improve their self-consciousness and self-awareness. The techniques of relaxation, hypnosis, and mindfulness in meditative states are open gates on the self in pain and suffering therapy. Psychological interventions are an important part of a multimodal approach to pain and suffering management. Such interventions frequently are used in conjunction with appropriate analgesics for the management of pain.

One goal is to help the patients gain a sense of control over pain and suffering. Changing how they think about pain, we can change their sensitivity to it and their feelings and reactions toward it. In *Analysis Terminable and Interminable* (1937) Freud wrote, "Only the simultaneous working together and against each other of both primordial drives, of Eros and death drive, can explain the colourfulness of life, never the one or the other all by itself." Erickson, like Freud, suffered all his life. His basic attitude toward his patients also reflected this basic dialectic of the life and death drive: "I think that you should take a patient as he is. He is only going to live today, tomorrow, next week, next month, next year. His living conditions are those of today" (Erickson, Rossi, & Rossi, 1976).

There is therefore a permanent task for the beginner and for the experienced practitioner as well: through symbolization, through clinical and experimental researches and theorizing, we have to convert the mirage of hypnosis into a disciplined analysis of our condition as human subjects made of body, mind, and spirit. Several techniques can be used to achieve a mental and physical state of relaxation. Muscular tension, and mental distress exacerbate pain (Benson, 1975; Brugnoli, Brugnoli, & Norsa, 2006; Cleeland, 1987; Loscalzo & Jacobsen, 1990).

Hypnosis can be a useful adjunct in the management of pain and clinical trials (Erickson, 1959; Jensen & Patterson, 2005; Levitan, 1992; Spiegel, 1985). The hypnotic trance is a essentially a state of heightened and focused concentration, and thus it can be used to manipulate the perception of pain. The use of hypnosis involves control over the focus of attention and can be used to make the patient less aware of the noxious stimuli (Bates, Broome, Lillis, & McGahe, 1992)

The use of clinical hypnosis and mindfulness in pain therapy and palliative care, makes us give to the patients empathy and listening skills; empathic listening sometimes leads to good therapy, relationships, and emotional intimacy. Their use may also lead to a conversation partner feeling like she or he is receiving a hug, a "psychological hug." The consciousness approach through clinical hypnosis and meditative states can be used not only in a verbal channel, but also in patients with cognitive disorders through feelings and perceiving sensations. The realm of emotional responses constitutes the personal sphere wherein one interacts with the environment, past, thoughts, and one's and others immediate and ultimate values.

Components of emotional events include liminal-subliminal perception of real, or imaging of imaginary, objects, representations of those objects, reflexive motor responses, and a range of unattended higher and higher-order emotional experiences. The problem faced by both sciences and psychology is dualism: The apparent duality between subjective and objective or con-

sciousness and matter. The solution is in clinical hypnosis and mindfulness: It is not to side either with brain but somehow–whether through neuroscience, psychology, philosophy, or spiritual practice–to attain nonduality.

Consciousness study has been the focus of an extensive practice in spiritual traditions since ancient times. Many spiritual meditations have provided detailed revelations of different states of consciousness. It is enlightening to study clinical hypnosis, mindfulness and the modified states of consciousness in different traditions, to achieve the primary objective of self-realization and higher consciousness. Generally, we know various "states of consciousness," in particular, wakefulness; dreams; and sleep, which the physiologists divide into "slow sleep" and "paradoxical sleep." Methods of relaxation allow us to describe a "modified state," a particular state of consciousness to which we can give a special value. This state comprises peace, serenity, "absorption," even "presence," and ineffability.

In this book, I present a new system approach to study the neurophysiological states of consciousness to improve the use of clinical hypnosis and mindfulness in pain therapy and palliative care. The contents of the book cover:

- What consciousness is
- Neurophysiology and neuropsychology of pain
- The modified states of consciousness in pain therapy and palliative care
- A new system approach and classification of clinical hypnosis and mindfulness in consciousness states
- The hypnosis techniques, the meditative states, and mindfulness techniques to relieve pain in palliative care
- Relaxation and hypnosis in pediatric patients: techniques for pain and suffering relief
- Music therapy to achieve deep hypnosis and mindfulness
- Metaphor's techniques in pain therapy and palliative care
- Modified states of consciousness and quantum physics: the mind beyond matter

Our ordinary state of consciousness is not something natural or given but a highly complex construction, a specialized tool for coping with our environment and the people in it. In this book, I propose a new approach, using neurophysiologic and neuropsychological explanations that help to formulate empirically testable hypotheses about the nature of consciousness states. Because we are creatures with a certain kind of body and nervous system, a large number of human potentials are, in principle, available to use, but each

of us is born into a particular culture that selects and develops a small number of these potentials, rejects others, and is ignorant of many.

The small number of experiential abilities selected by our culture, plus some unplanned factors, constitutes the structural elements from which our ordinary state of consciousness is constructed. After all, we are the victims of our culture's particular selection. The power and the possibility of tapping and developing latent potentials that lie outside the cultural norm by entering a modified state of consciousness, by temporarily restructuring consciousness, are the basis of the great interest in such states (Tart, 1990). As we look at consciousness closely, we see that it can be analyzed into many parts: neurophysiology of the brain, neuropsychology of the mind, spirituality, and awareness. These parts function together in a pattern, however: they form a system. Although the components of consciousness can be studied in isolation, they exist as parts of a complex system, consciousness, and can be fully understood only when we see this function in the overall system.

In this book, I carefully examine the role and use of specific states of consciousness, clinical hypnosis techniques, and meditative states for the best management of pain and relief of suffering in adults and children. This book is intended for all the professionals working every day with pain and suffering. Every day, because the mind reflects habitual thoughts, it is therefore our responsibility to influence our brain with positive emotions, thoughts, and energy as the dominating factors in our mind and in our life.

After experiencing many levels of consciousness and the higher consciousness, we become able to live in its energy continuously. Then, with further practice and development, we become permanently awakened and live in uninterrupted higher consciousness. We can direct our inner strength to move and express itself in our own life and the lives of our loved ones.

REFERENCES

Benson, H. (1975). *The Relaxation Response.* New York: William Morrow.

Bickle, J. (2003). *Philosophy and Neuroscience: A Ruthlessly Reductive Account.* Norwell, MA: Kluwer Academic Press.

Britton, W. B., Shahar, B., Szepsenwol, O., & Jacobs, W. J. (2012). Mindfulness-based cognitive therapy improves emotional reactivity to social stress: Results from a randomized controlled trial. *Behavioral Therapy, 43*(2), 365–380.

Broome, M., Lillis, P., McGahe, T., & Bates, T. (1992). The use of distraction and imagery with children during painful procedures. *Oncology Nursing Forum 19,* 499–502.

Brugnoli, M. P., Brugnoli, A., & Norsa, A. (2009). *Nonpharmacological and noninvasive management in pain.* Verona, Italy: La Grafica Editrice.

Chalmers, D. (1996). *The conscious mind.* Oxford, UK: Oxford University Press.
Churchland, P. (1986). *Neurophilosophy.* Cambridge, MA: MIT Press.
Cleeland, C.S. (1987). Nonpharmacologic management of cancer pain. *Journal of Pain and Symptom Control, 2,* 523–528.
Cleeland, C. S., & Syrjala, K. L. (1992). How to assess cancer pain. In D .C. Turk & R. Melzack (Eds.), *Handbook of pain assessment* (pp. 360–387). New York: Guilford Press.
Erickson, M. H. (1959). Hypnosis in painful terminal illness. *American Journal of Clinical Hypnosis, 1,* 1117–1121.
Erickson, M.H., Rossi, E.L., & Rossi, S.I. (1976). Hypnotic Realities: The Induction of Clinical Hypnosis and Forms of Indirect Suggestion. New York: Irvingtone.
Farthing, G. W. (1992). *The psychology of consciousness.* Englewood Cliffs, NJ: Prentice-Hall.
Freud, S. (1937). *Analysis terminable and interminable. The standard edition of the complete psychological works of Sigmund Freud* (Vol. 23 [1937–1939], pp. 209–254). London: Hogart Press, 1964.
Gibran, K. (1992). *Sabbia e Spuma e Il Vagabondo* [*Sand and foam and the wanderer*]. Rome, Italy: Newton Compton Editori.
Gibran, K. (1993). *Il Profeta* [*The prophet*]. Verona, Italy: Editrice Demetra.
Jensen, M. P., & Patterson, D. R. (2005, April). Control conditions in hypnotic analgesia clinical trials: challenges and recommendations. *International Journal of Clinical and Experimental Hypnosis, 53*(2), 170–197.
Levitan, A. (1992). The use of hypnosis with cancer patients. *Psychiatry and Medicine, 10,* 119–131.
Loscalzo, M., & Jacobsen, P. B. (1990). Practical behavioural approaches to the effective management of pain and distress. *Journal of Psychosocial Oncology, 8,* 139–169.
McFarlane, T. J. (1995). Quantum mechanics and reality [Online]. Available at www.integralscience.org
Melzack, R. (1998). Pain and stress: Clues toward understanding chronic pain. In M. Sabourin, F. Craik & M. Robert (Eds.), *Advances in psychological science* (Vol. 2, Biological and Cognitive Aspects, pp. 63–85). London: Psychology Press.
Melzack, R. (1999). Pain and stress: A new perspective. In R.J. Gatchel & D.C. Turk (Eds.), *Psychosocial factors in pain* (pp. 89–106). New York: Guilford Press.
Melzack, R. (2002). *Evolution of Pain Theories.* Program and Abstracts of the 21st Annual Scientific Meeting of the American Pain Society, March 14–17, Baltimore, Maryland. Abstract 102.
National Center for Complementary and Alternative Medicine (NCCAM). (2011, January 30). Research Spotlight: Mindfulness meditation is associated with structural changes in the brain [Online]. Available at http://nccam.nih.gov /research/results/spotlight/012311.htm
Spiegel, D. (1985). The use of hypnosis in controlled cancer pain. *CA: A Cancer Journal for Clinicians, 4,* 221–231.
Tart, C. T. (1972). States of consciousness and state-specific sciences. *Science, 176,* 1203–1210.

Taylor, J. (2000, February). The enchanting subject of consciousness (or is it a black hole?). *PSYCHE, 6*(2).

SUGGESTED READINGS

Armstrong, D. M. (1978). Naturalism, Materialism and First Philosophy. *Philosophia, 8,* 261–276.

Boccio, F. J. (2004). *Mindfulness yoga: The awakened union of breath, body and mind.* Somerville, MA: Wisdom Publishers.

Bonica, J. J. (Ed.). (1990). *The management of pain* (2nd ed.). Philadelphia: Lea & Febiger.

Brahm, A. (2005). *Mindfulness, bliss, and beyond: A meditator's handbook.* Somerville, MA: Wisdom Publications.

Brugnoli, A. (2005). *Stati di coscienza modificati neurofisiologici.* Verona, Italy: La Grafica Editrice.

Brugnoli, M. P. (2009). *Clinical hypnosis, spirituality and palliation: The way of inner peace.* Verona, Italy: Del Miglio Editore.

Carruthers, P. (2000). *Phenomenal consciousness.* Cambridge: Cambridge University Press.

Chalmers, D. J. (1995). Facing up to the problem of consciousness. *Journal of Consciousness Studies, 2*(3), 200–219.

Chochinov, H. M., Krisjanson, L. J., Hack, T. F., Hassard, T., McClement, S., & Harlos, M. (2006, June). Dignity in the terminally ill: Revisited. *Journal of Palliative Medicine, 9*(3), 666–672.

Crick, F., & Koch, C. (1995a). Are we aware of neural activity in primary visual cortex? *Nature, 375,* 121–123

Crick, F., & Koch, C. (1995b). Cortical areas in visual awareness [Reply]. *Nature, 377,* 294–295.

Dalai Lama. (1999). *The Dalai Lama's book of wisdom.* London: Thorsons.

Damasio, A. (1994). *Descartes' error: Emotions, reason, and the human brain.* New York: Avon Books.

Graffam, S., & Johnson, A. (1987). A comparison of two relaxation strategies for the relief of pain and its distress. *Journal of Pain and Symptom Management, 2*(4), 229–231.

Guenther, H. V., & Kawamura, L. S. (1975). *Mind in Buddhist psychology: The necklace of clear understanding by Ye-shes rGyal-mtshan* [Tibetan Translation Series] [Kindle edition]. Berkeley, CA: Dharma Publishing.

Gunaratana, B. H. (2002). *Mindfulness in plain English.* Somerville, MA: Wisdom Publications.

Handel, D. L. (2001, February). Complementary therapies for cancer patients: What works, what doesn't, and how to know the difference. *Texas Medicine, 97*(2), 68–73.

Hendler, C. S., & Redd, W. H. (1986). Fear of hypnosis: The role of labeling in patients' acceptance of behavioral interventions. *Behavior Therapy, 17*(1), 2–13.

His Divine Grace A. C. Bhaktivedanta Swami Prabhupada. (1972). *Bhagavad-Gita.* Krishna Store.

Hoopes, A. (2007). *Zen yoga: A path to enlightenment through breathing, movement and meditation.* Tokyo: Kodansha International.

Huai-chin, N. (1993). *Working toward enlightenment: The cultivation of practice.* York Beach, ME: Samuel Weiser.

Kallio, S., & Revonsuo, A. (2003). Hypnotic phenomena and altered states of consciousness: A multilevel framework of description and explanation. *Contemporary Hypnosis, 20*(3), 111–164.

Kihlstrom, J. F. (1997). Convergence in understanding hypnosis? Perhaps, but perhaps not quite so fast. *International Journal of Clinical and Experimental Hypnosis, 45,* 324–332.

Kolcaba, K. Y., & Fisher, E. M. (1996, February). A holistic perspective on comfort care as an advance directive. *Critical Care Nursing Quarterly, 18*(4), 66–76.

Levine, J. (1983). Materialism and qualia: The explanatory gap. *Pacific Philosophical Quarterly, 64,* 354–361.

Manzotti, R., & Gozzano, S. (2004). Verso una scienza della coscienza. *Networks 3–4:* i-iii. Available at http://www.swif.uniba.it/lei/ai/networks/

Masters, E. L. (1988). *Antologia di Spoon River* [*Spoon River anthology*]. Rome, Italy: Newton Compton Editori.

Mathieu, V. (1969). *Storia della filosofia e del pensiero scientifico.* Brescia, Italy: Editrice La Scuola.

McCaffery, M., & Beebe, A. (1989). *Pain: Clinical manual for nursing practice.* St. Louis: Mosby.

McCaul, K. D., & Malott, J. M. (1984). Distraction and coping with pain. *Psychology Bulletin, 95*(3), 516–533.

McGrath, P. A. (Ed.). (1990). *Pain in children: Nature, assessment, and treatment.* New York: The Guilford Press.

Melzack, R. (2001). Pain and the neuromatrix in the brain. *Journal of Dental Education, 65,* 1378–1382.

Melzack, R., & Wall, P. D. (1965). Pain mechanisms: A new theory. *Science, 150,* 971–979.

Mosca, A. (2000). A review essay on Antonio Damasio's The Feeling of What Happens: Body and Emotion in the Making of Consciousness. *PSYCHE, 6*(10).

Munro, S., & Mount, B. (1978). Music therapy in palliative care. *Canadian Medical Association Journal, 119*(9), 1029–1034.

Nagel, T. (1974). What is it like to be a bat? *Philosophical Review, 4,* 435–450.

Nhat Hanh, T. (1996). *The miracle of mindfulness: A manual on meditation.* Boston: Beacon Press.

Reeves, J. L., Redd, W. H., Storm, F. K., & Minagawa, R. Y. (1983). Hypnosis in the control of pain during hyperthermia treatment of cancer. In J.J. Bonica, U. Lindblom & A. Iggo (Eds.), *Proceedings of the Third World Congress on Pain,* Edin-

burgh. (Vol. 5, Advances in Pain Research and Therapy, pp. 857–861). New York: Raven Press.

Rinpoche, S. (2002). *The Tibetan book of living and dying* (2nd ed.). San Francisco: HarperCollins.

Russel, R. (1961). *Brain, memory, learning.* Oxford, UK: Oxford University Press.

Searle, J. (1992). *The rediscovery of the mind.* Cambridge, MA: MIT Press.

Searle, J. R. (1990). Consciousness, explanatory inversion and cognitive science. *Behavioral and Brain Sciences, 13,* 585–642.

Shapiro, D. (1977). A biofeedback strategy in the study of consciousness. In N.E. Zinberg (Ed.), *Alternate states of consciousness* (pp. 145–37). New York: The Free Press.

Siegel, R. D. (2010). *The mindfulness solution: Everyday practices for everyday problems.* The Guilford Press.

Syrjala, K. L. (1990). Relaxation techniques. In J. J. Bonica (Ed.), *The management of pain* (2nd ed., pp. 1742–1750). Philadelphia: Lea & Febiger.

Travis, C. (2004). The silence of the senses. *Mind, 113,* 57–94.

Van Gulick, R. (2004). Higher-order global states (HOGS): An alternative higher-order model of consciousness. In R. J. Gennaro (Ed.), *Higher-order theories of consciousness: An anthology* (pp. 67–92). Amsterdam: John Benjamins B.V.

Weiss, A. (2004). *Beginning mindfulness: Learning the way of awareness.* Novato, CA: New World Library.

ACKNOWLEDGMENTS

I would like to thank my family for the support, strength, and encouragement they gave me throughout my life. Particularly, I appreciate the love of my husband Andrea, my two sons Luca and Alessandro, my parents Angelico and Elda, my brother Marco, and my sister Angelica.

I would like to express my immense gratitude to my master and father Dr. Angelico Brugnoli, M.D., for improving my knowledge and studies in clinical hypnosis and stages of consciousness. I appreciate his vast knowledge and skills in many areas: in 1965, he and Dr. Gualtiero Guantieri, M.D., founded in Verona, Italy, the Italian Institute for the Study of Psychotherapy and Clinical Hypnosis "H. Bernheim."

I especially thank my colleagues and friends: Dr. Daniel Handel (past president of American Society of Clinical Hypnosis [ASCH]), and professors Sylvain Néron, Alladin Assen, Dabney Ewin, Donald Moss, Camillo Loriedo, Giovanni Gocci; Dr. Michael Yapko, Dr. Alessandro Norsa, Dr. Consuelo Casula (president elect of European Society of Hypnosis [ESH]), Professors Éva Bányai and Katalin Varga, Dr. Nicole Ruysschaert (president of ESH), and Dr. Julie Linden (past president of ASCH and president of International Society of Hypnosis [ISH]) for sharing with me workshops and studies in the United States, in Europe, and in Italy about clinical hypnosis.

I thank my friends Dr. Mike Flynn, psychologist and Christian priest, and Giampaolo Mortaro, theologist, anthropologist and Catholic Comboni priest, for improving my studies about the Christian religion.

The information and Eastern religious studies contained in this book are obtained by following several practice periods and studies with the following teachers: Pandit Kanta Prashad Mishra, Brahmin and Hindu monk, and Pandit Marco Shivchandra Parolini, Brahmin and Hindu monk, from Varanasi Benares, India. In conclusion, I recognize that the Eastern religious knowledge would not have been possible without their assistance.

I greatly thank my colleagues and friends of Agra University in India, Dr. Anirudh Kumar Satsangi, director of the Dayalbagh Educational Institute,

and Dr. Siddharth Agarwal, M.D., for willingly sharing our researches about meditative stages and clinical hypnosis.

I am very grateful to all the Professors of Nanjing University of Traditional Chinese Medicine (NJUCM); I attended NJUCM in China in 2007 to improve my knowledge in traditional Chinese medicine (TCM) and my spiritual life in my practice of Chinese medicine, receiving TAO in Italy, 2013.

Very special thanks go out to my friends and English teachers Gary Judge, Vlatka Kalecak, Ricci Gementiza, Letizia Fenzi Stephenson, and Dr. Stefania Dodoni for helping me in translations; it was a pleasure to collaborate with you.

Furthermore, I would like to extend my gratitude to Professor Harvey Max Chochinov. He is internationally recognized as a leader in palliative care research; he is professor of psychiatry at the University of Manitoba and Director of the Manitoba Palliative Care Research Unit, Canada. Thank you, Harvey, for your enthusiasm in sharing your vast knowledge and, then, our conversations about dignity therapy in palliative care.

It is a great pleasure to thank my colleagues and friends: Professor Enrico Polati, director of the Unit Anesthesiology, Critical Care and Pain Therapy at Verona University, and Dr. Vittorio Schweiger, chief of the pain therapy team, for having offered me the opportunity of working with the university team of pain therapy in Verona and developing exciting research projects.

I would also like to thank my publisher, Michael Thomas, and all those who helped this book to become a reality. There are no words that can express the gratitude I feel toward these special people.

Finally, thanks to all my angels who have left this world but are close to me every day (especially my brother Michele) and the One, who perfectly manifests creative excellence and love. Thank you God, for giving me another day, another chance to give and experience love and awareness. Thank you for the energy that feeds my soul. Stay connected to me today and always. God, make me a channel of your energy and help me understand suffering people. Keep us all close to you.

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CLINICAL HYPNOSIS IN PAIN THERAPY AND PALLIATIVE CARE

Chapter I

CONSCIOUSNESS IN CLINICAL HYPNOSIS AND MINDFULNESS

1. PHILOSOPHY, NEUROPHYSIOLOGY AND NEUROPSYCHOLOGY OF CONSCIOUSNESS

A. What is Consciousness?

Consciousness poses the most enigmatic problems in the science of the mind. Consciousness is a term concerning the ability to perceive; to feel; or to be conscious of events, objects, or patterns, which does not necessarily imply understanding. "I see nothing but Becoming. It is the fault of your limited outlook and not the fault of the essence of things if you believe that you see firm land anywhere in the ocean of Becoming and Passing" (Heraclitus, 500 B.C.).

I find the unification of ancient metaphysics and philosophy with modern physics and cosmology very fascinating and inspiring. Certainly, it is now clear that matter interacts with all other matter in the universe. The wave structure of matter provides a very simple sensible explanation of why this is so. "There is nothing that we know more intimately than conscious experience, but there is nothing that is harder to explain. All sorts of mental phenomena have yielded to the scientific investigation in recent years, but consciousness has stubbornly resisted" (Chalmers, 1995).

Although in general speech, we tend to use the terms awareness and consciousness to represent basically the same thing, I use them here with somewhat different meanings.

In medicine, consciousness is assessed by observing a patient's arousal and responsiveness and can be seen as a continuum of states ranging from full alertness and comprehension; through disorientation, delirium, loss of

meaningful communication; and finally to loss of movement in response to painful stimuli.

In recent years, consciousness has become a significant topic of research in psychology and neuroscience. The primary focus is on understanding what it means biologically and psychologically for information to be present in consciousness, that is, on determining the neural and psychological correlates of consciousness. Consciousness is the quality or state of being aware of external neurophysiological stimuli or object or something within oneself.

The philosophy of the mind has given rise to many stances regarding consciousness. In this book, I analyze how we can use the modified states of consciousness in clinical hypnosis, meditative states, and mindfulness to relief pain and suffering.

Awareness is much more than consciousness; it is the state or ability to perceive; to feel; or to be conscious of events, objects, or sensory patterns. In this higher level of consciousness, sense data can be confirmed by an observer without necessarily implying understanding. More broadly, it is the state or quality of being aware of something.

Through the different modified states of consciousness, we can reach higher consciousness and awareness: it refers to the awareness or knowledge of an ultimate reality that traditional theistic religions have named God and Gautama Buddha referred to as the unconditioned element and knowledge.

B. The Philosophy of Consciousness: The "Hard" and the "Easy" Problems

According to the philosopher David Chalmers (1995), there is not just one problem of consciousness. Consciousness is an ambiguous term, referring to many different phenomena. Each of these phenomena needs to be explained, but some are easier to explain than others. Chalmers divides the associated problems of consciousness into "hard" and "easy" problems. The easy problems of consciousness are those that seem directly susceptible to the standard methods of cognitive science, whereby a phenomenon is explained in terms of calculative or neural mechanisms. The easy problems of consciousness include those of explaining the following phenomena:

- the ability to be discriminate, categorize, and react to environmental stimuli
- the integration of knowledge by a neurocognitive system
- the different mental states
- the capacity of a system to access its own internal states
- the focus of attention

- the control of behavior
- the difference between wakefulness, hypnosis and sleep

The hard problems are those that seem to resist those methods: the really hard problem of consciousness is the problem of experience and knowledge.

There is no real matter about whether these phenomena can be explained scientifically. All of them are straightforwardly vulnerable to an explanation in terms of computational or neural mechanisms. Consciousness generally refers to awareness in a much more complex way; consciousness is awareness as modulated by the structure of the mind. Mind refers to the totality of both inferable and potentially experienced phenomena, of which awareness and consciousness are components.

I agree with Charles Tart (1972) that awareness refers to the basic knowledge that something is happening, to perceiving or feeling or cognizing in its simplest form. What are the conscious sensations that accompany neural activities of the brain? Can we share the problem of consciousness only biologically or should we develop other methods?

This book is organized in order to show the scientific neurophysiological theories currently in use regarding the many modalities of consciousness states. Consequently, I have chosen to describe many different states of concentration, relaxation, hypnosis, mindfulness, and meditative states to help patients in pain and suffering relief. I will purposefully not examine the pathological modified states of consciousness, such as coma states or states of modified consciousness through drugs or medicines.

Popular ideas about consciousness suggest the phenomenon describes a condition of being aware of one's awareness, or self-awareness. Efforts to explain consciousness in neurological terms have focused on describing networks in the brain that increase awareness of the qualia, developed by other networks.

C. Qualia

"Qualia" (singular "quale," from the Latin for "sort of" or "what kind") is a term used in philosophy, to describe the subjective quality of conscious experience. Examples of qualia are the pain of a headache, the taste of wine, or the redness of an evening sky. Daniel Dennett (1991) writes that qualia is "an unfamiliar term for something that could not be more familiar to each of us: the ways things seem to us."

Balduzzi and Tononi (2009) studied a new theory of consciousness explained by qualia at the Department of Psychiatry, University of Wisconsin,