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An Integral Approach to Pain Management

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Overview

This paper will consider neuroplasticity and sensitization to pain patterns as typically supportive of intractable aspects of pain management through the lens of Integral Theory and suggest practical aspects of treatment that show promise in alleviating incorrigible and/or chronic pain that historically have been resistant to medical intervention.

Introduction

A recent article by Charles S. Green, DDS (2009, pp. 676-678) in the *Journal of the American Dental Association* considers neuroplasticity and sensitization in response to clinical findings of severe pain six months after corrective dental procedures to relieve the pain. Using this article as a jumping off point, the issue of persistent or chronic pain that defies medical intervention is explored through the comprehensive lens of Integral Theory (IT). Use of integral terms will be limited to those elements that elucidate the presentation of pain. However a brief overview of some of IT's most prominent features will be reviewed in the interest of clarity.

Integral Theory as a Diagnostic Tool

Developed by Ken Wilber, (2006, p. 2) Integral theory is a meta theory that presents a 'map' of reality that incorporates all the identified systems and models of human growth and experience; historical and current. Why Integral Theory? "An integral approach insures that you are utilizing the full range of resources for any situation, with the greater likelihood of success." IT utilizes five elements: quadrants, levels, lines, states, and types. In our exploration of pain, we will consider the elements pertinent to the purpose of this article and bypass the more extensive and elaborate details of IT for the sake of simplicity and succinctness.

IT takes as its task the inclusive and comprehensive review of the accumulated human knowledge base as it exists in the globalized forum of thought and experience. To that end, Wilber has developed what he calls a "map of the territory". In this case, the 'territory' is individual lived experience, which includes the interior felt experience, the physical/biological behavior/body, collective/cultural meaning making, and systems/environments. This model renders the density of current knowledge and diversified fields into a practical and understandable arrangement of an inclusive reality. This is accomplished by designated field exclusions that allow specific areas of knowledge, for example biology, to be true and valid as borne out by injunction (empiricism), but limited to that particular specific field of expertise.

Quadrants and Perspectives

Quadrants are used to distinguish the simultaneous arising of multiple perspectives in any experience. For every event or experience there is a **first person** perspective (**I**), a **second person** perspective (**we**), and a **third person** perspective (**it**). The fourth quadrant, is the plural of the third person perspective (**its**). This allows the ability to concurrently track an event or experience from multiple perspectives along with its multiple aspects in a cogent, comprehensive, and functional manner.

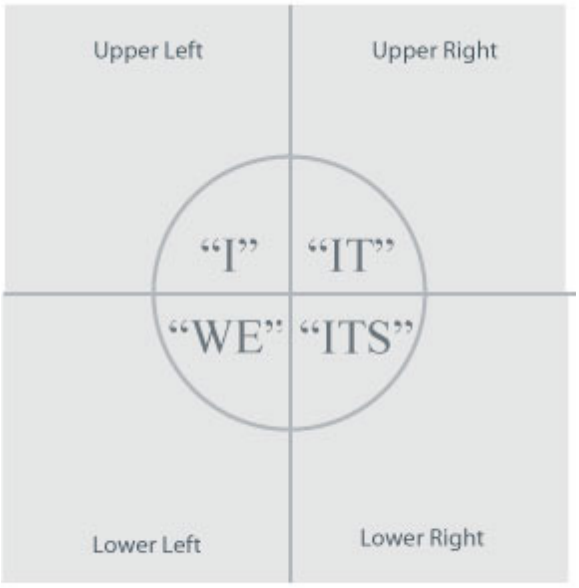

Figure 1

Upper left Quadrant

IT recognizes perspectives by delineating four quadrants of experience (figure 1). In the upper left quadrant **first person** perspectives arise. This is the quadrant of **interior** felt experience. "**I** feel an intense throbbing pain in my mouth." This perspective is not immediately accessible through any means other than subjective first person felt experience.

Psychology has built the frame work of structuralism through the **exterior** observation of this **interior** experience. Talk therapy and personal exchange between patient and therapist allows for a history of emotional/felt patterns to emerge. From this **external** view of the **first person** experience, psychology has developed several developmental schema of human development and gives us a functional base line for universal human development. This structural view of the a patient's interior felt experience through an exterior perspective is also pertinent in medical and dental situation when details regarding pain becomes relevant to diagnosis and treatment.

Lower Left Quadrant

In the lower left quadrant is the arising of collective experience and understanding. It is of little use to have a discussion with a patient regarding the pain in their mouth if there is no agreement on what the word "pain" means. Here also is the personal relationships of patients, and the lineage of beliefs inherited from their familial understanding and experience. How a

culture, family, or society historically deals with pain creates the back drop for the patients expectation regarding painful experience and how to deal with that experience.

The **interior** view of the lower left is the mutual understanding, or '**we**' that occurs between the patient and the dentist. This can offer specific challenges when there are sharp cultural divides whether regarding language, age, nationality, gender, socioeconomic, or education level. Care must be taken to translate appropriately for patient understanding, and likewise, a dentist must understand the nature of pain in order to address it. If mutual understanding does not occur and the **second person** '**we**' fails to be established, the likelihood of a positive outcome for the patient diminishes.

Upper Right Quadrant

The best know and well tread area of the upper right quadrant is specific to the **third person**, '**it**' perspective of science and empiricism. Here we see from the **exterior**, pain behaviors and physical determinates of pain response. In the **interior**, or the inside of the body in this case, there are systems, organs, tissues, cells, molecules, atoms, quanta, and the quantum energy waves that exist prior to Schrödinger's wave function collapse[1]. These energy waves collapse into the particles or quanta that precede matter, as we can see theoretically if we run the systems to energy wave pattern backwards. While this is the authors personal explanation, the validity on which these claims rest are generally established standards in their specific fields[2].

This may seem like an unnecessarily detailed foray into the physical interior of the body, however, it is in the finest of details that we find the connection of the psychological mind and the physicality of the pain response. Pain that has failed to be resolved has a source that is not visibly apparent or there would still be alternatives available for treatment. This article deals with the exhaustion of those treatment alternatives and hence must go further into the milieu of the mind/body matrix in order to establish a treatment path that can withstand the rigor of repetition and validity.

Lower Right Quadrant

The lower right is the **plural third person** perspective. Systems theory finds a home here and can be view both from the **interior**, as system autopoeisis, and from the **exterior** as systems theory with a validity criteria of **functional fit**. If the system does not support the functional pain management of the patient, the system is not working. The system does not fit the function for which it is designed.

Interestingly, the system autopoeisis of the lower right interior *tends* toward functional fit and it is just such an inquiry into systems knowledge and function that allows for the autopoeisis function to self correct and rebalance towards a more functional fit given current knowledge and experience of all parts of the system, which, if expanded globally as in IT, offers a rich recompense of insight into pain in all its expressions.

Pain in All Quadrants

The Merriam Medical Dictionary defines pain as:

> A state of **physical**, **emotional**, or **mental** lack of well-being or physical, emotional, or mental uneasiness that ranges from mild discomfort or dull distress to acute often unbearable agony, may be generalized or localized, and is the consequence of being **injured** or **hurt physically** or **mentally** or of some derangement of or lack of equilibrium in the physical or mental functions (as through disease), and that usually produces a reaction of wanting to avoid, escape, or destroy the causative factor and its effects.

What can we discern from this definition? Pain is neither simple, nor fully understood. In fact, sometime pain occurs that does not have any physical association on which to establish treatment. This is the crux of this article's purpose and where we will jump into the definition. We will use the quadrants to create a comprehensive, albeit hypothetical, picture of pain.

In the **upper left** we find the patients interior subjective felt experience of pain. The patients reports, "The pain in my mouth where we pulled that tooth is still there. It has gotten worse and now I am having trouble sleeping at night, and my work is suffering." Reports of pain from a patient are the only indication in some cases that there is a problem. The tissue reporting pain has no obvious abnormality to indicate a pain response. And yet, the patient reports a felt experience of intense pain.

In the **upper right** we have the healthy tissue juxtaposed against the pain behavior of the patient. The patient also reports no longer attending social function, excessive moodiness with loved ones, melancholy, and difficulty focusing on tasks. We can see the dark circles under the patients eyes from lack of sleep and the face is held in a half grimace throughout their office visit. We can also consider again the increasing complexity of matter, starting with the whole system and working back to the wave function preceding the collapse into matter. As stated we can see the tissue is healthy, but healthy looking tissue is not the end of the physical characteristics of the body. It is simply the end of the obvious and well established modalities

and technologies that allow for sensory validation of an imbalance that may contribute to the patient's felt experience of pain.

To move into the next level of the anatomy of pain, it becomes necessary to look deeper into the complexity of the human body's minute details. Charles Greene, DDS appropriately notes the issues of neuroplasticity and sensitization as players in pain physiology. Regarding neuroplasticity, (p. 677) "According to this concept, every event of thinking, learning and acting can significantly change both the brain's physical structure (anatomy) and its functional organization (physiology)." The positive adaptive benefits of the brain's neuroplasticity are well established. However, this adaptive aspect can also manifest as "expanded pain" or as "chronic pain."

A complicated neurological process, sensitization is simplified by Greene (p. 677) and succinctly restated:

> Every peripheral pain stimulus (for example tooth pain) must go through a junction with a second-order neuron on its way to the higher centers, where it is interpreted and reacted to by excitatory or inhibitory processes. We now know that the excitatory process that "turns nerves on" is based on a series of chemicals that are released at every synapse.... The possibility exists that this [turned on] neuron will become sensitized to further inputs from the periphery.

The problem is that once sensitized, nonpainful stimuli can be interpreted as additional pain in regions originally uninvolved. This process goes beyond the normal pattern of nerve response in that the (p. 677) "sensitized central nervous system fails to return to its normal state, so that primary nociceptive input is no longer required to initiate pain." Sensitization seems to be susceptible to some other influence besides the primary nociceptor input.

I would like to suggest the susceptibility to sensitization is established at the psychological or affective level of the subconscious mind and as a subtle energetic information packet connected to somatic nerve environment, is able to loop a pain response, similar to a bug in a computer program. The vehicle for this influence will be discussed further into the article.

In the **lower left** we see the psychosocial contributions to chronic pain. An influence on the patients reaction to continuing pain is often found in the cultural or familial belief system that surrounds the incident of pain. This belief construct may serve to amplify pain or diminish it dependent on how pain is perceived. Education may institute a reframing of the context of pain, perhaps as a healing indicator or as a healing crisis with purpose, instead of a punishment or burden that must be borne. Here also we find the dentist's understanding of pain. If mutual

understanding fails to be established, likely the patient will find discomfort continuing or worsening having failed to create an understanding of the circumstances in which a course of appropriate action could be developed.

In the **lower right** we see the physical structures in the dental office, the insurance network, the pharmacological resources, the technology available, and the individuals that direct the operational capacity of combined elements of that system of systems. We have the environment the patient lives in, works in, and receives treatment in. Is it a stable, supportive, environment or is it cold and impersonal, with little individual care? Ultimately, the question to ask is whether the current **lower right** system's function, fits the needs of the patients.

Modalities on the Edge

Energy Technology

We have suggested a integral configuration of pain as it arises (Figure 2). While cursory, this IT map of patient pain demonstrates areas of care and consideration in the diagnosis and treatment planning for patients exhibiting severe pain that defies all current intervention methodologies. To further the likelihood of success in pain management beyond mainstream care, alternative energetic technologies will be briefly considered.

Figure 2

'Energy psychology,' or EP is the general categorical classification for the type of therapeutic bioenergetic intervention that deals with specific thought, belief patterns or feelings[3]. Typically administer as a form of meridian tapping, energy psychology uses the energetic capacity of the intention of the practitioner to release and eliminate limiting thought, feeling, and belief patterns that no longer serve the best interest or function of the individual.

Emotional Freedom Techniques (EFT) is a simple and efficient EP modality, introduced by Gary Craig, a Stanford Engineer, in 1995. He developed the technique after working with Roger Callahan, PhD. Callahan developed Thought Field Therapy (TFT) using algorithms of tapping sequences on acupuncture points to alleviate emotional or physical complaints. Craig

reduced the multiple specific algorithms to a single algorithm incorporating the major meridian points and concluded it to be universally applicable for all patterns of dis-ease. The theory behind the success of EFT is that the tapping rebalances the energy of the meridians previously blocked or disrupted by unresolved emotional issues. These issues can range from the intensity of a hyperarousal state related to Post Traumatic Stress Disorder (PTSD), to the emotional issues that act as an anchor to chronic pain, to something as seemingly inconsequential as a mild discomfort with spiders or snakes.

This process is concurrently operative on what Freud referred to as the "unconscious" mind, or the aspects of mind and somatic experience that have been determined 'not self' and forced below the surface of the conscious mind; and the pain or discomfort in the conscious felt experience of mind and/or body that results from presence of these same limiting patterns. Functionally these patterns are connected to the information packets surrounding the wave function defined by Schroedinger, that we previously identified as arising in the upper right quadrant as a deep complexity of the physical body. Toward the empirical support of this suggestion, I offer William Tiller's conclusion in a recent paper, "Towards a Quantitative Model of Both Local and Non-Local Energetic/Information Healing:" He concludes:

> Based on a particular Biconformal base-space (BCBS) reference frame imbedded in several higher dimensional domains, it is possible to develop a schematic model for the whole person wherein both local and non-local energy/information healing may occur. This type of healing treatment operates on the information wave substance residing in the physical vacuum with signal transfer from the healer to the patient occurring via the reciprocal space (R-space) portion of this BCBS for non-local healing. The altered amplitude spectrum of this information wave substance domain restores harmony between the fine physical layer and the coarse physical layer of what we call the physical body and then, visible pathology starts to disappear. The mathematical relationships involved in this BCBS should eventually allow this model to become fully quantitative and predictive. (Tiller, 2004, p.876)

Dr. Tiller, as Professor Emeritus of the Stanford University Physics Department, does more than just provide theoretical musing regarding these quantum structures and functions; he does the math. So while mainstream medicine may be expected to be somewhat reticent in completely

embracing energetic technology, it is only a matter of time before energy technologies become a part of a fully comprehensive medical and dental model, if for no other reason than they work.

Conclusion

Pain is not a simple or direct cause and effect equation for many patients. Only by acknowledging the complexities of pain and the myriad avenues of manifestation is it possible to fully access proper modes of treatment concurrent to Dr. Greene's acknowledgement of the "significant management challenge," of pain patients and that (p. 678) "such patients will require referrals to appropriate medical practitioner for management of these complex conditions." We can see the full benefit of using a comprehensive integral assessment of a patients pain in order to assist in appropriately treating the pain, as Robert G. Large in the article "Psychological Aspects of Pain," in the *Annals of Rheumatic Diseases* (1995, p. 343) states, "There is now strong research support for the use of comprehensive multidisciplinary pain management programmes in the treatment of chronic pain of non-malignant origin."

The clinical problem of severe pain extended beyond the healing of the surgical site, is presented by Charles S. Greene, DDS in the June issue of JADA (2009, p. 676), and as presented is a candidate for energy psychology intervention. When medical interventions have failed to alleviate the suffering of patients it becomes obvious there are deeper, more subtle, possibly affective issues that need to be addressed. Meridian tapping therapies (MTT) are non invasive and painless[4].

This article concludes with the suggestion that the manifestation of intractable or chronic pain is a orchestration at the most fundamental levels of anatomy, that of information processing at the energetic level. While a relative young field, energy psychology in the form of a variety of meridian tapping modalities exercises an eighty percent efficacy rate and is the avenue of last hope for many suffering from pain that lacks a clear causal origin. By mapping the pain model using Integral Theory, we have discovered the hidden aspects that may contribute to difficulty in diagnosing the complex arising of pain in an patient, and the subsequent treatment of that pain.

Author's Note: This article has been extremely brief considering the depth of knowledge and research that is available to support its conclusions. Likewise, Integral theory has been presented in an extremely truncated manner in an effort to afford readability and focus of content. Please consult the Appendix and Bibliography for more resources. Please direct any questions to Lynette K. Conat at lkc@tampabay.rr.com, with the name of the article in the subject line.

Appendix

This article is formulated to related the theoretical approach to the mitigation of intractable and chronic pain in dental patients. The AQAL model of Integral Theory has been used to gently elucidate the complexity of the tetra arising nature of all experience, inclusive of pain manifestation in individuals. A brief overview of energy technology currently available in addition to the research supporting the use and validity of that technology was also offered in the hope to provide additional resources to those Dentists that are interested in providing their patients with truly comprehensive care.

Energy Technology Resources

Feinstein, D. (2008). Energy Psychology in Disaster Relief. *Traumatology,* 14(1), 127-139

Feinstein, D. (2008). Energy Psychology: A Review of the Preliminary Evidence. *Psychotherapy: Theory, Research, Practice, Training. 45*(2), 199-213.

Lipton, B. (2005). *The Biology of Belief: Unleashing the Power of Consciousness, Matter & Miracles.* Santa Rosa, CA: Mountain of Love/Elite Books.

Sheldrake, R. (1988). *The Presence of the Past: Morphic Resonance & the Habits of Nature.* Rochester, VT: Park Street Press

Tiller, W.A., (2004). Towards a quantitative model of both local and non-local energetic/information healing. *The Journal of Alternative and Complementary Medicine*. November 2004, 10(5): 867-877. doi:10.1089/acm.2004.10.867.

www.TillerFoundation.com

Integral Theory Resources

Wilber, K. (2000). *Integral Psychology: Consciousness, Spirit, Psychology. Therapy.* Boston: Shambala.

Wilber, K. (2000). *Sex, Ecology, Spirituality: The Spirit of Evolution.* Boston: Shambala.

Wilber, K. (2001). *A Theory of Everything: An integral vision for business, politics, science and spirituality*. Boston: Shambala.

Wilber, K. (2006). *Integral Spirituality: A Startling New Role for Religion in the Modern and Post Modern World*. Boston: Integral Books.

http://www.kenwilber.com/professional/writings/index.html

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Large, RG, (1996). Psychological aspects of pain. *Annals of the Rheumatic Diseases*, 55; 340-345.

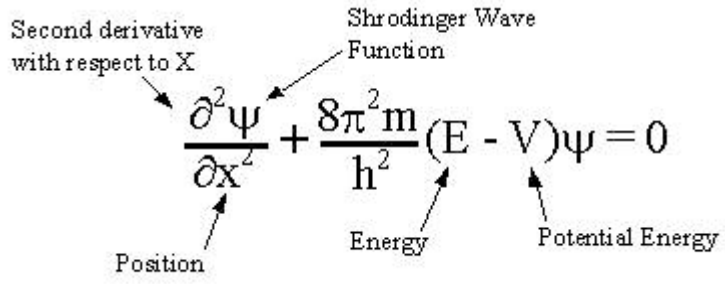
Schrödinger, Erwin. (Dec 1926). An undulatory theory of the mechanics of atoms and molecules. *Phys.Rev.* 28 (6): 1049-1070.doi:10.1103/PhysRev.28.1049.http://home.tiscali.nl/physis/HistoricPaper/Schroedinger/Schroedinger1926c.pdf.

Tiller, W.A., (2004). Towards a quantitative model of both local and non-local energetic/information healing. *The Journal of Alternative and Complementary Medicine*. November 2004, 10(5): 867-877. doi:10.1089/acm.2004.10.867.

Wilber, K. (2006). Introduction to Integral Theory and Practice IOS basic and the AQAL map. *AQAL Journal of Integral Theory and Practice.* Spring, 1(1); 1-40.

Wilber, K. (2006g). Excerpt G: Toward a Comprehensive Theory of Subtle Energies. http://www.kenwilber.com/writings/read_pdf/87

[1]The Schrödinger equation is:



The solution to this equation is a wave that describes the quantum aspects of a system. However, physically interpreting the wave is one of the main philosophical problems of quantum mechanics.

The solution to the equation is based on the method of Eigen Values devised by Fourier. This is where any mathematical function is expressed as the sum of an infinite series of other periodic functions. The trick is to find the correct functions that have the right amplitudes so that when added together by superposition they give the desired solution.

So, the solution to Schrodinger's equation, the wave function for the system, was replaced by the wave functions of the individual series, natural harmonics of each other, an infinite series. Schrodinger has discovered that the replacement waves described the individual states of the quantum system and their amplitudes gave the relative importance of that state to the whole system.

Schrodinger's equation shows all of the wave like properties of matter and was one of greatest achievements of 20th century science.

It is used in physics and most of chemistry to deal with problems about the atomic structure of matter. It is an extremely powerful mathematical tool and the whole basis of wave mechanics.

[2] Wilber establishes this general chain of unfolding in Excerpt G: Towards a Comprehensive Theory of Subtle Energies.

[3] Gregory Nicosia, PhD. (2006) discusses thought energy, or energy frequencies correlative to thought and emotion in his essay, "Thought Energy: the Basis of a Quantum Leap in Psychotherapy." He says, "Thoughts and emotions are energetic expressions of human consciousness." Further, "Quantum mechanics, which is the **most powerful** explanation of reality as we know it, has demonstrated that every particle has an associated 'information wave' or wave envelop that travels with and guides the particle." And, "Thought energy fields, like other fields, carry information, have memory, and can be perturbed causing mental disquietude. The perturbation or disruption of the free flow of energy within the thought field is seen as the fundamental cause of all negative emotions...."

[4] For more information: http://www.energypsych.org/displaycommon.cfm?an=5 ; www.emofree.com ; and www.integralEFT.com