Expanding Hypnotic Pain Management to the Affective Dimension of Pain

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Abstract
Experimental (Price & Barber, 1987) and neuroimaging studies (Rainville, Carrrier, Hofbauer, Bushnell, & Duncan, 1999), suggest that it is the affective dimension of pain as processed in the anterior cingulate cortex (ACC) that is most associated with suffering and autonomic arousal. Conversely, pain related emotions (Rainville, Bao, & Chretien, 2005) and expectations (Koyama, McHaffie, Laurenti, & Coghill, 2005) modulate pain perception and associated pain affect. This paper presents both the scientific background and the general clinical steps involved in a practical hypnotic approach that uses emotion specific wording and the elicitation of prior positive experience to intervene at both the affective and sensory dimensions of pain. Such an approach enables patients to therapeutically use hypnosis to reduce their subjective distress even if they are not able to greatly reduce the sensation of pain. The utilization of positive state dependent learning (Rossi, 1986), following the advice of Milton Erickson to “discover their patterns of happiness” (Parsons-Fein, 2005) is emphasized.

Keywords: Hypnosis, pain, affect, anterior cingulate cortex.

The use of hypnotic phenomena in the management of pain has most likely been used for as long as there has been treatment of any kind, with most medical treatment prior to the 20th century highly dependent on expectation and suggestion (Barber, 1996). The scientific investigation of hypnotic phenomena in general and hypnotic analgesia in particular was probably most advanced by Hilgard and his associates with one of their many contributions being a seminal paper (Hilgard, 1967) that empirically demonstrated the reduction of pain through
hypnotic suggestion. Hilgard and Hilgard (1994) developed Neodissociation theory to explain the phenomena of hypnotic analgesia. Barber succinctly summarized the essence of Neodissociation theory indicating that it proposes that hypnotic analgesia involves “…the disruption - the dissociation- of sensory information on the way to conscious awareness” (Barber, 1996, p.6). A number of excellent guides to the use of hypnosis for pain management are available for the practitioner that describe the importance of a comprehensive clinical approach as well as providing specific techniques to facilitate such dissociation (Barber, 1996; Hammond, 1990; Eimer & Freeman, 1998; Spira & Spiegel, 1992). In a more recent review of controlled trials of treatment for chronic pain, Jensen and Patterson (2006) noted that hypnotic analgesia produces significantly greater decreases in pain relative to no treatment and to some non-hypnotic interventions such as medication management, physical therapy and education/advice. The effects of self-hypnosis on chronic pain were found though to be similar, on average, to progressive muscle relaxation and autogenic training, both of which were noted to often include hypnotic-like suggestions. Further investigating the benefits of hypnosis treatment that might not necessarily be the target of specific suggestions for pain management, Jensen and his associates (2006) queried 30 patients who had participated in a case series of hypnotic analgesia treatment. Most participants reported satisfaction with hypnosis treatment even when the targeted symptom, pain intensity, did not substantially decrease. Benefits from hypnosis treatment in addition to decreased pain or an increased perceived control over pain included an increased sense of relaxation and well-being, and decreased perceived stress. In a more recent quantitative follow-up of 26 participants, only 20% reported substantial and lasting long-term reduction in average daily pain, yet 81% reported still using the self-hypnosis skills learned in treatment. (Jensen et al., 2008).

In the view of this author, a potential explanation for Jensen et al.’s (2008) findings of continued use of self-hypnosis by 80% of individuals despite only 20% reporting reduction in pain may be found in the as yet underappreciated distinction between the sensory and affective components of pain (Price, 2000). The sensory component of pain provides basic information concerning the location and the sensory quality of the pain such as whether it is sharp, dull, burning, tingling or aching. The affective component of pain provides information concerning how bothersome or distressing the pain, and determines the overall experience of suffering (Barber, 1996, p.10). Price and Barber (1987) found that highly responsive hypnotic subjects were better able to reduce the sensory component of thermally induced pain. However, subjects with low hypnotic responsivity were as able to reduce the affective component of pain as were subjects with high hypnotic responsivity. In other words, there is more involved in reducing suffering than reducing the sensation of pain and hypnosis might be of value in doing so even for those not hypnotically gifted.

In a prior paper (Feldman, 2004), this author emphasized the importance of studies done by Rainville and his associates (Rainville, Carrier, Hofbauer, Bushnell & Duncan, 1999; Rainville, Duncan., Price, Carrier, & Bushnell, 1997) that used hypnotic suggestion to differentially modulate the sensory and affective dimensions of pain. Of note in those studies, it was the modulation of the affective dimension of pain corresponding to increased activation of the anterior cingulate cortex (ACC), as opposed to the sensory component, that was most associated with autonomic arousal as measured by increased heart rate. Rainville and his associates pointed out that this appeared to indicate a direct functional interaction between pain affect and autonomic activation. (Rainville, Carrier, Hofbauer, Bushnell & Duncan, 1999). This author (Feldman, 2004) suggested that such experimental findings support a new emphasis in hypnotic approaches to pain management. Whereas hypnotists
have typically focused upon techniques to enable individuals to dissociate from the sensation of pain, a range of therapeutic options opens when we think in terms of facilitating dissociation from, or moderation of the affective components of pain (Price, 2000; Price, 1996, p.83). It is quite possible that many individuals who cannot effectively dissociate from the sensation of pain might benefit from approaches to diminish their affective response. In this way, as demonstrated in the experimental studies of Rainville and his associates (Rainville, Duncan, Price, Carrier & Bushnell, 1997; Rainville, Carrier, Hofbauer, Bushnell, & Duncan, 1999), and Price and Barber (1987), and the clinical studies of Jensen and his associates (2006, 2008) individuals might report little change in the sensation of pain, but be less distressed by it. It is the intention of this paper to introduce a practical hypnotic approach to pain management that targets the affective as well as sensory dimension of pain. This will involve further presenting the scientific background for this approach as well as suggested clinical steps for implementing it.

More specifically, this paper will briefly review the nature of pain processing in the central nervous system as elucidated by neuroimaging studies, and the resulting three part model of pain involving intensity, primary, and secondary affect described by Price (2000). The studies by Rainville and his associates (1997, 1999) involving the neuroimaging of hypnotic dissociation of the sensory and affective dimensions of pain will briefly be reviewed and updated. This will include a review of findings that indicate that pain-related emotions modulate experimental pain perception and autonomic response (Rainville, Bao, & Chretien, 2005). Experimental findings on the role of expectancy in pain perception and reactivity will be reviewed due to its direct relevance to clinical hypnosis and the approach to be described. Other clinical approaches with a relevant clinical focus on the affective dimension of pain will be reviewed, including real-time fMRI feedback of ACC activation, (DeCharms et al., 2005) and the “heart focused” approach to emotional coherence developed by McCraty (2006) and his associates. Since the ACC plays such a key role, studies that delineate the localization of different emotions within the ACC will be reviewed as a basis for assessment and intervention of the affective dimension of pain. This will include anger, sadness/depression, and anxiety/fear most associated with pain. An approach for assessing these dimensions of pain affect and tailoring one’s hypnotic approach accordingly will be presented. This will emphasize the accessing of positive state dependent learning (Rossi, 1986) advocated by Milton Erickson when he advised practitioners in a teaching seminar to “discover their patterns of happiness” (Parsons-Fein, 2005).

Pain Processing in the Central Nervous System

Pain processing in the brain involves numerous pathways that function in serial and parallel with no central “narrator” of conscious perception at “headquarters” (Devor, 1999; Price, 2000). A and C pain fibers enter the spinal cord at the level of the dorsal horn, travel up the spine, and enter through a number of pathways. The best known of these are the anterior and lateral spinothalamic pathways. Awareness of these pathways provided the basis of the long dominant model of pain processing proposed by Melzack and Casey (1968). They proposed that sensory and emotional components of pain are processed in parallel by distinct brain structures. Sensory-discriminative aspects of pain such as quality, location, and intensity were viewed as mediated by lateral thalamic nuclei and the somatosensory cortex. Affective and motivational dimensions of pain were proposed as mediated by medial thalamic nuclei, the prefrontal cortex, and the limbic system. Subsequently, a number of studies including one by Coghill, Sang, Maisog and Iadorela (1999) demonstrated that pain intensity processing involves bilateral mechanisms of broader distribution in the brain than
envisioned by Melzack and Casey, including the insula, and anterior cingulate cortex thought only associated with the affective component of pain. Subsequent studies have indicated that in addition to the anterior and lateral spinothalamic pathways there are spinoreticular, spinohypothalamic, and spinoamygdaloid pathways (Casey, 2000; Price, 2000). Spinoreticular pathways associated with arousal activate the nucleus raphe magnus (NRM), pariaqueductal gray matter (PAG), lateral reticular nucleus (LRN), and locus ceruleus (LC). Electrical stimulation of these structures can produce powerful antinociceptive effects, probably serving the function of blocking pain under conditions of extreme stress such as a bullet wound not noticed in the heat of battle (Fitzgerald, 1996). The locus ceruleus is the brain structure most associated with the release of norepinephrine as part of the fight or flight response. The hypothalamus is the part of the brain most associated with the regulation of bodily processes and the initiator of key aspects of the stress response involving the hypothalamic-pituitary-adrenal axis. The amygdala is highly involved in emotional processing, especially of fear. Thus there are multiple pathways associated with the processing of pain that are also associated with fear, emotions and the stress response. These function both in series and parallel, in the sense that the ACC can be activated following a serial pathway most associated with the sensory processing of pain in which input goes from the lateral thalamic nuclei, to the somatosensory cortex, to the prefrontal cortex, to the insula and then the ACC. Alternately, the ACC can more directly be activated by parallel pathways from the amygdala, or medial thalamic nuclei. Overall, the ACC appears to be a central player in the process, receiving input from the thalamus, amygdala, insula, orbitofrontal and motor cortex (Price, 2000).

The central role of the ACC in processing the affective component of pain was demonstrated in a series of studies done by Rainville and his associates. In the first of these studies, Rainville, Duncan, Price, Carrier, and Bushnell (1997) used hypnotic suggestion to create a perceptual dissociation between pain unpleasantness and intensity. Hypnotic suggestions to both increase and decrease pain unpleasantness were given to highly hypnotizable subjects while also giving the suggestion that the intensity of the pain would stay the same. PET monitoring revealed significant changes in pain-evoked activity in the ACC without significant changes in the primary somatosensory cortex (SS1). In other words, activation of the ACC varied depending upon the hypnotic suggestion for the degree of unpleasantness of the stimulus, despite the activation of the somatosensory cortex remaining constant.

Rainville, Carrier, Hofbauer, Bushnell, and Duncan (1999) demonstrated in subsequent experiments that hypnotic modulation of pain unpleasantness could be achieved both independently of and due to changes in perceived pain intensity (i.e. in series or in parallel). In their second experiment, there was a significant correlation between stimulus-evoked heart rate increase and ratings of pain unpleasantness, but not pain intensity, suggesting a direct functional interaction between pain affect and autonomic activation. In their third experiment, suggestions were given to increase and decrease the sensory rather than the affective dimension of pain. Significant modulation of pain intensity was achieved with secondary changes in pain unpleasantness ratings. In summary, hypnotic suggestions to increase or decrease pain unpleasantness did not change perception of pain sensation. On the other hand, changes in pain unpleasantness closely paralleled the modulation of pain intensity. These results were viewed as consistent with a successive stage model of pain processing proposed by Wade, Dougherty, Archer, and Price (1996) and more fully articulated by Price (2000). Price (2000) noted that pain affect is a result of a central network of brain structures and pathways that contain both serial and parallel connections. Increased pain affect can be the result of increased pain intensity or due to other input from the brain.
including cognitions or activation of a fear response via the amygdala. Available neuroimaging studies indicated that the ACC plays a pivotal role in the processing of pain affect integrating multiple inputs including somatosensory pain with other sensory modalities, memory and prefrontal areas that attach significance and long-term implications to the sensation of pain (Price, 2000).

Price’s (2000) model of pain distinguishes three major components to the subjective experience of pain. These are sensation, primary and secondary affect. Sensation refers to the somatosensory perception concerning the location, quality, and intensity of the stimulus. Primary affect involves the immediate feelings of unpleasantness associated with the painful sensation. Secondary affect, often referred to as “suffering,” involves the emotional distress generated by one’s understanding of the pain and its long-term implications. One’s appraisal of the pain and negative patterns of thinking concerning it, such as catastrophizing, generate negative affect. That negative affect has a recursive effect on the experience of pain was demonstrated in a more recent series of studies by Rainville, Bao and Chretien (2005). In their first experiment, they demonstrated robust increases in the pain ratings of subjects during hypnotically generated experiences of sadness, anger, and to a lesser extent fear-anxiety. As one might expect, the second experiment demonstrated that increases in pain are correlated to increases in desire for relief. In all three experiments, the effect of hypnotically generated emotions was larger on pain unpleasantness than intensity. Pain evoked cardiac responses as measured by heart rate variability (R-R interval) - a measure of parasympathetic activity - were modulated by emotions and once again correlated most consistently with pain unpleasantness. In other words, the sensation of pain not only generates unpleasant affect and probable emotional distress, but being emotionally distressed makes one more sensitive to pain, especially generating increased negative pain affect. Of note again from a clinical perspective, autonomic reactivity as well as subjective distress was most associated with negative pain affect. This may play a role in the highly significant differences in pain responsivity from one person to the next noted by Coghill, McHaffie, and Yen (2001).

Expectancy

The influence of cognitive factors upon activation of the ACC and pain affect was further experimentally illustrated in two neuroimaging studies that examined the role of expectancy. In a study done by Sawamoto, et al. (2000), activation of the anterior cingulate cortex was equivalent to that of a painful stimulus when the subjects were expecting a painful stimulus, but actually received a nonpainful warm stimulus. Of further clear relevance to the clinician, Koyama, McHaffie, Laurenti, and Coghill (2005) demonstrated the power of positive expectation for pain management. Expectation of decreased pain powerfully reduced both the subjective experience of pain and activation of pain-related brain regions such as the primary somatosensory cortex, insular cortex, and ACC even though the actual sensory intensity of the pain remained the same. The importance of expectancy in clinical hypnosis is well known (Kirsch, 2001; Lynn & Kirsch, 2006), as is its role in the placebo effect (Kong, Kaptchuk, Polich, Kirsch, & Gollub, 2007; Stewart-Williams, & Podd, 2004). Expectancy may therefore also play a role in the significant individual differences in normal subjects’ reports of the degree of pain to the same physical stimulus found by Coghill McHaffie and Yen (2001). Clinically, these individual differences and expectancy of pain are likely to play an important role in generating the negative affect and associated pain behavior in clinical examinations that result in medical professionals discounting patients because their pain complaints exceed “objective findings.”
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**Real-Time fMRI, Heartmath, the ACC and Pain Management**

The importance of focusing on pain affect as processed in the ACC has further been affirmed by the approach developed by DeCharms et al. (2005). Since brain imaging studies have so consistently indicated that the ACC has a central role in the processing of pain, they developed an approach that teaches individuals to modulate ACC activation through real-time fMRI feedback of the ACC. Using real-time fMRI to guide training, normal subjects were able to learn to control activation in the rostral anterior cingulate cortex, resulting in a corresponding change in the experience of pain. Chronic pain patients trained in this way also reported decreases in the ongoing level of their chronic pain. Changes in pain ratings amongst this clinical chronic pain group were three times larger than for the autonomic biofeedback control group. (DeCharms et al., 2005). This real-time fMRI feedback procedure represents the degree of ACC activation on a monitor as a flame, with individuals instructed to reduce the flame. Ternstrom’s report of her subjective experience of this is of interest from a clinical perspective. A chronic pain sufferer for 20 years, she was unable to effectively reduce the flame until she developed the highly personal approach of spiritually associating the flame to that of martyrs being burned and thereby developing an affectively positive spiritual association to it. (Ternstrom, 2006). Therefore, even though they are using cutting edge technology, the essence of therapeutic change involved utilization of subjective personal experience.

Rollin McCraty and his associates (2006) at the HeartMath Research Center have developed a vastly different biofeedback approach that focuses upon increasing positive affect. McCraty notes that most psychological approaches have focused on cognitive processes that influence the perception of stress (cognitive perspective) or the body’s reaction to stress (psychophysiological perspective). McCraty argues that it is the emotions activated in response to a threatening stimulus that are central to the experience of stress. It is emotions such as anxiety, irritation, frustration, lack of control, or hopelessness that activate the autonomic nervous system and hypothalamic-pituitary-adrenal axis. He further points to neuroscience evidence that emotional processes operate at a much higher speed than thoughts, frequently bypassing the mind’s linear processes entirely. While emotions can be induced by thoughts, they can also arise from unconscious associations triggered by external or internal stimuli. In other words, while emotions can follow thoughts, emotions can also occur independently of conscious cognitive processes, and can significantly affect cognitive processing. This reflects the parallel processing in the brain noted above, and is familiar to practitioners of hypnosis who will use techniques to purposely bypass conscious processes. (McCraty, 2006), therefore, argues that intervening at the level of the emotional system itself is a more direct, efficient and powerful way to override and transform the maladaptive patterns underlying unhealthy psychological, behavioral and physiological stress responses. He and his associates have developed techniques as part of their HeartMath system that start with mindful breathing and then shift an individual’s focus of attention to the area around the heart (often associated with positive feelings) while intentionally self-inducing a positive emotion such as appreciation. When stressed, an individual’s heart rhythm has an irregular, jagged, incoherent pattern. When one shifts to a more positive emotional state, the heart rhythm pattern changes to a smoother, wave-like, coherent pattern. The HeartMath system uses a device to feedback the increasingly synchronous or coherent heart rate rhythms associated with positive emotions. This synchronous heart rate variability is associated with parasympathetic activation through increased vagal afferent input that is involved in the inhibition of sympathetic outflow and the inhibition of pain signals (McCraty, 2006). Of further interest, psychophysiological coherence associated with the elicitation of
positive emotions is distinct from a state of relaxation. While activating a parasympathetic response, coherence does not necessarily involve a lowering of heart rate, but rather a change in the heart rhythm pattern (p.20). In other words, in a manner similar to forms of hypnosis, one can activate parasympathetic responses and changes in thought and feeling without deep relaxation. Overall, regardless of the degree of relaxation, one can intervene in the emotional response system through modulating heart rate variability, or by bypassing conscious processes through hypnotic approaches as experimentally done by Rainville and his associates and clinically by hypnotherapists. Regardless of the specific pathway or approach taken, the ACC is likely to be involved, and therefore, reviewing neuroimaging studies that further elucidate the role of the ACC in emotional processing appears valuable.

The ACC and the Neuroimaging of Emotions

It is important to note that the relationship between pain and negative affect is far more complex than a view that might locate all negative emotions in the same place in the ACC. Processing of emotions involves a complex network of brain structures including areas of the brainstem, amygdala, hippocampus (associated with memory), insula, and multiple regions of the cingulate and prefrontal cortex that can vary depending upon the emotion (Phan, Wager, Taylor, & Liberzon, 2001; Vogt, 2005). While many of the brain structures involved with the processing of pain are also involved in the processing of emotions, experimental studies indicate that they do not simply overlap (Vogt, 2005). Furthermore, animal experiments and human brain imaging studies indicate that the ACC is involved in the sensory as well as affective processing of pain, multiple emotions, cognition, learning and memory, and its dysfunction is involved in numerous clinical conditions. In addition to physical pain, ACC activation was noted in response to the social pain of exclusion (Eisenberger, Lieberman, & Williams, 2003), and imagined pain (Ogino, Nemoto, Knui, Saitoin, Kakigi, & Goto, 2007). Learning and memory studies associate the ACC with different forms of fear memory, avoidance memory, working memory and remote spatial memory (Zhou, 2007). Cognitive functions including anticipation, attention, conflict monitoring, novelty detection, and decision making have also been documented as involving the ACC (Vogt, 2005). Clinical conditions including general anxiety, panic disorder, depression, bipolar disorder and schizophrenia have been noted to involve the ACC. Reviewing the overall role of the ACC, especially in relation to pain and emotions, Vogt and his associates developed a four-region model of the cingulate gyrus. These regions and subregions are the subgenual and pregenual anterior cingulate cortex (sACC and pACC), the anterior and posterior midcingulate cortex (aMCC and pMCC), the dorsal and ventral posterior cingulate cortex (dPCC and vPCC), and the retrosplenial cortex (RSC). In summarizing 23 experimental studies of simple emotion processing, Vogt noted that different emotions are processed in somewhat different areas of the cingulate cortex. He also indicated the following: 1) the sACC is involved in negatively valenced memories, 2) the pACC is involved in happy emotions, 3) the aMCC is involved in fear, the pMCC and dPCC have little or no involvement in emotion, and 4) the vPCC is involved in emotions but not in a specific way since it was also activated by control conditions. Summarizing 40 studies concerning the processing of noxious stimuli (pain) he concluded the following: 1) the pACC is involved in unpleasant experiences and directly drives autonomic outputs, 2) the aMCC in involved in fear, prediction of negative consequences and avoidance behaviors through the rostral cingulate motor area, 3) the pMCC and dPCC are not involved in emotion, but are driven by short-latency somatosensory signals that mediate orientation of the body in space through the caudal...
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cingulate motor area, 4) nociceptive stimuli reduce activity in the vpCC in a subregion that normally evaluates self-relevance of incoming visual stimuli. Overall, Vogt (2005) concluded that there is a complex interaction between pain and emotions with activation patterns of emotions and pain not simply overlapping. Vogt (2005) further indicated that there may be a map of placebo effects organized according to the cingulate subregions activated. For instance, acupuncture using either proper or retractable placebo needles activates the dorsal part of the pMCC corresponding to acute somatic pain, as opposed to the pACC which is the site of the opioid placebo effect. Of greatest relevance to this article, induction of analgesia by hypnosis was noted to target the aMCC, which is consistent with fear reduction. In contrast, the highest level of opioid receptor binding is in the pACC, which is the site of the opioid placebo effect. (see also Petrovic, Kalso, Petersson, & Ingvar, 2002). The pACC is associated with both pain unpleasantness and happiness, and directly drives autonomic outputs. It therefore is quite possible that experimental hypnotic approaches to the reduction of pain acted upon the aMCC due to the traditional hypnotic approach of emphasizing relaxation and thereby reducing fear/anxiety. In contrast, hypnotic approaches designed to elicit positive emotions (i.e. “patterns of happiness”) may activate the pACC and therefore more directly stimulate the area of greatest opioid receptor binding and the greatest driver of autonomic output. Overall, there may be varied hypnotic pain management effects depending upon the nature of the hypnotic suggestions given. This might particularly be the case in modifying pain affect, with different emotions targeted having different representations in the cingulate cortex.

Summary of Relevant Research Findings

1. Hypnosis can differentially modulate the sensory or affective dimension of pain depending on the nature of the suggestions. It was the modulation of the affective dimension of pain corresponding to increased activation of the anterior cingulate cortex (ACC) that was most associated with autonomic arousal as measured by increased heart rate, with there appearing to be a direct functional interaction between pain affect and autonomic activation. (Rainville, Carrier, Hofbauer, Bushnell & Duncan, 1999; Rainville, Duncan, Price, Carrier, & Bushnell, 1997).

2. Hypnotically generated feelings of sadness, anger, and to a lesser extent fear-anxiety increase pain sensitivity, with the affective dimension of pain (unpleasantness) more greatly affected than ratings of intensity. Pain evoked cardiac responses were modulated by emotions and once again correlated most consistently with pain unpleasantness and activation of the ACC (Rainville, Bao, & Chretien, 2005).

3. Expectancy can increase or decrease pain reactivity both subjectively and as measured by neuroimaging of structures involved in pain processing especially the ACC (Sawamoto et al., 2000; Koyama, McHaffie, Laurenti, & Coghill, 2005).

4. An effective approach to pain management uses real-time fMRI feedback to reduce ACC activation. (DeCharms et al., 2005). Another approach focuses upon positive emotions to generate increased heart rate coherence (McCraty, 2006), and one would assume activate centers of the ACC associated with the felt emotion.

5. There are different areas of the ACC associated with different emotions and not a one-to-one relationship between pain unpleasantness and all negative emotions. In
experimental studies to date of hypnotic analgesia, the area of the ACC most frequently activated corresponds to the area for fear reduction. Both opioid analgesia and happiness are associated with another area that is most associated with autonomic response.

6. The potential exists for more effectively modulating pain affect and subjective distress by activating individual specific “patterns of happiness”.

The Utilization of Affect in Hypnotic Pain Management

The above research findings suggest that hypnotic approaches that focus on the affective dimension of pain may be more effective with more people than the traditional approach that emphasizes relaxation and the dissociation from the sensation of pain. What specifically might this mean, and how can we translate this into patient care? In their standardized hypnotic protocol for reducing pain intensity Rainville, Carrier, Hofbauer, Bushnell & Duncan, (1999) suggested the following:

“When you feel your hand in the water bath, you may be surprised to notice how much less intense the sensation is than you might have expected it to be, how it tends to feel only warm…Almost as if, when you feel the stimulation of the water, all you continue to experience is that warmth…As time passes, you can turn down the dial of your sensation, much like turning down the dial on a stereo…” (p. 170).

Their suggestions, in accord with traditional hypnotic suggestions for pain control, go on to further suggest changes in the quality of the sensations, such that the subjects “perhaps feel a tingling or numbness.” Building upon this, the central metaphor that this author uses in discussing hypnotic pain control is that, “You can not only turn the dial down on the volume, you can change the channel.” Virtually all patients agree that it is not just the pain they are dealing with, but the associated depression, aggravation, irritation, “last nerve” feeling that the pain generates. It is explained that hypnosis can certainly reduce the sensation of pain through a process of reducing normal sympathetic nervous system reactivity to pain (“quieting your nerves as it dials down your nervous system”), but often more so, it can change how you feel emotionally by putting you into a different state of mind. This is not unlike the different state of mind and emotional state you experience when you take an actual trip to the beach, the mountains or to visit your grandchildren.

Rainville, Carrier, Hofbauer, Bushnell, & Duncan, (1999) were remarkably effective in reducing the affective response to pain (with highly hypnotic experimental subjects) through a standardized protocol involving general suggestions of “well-being, comfort, and restfulness.” Clinically, we can far more specifically identify the negative emotional state the patient is in, use suggestions that target that emotion, and activate emotional experiences that are most meaningful for the individual to counter that emotional state. The most common negative emotions associated with pain, as reflected in the subsequent study by Rainville and his associates (2005) when they investigated the effect of negative emotions on experimental pain, are anger, sadness-depression and anxiety-fear. These are listed in Table 1 with the first column indicating words typically used by patients to describe these negative affective states. Probably more immediately obvious in the clinical setting are the ways in which these emotions are nonverbally communicated. The basic research studies noted above summarized by Vogt (2005) indicated that these negative emotions are processed in different areas of the ACC. It therefore seems likely that targeting the specific emotion, as opposed to generic negative affect is likely to be more clinically effective. Furthermore, shifting the patient’s associations towards positive emotions associated with experiences of happiness (i.e. “changing the channel”) is likely to activate the area of the ACC associated with the emotion of happiness, opioid analgesia, and autonomic reactivity (Vogt, 2005). This brings scientific support to Erickson’s suggestion to “discover their patterns of happiness” (Parsons-Fein, 2005).
The descriptive words listed in Table 1 for each category of negative affect associated with pain are intended to be illustrative without being comprehensive or exclusionary. They are presented at some length to provide a sense of the significant potential variations in feeling within the three general categories. There is a qualitative difference if a patient says he feels irritated as opposed to feeling bitter, trapped, disrespected, or “ready to blow.” Similarly, while symptoms generally interact, the quality of depressive feelings can significantly differ if a person complains primarily of emotional distress reflected in crying spells, hopelessness, apathy, or the somatic symptoms of fatigue, loss of energy, and appetite. Anxiety symptoms similarly generally overlap, but there is a qualitative difference if the symptoms are more cognitively based resulting in worrying or obsessive thinking, or are more somatically based - feeling one’s stomach in knots, cold sweats, or heart racing in panic. For the purposes of this article, the point is to identify the negative affective state most associated with the pain to thereby provide a means of most effectively therapeutically targeting it. This is done through interspersing therapeutic words to counter the negative emotions in one’s induction, deepening, therapeutic hypnotic work, and post hypnotic suggestions. Illustrative sample words are listed in the second column of Table 1. It is also done through activating the personal state dependent learning (i.e. “patterns of happiness”) (Rossi, 1986), unique to the individual patient that is likely to counter the negative emotion expressed.

### Table 1: Negative Pain Affect

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<tr>
<th>Anger:</th>
<th>Patient Descriptors</th>
<th>Therapeutic Words</th>
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<tr>
<td></td>
<td>aggravated, irritated, ill</td>
<td>calm, peaceful, settled, soothed, at ease, serene, cool, loving, mild, agreeable relaxed, gentle, caring, understanding, comforting, patient, still, focused, thoughtful, mindful, detached, free, above it all, respected, appreciated, grateful, heart warming.</td>
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<td></td>
<td>at my last nerve, agitated</td>
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<td></td>
<td>nasty, unpleasant, uptight</td>
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<td>hot, bitter, sore, hair-triggered</td>
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<td>fed up, upset, fired up, ready to blow, trapped, cornered, dishonored, disrespected, not right, cold.</td>
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<td>Sadness/Depression:</td>
<td>sad, hurt, down, depressed, sinking, low, dragging, blue, drained, tired, washed out, beat, hopeless, helpless, guilty, discouraged, disappointed, failed, dissatisfied, no interest, don’t care, doesn’t matter.</td>
<td>joyful, happy, up, upbeat, buoyant, floating, confident, you can, strong, competent, energized, refreshed, recharged, restored, healthy, hopeful, optimistic, in control, take charge, satisfied, absorbed, interested, caring, connected, grateful, of heart.</td>
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<td>Anxiety/Fear:</td>
<td>shaky, nervous, worried, scared, afraid, jumpy, on edge, restless, “it will hurt”, can’t sit still, waiting for the next shoe to drop, panicky, butterflies inside, stomach in knots, unsteady, afraid will lose control, hot, cold sweats, mind racing, fear the worst.</td>
<td>calm, peaceful, serene, quiet, tranquil, warm, still, clear, centered relaxed, focused, confident, in the moment, in the zone, flowing, steady, cool, clear headed, open, flexible, trust yourself, let go, bemused, good humored, optimistic, taking it as it comes, taking your time, absorbed, masterful.</td>
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Categories of positive state dependent learning with illustrative examples are listed in Table 2. If the patient describes feeling angry, “fired up,” “ready to blow,” this author might have him go to a waterfall using wording that emphasizes the calm, cool, peaceful, and soothing qualities of that setting, “where the water, while turbulent, seems to flow through you, putting you in harmony with that cool, soothing, rhythmic flow.” While using a traditional hypnotic approach that uses suggestions that counter the unpleasant sensory qualities of the pain and enables the patient to dissociate from the pain, one is simultaneously creating a shift in the patient’s affective state. In other words, one need not choose between focusing on the sensory or affective dimension of pain, one can build upon the traditional sensory focus to address the affective dimension as well. As a further example, if the patient is expressing feeling agitated and irritated by the pain such that he can’t think straight and is afraid of what he might do, this author might suggest that he relive a prior sports experience. “After being knocked down by a blocker you get up, transforming what you feel into a sense of determined, calm, intense focus, where you don’t feel anything, but can see everything more clearly, moving easily and naturally, making the right decisions with an open and clear mind.” A detached, depressed, dejected, tired, woman was asked to relive a dance performance in which she “connected with the upbeat music, transforming the energy of the music into a vital series of powerful movements in which she soared effortlessly and easily with a strength and confidence she did not know was within her.” An anxious woman, very fearful and reactive to the pain acknowledged that she did not show her pain and upset with a beloved niece, able to focus on the loving feelings she has for her and only focus on her niece’s enjoyment. It was suggested that she relive a recent experience with her niece that “warms her heart, and helps her to feel calm and loving, not aware for some time of the pain, while being the caring adult who is in control of the situation, protective of her niece’s well being and focusing on her happiness.”

<table>
<thead>
<tr>
<th>Table 2: Accessing Positive State Dependent Learning: Discovering their Patterns of Happiness</th>
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<tbody>
<tr>
<td><strong>Relaxation/Calm</strong> -</td>
</tr>
<tr>
<td>beach, mountains, waterfall, meadow, massage, rocking chair, hammock, Jacuzzi, floating, listening to music</td>
</tr>
<tr>
<td><strong>Active Absorption</strong> -</td>
</tr>
<tr>
<td>sports experiences “in the zone”, artistic performance, writing, painting, driving, cooking, watching movies, listening to music</td>
</tr>
<tr>
<td><strong>Competence/Achievement/ In Control</strong> -</td>
</tr>
<tr>
<td>earning a diploma, receiving an award, completing a project, in command of others, coaching, teaching, healing others, sports officiating</td>
</tr>
<tr>
<td><strong>Loving Memories</strong> -</td>
</tr>
<tr>
<td>children, grandchildren, parents, courting, friends, heartfelt appreciation, acts of loving kindness</td>
</tr>
<tr>
<td><strong>Humor</strong> -</td>
</tr>
<tr>
<td>personal experiences, children, practical jokes, favorite comedians, movies, television shows</td>
</tr>
<tr>
<td><strong>Spiritual Connection</strong> -</td>
</tr>
<tr>
<td>church, praying, singing in choir, retreats, meditative experiences, peak experiences, healing</td>
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A Process for Hypnotic Modification of Pain Affect and Sensation

A general outline of the suggested process for hypnotic modification of both pain sensation and affect is delineated in Table 3. This author will usually discuss with patients how the pain has affected their lives including preferred activities they have not been able to do (i.e. patterns of happiness). We will then further discuss how it understandably makes them feel angry, depressed, or anxious, depending upon their clinical presentation. It is generally further explained that pain naturally activates an alarm reaction that “fires up your nervous system, amplifying the message to the brain indicating that you are in pain.” Generating positive expectancy, it is stated that hypnosis reduces that alarm reaction by switching into a relaxation response- “quieting your nerves as it quiets your nervous system”. As it does so, it not only turns the dial down on the sensation of pain, but also reduces that “aggravation, irritation, last nerve feeling” (if the individual is angry, irritated, or anxious). It also can enable you to go off in your mind, taking a break from it all, not unlike taking a brief vacation. The patient is next asked to rate on a scale of 0-10 their level of pain, and separately the level of their emotional distress (“aggravation, irritation, last nerve feeling”) due to the pain. While not necessarily used with all patients, rating in this way seems most helpful to those who are doubtful of the process. For some time, this author would work with patients who would discount the beneficial effects of hypnosis for managing their pain. They would come out of trance appearing far more relaxed and comfortable but discount the process saying, “But I still hurt!” This author would subsequently for many years typically ask patients to rate their pain before and after, and emphasize that their ability to reduce their pain from an 8 on a scale of 0-10 to a 5 or 6 is very promising, and with practice they would likely be able to reduce it more easily and fully. This often would still not convince patients of the value of self-hypnosis practice. In the past few years it has been this author’s experience that patients will typically acknowledge a more significant reduction in their level of emotional distress than their pain following hypnosis. Reducing their level of distress from an 8 to a 2 or 3 while their pain level only goes down to a 5 or 6, results in patients more readily acknowledging that they can reduce that “last nerve feeling” such that they can better deal with their pain and all the other things in life they feel overwhelmed by.

Table 3: Hypnotic Modification of Pain Affect and Sensation

<p>| | |</p>
<table>
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<tbody>
<tr>
<td>1.</td>
<td>Frame hypnosis as impacting both sensation and affect.</td>
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<tr>
<td>2.</td>
<td>Inquire about current level of both sensation and affect.</td>
</tr>
<tr>
<td>3.</td>
<td>Utilize inductions, suggestions, and post hypnotic suggestions that address both.</td>
</tr>
<tr>
<td>4.</td>
<td>Emphasize wording that targets the most relevant emotion - anger, sadness, or anxiety.</td>
</tr>
<tr>
<td>5.</td>
<td>Access a “pattern of happiness” that most directly counters that negative emotion.</td>
</tr>
<tr>
<td>6.</td>
<td>Inquire about changes in both sensation and affect after the hypnotic experience.</td>
</tr>
<tr>
<td>7.</td>
<td>Suggest increasingly positive change (i.e. effectiveness) with practice.</td>
</tr>
</tbody>
</table>
Clinical Examples

The process that addresses the relevant negative emotions through the use of wording that targets the emotion and accesses patterns of happiness that counter the negative affect (steps 3-5, Table 3), can probably best be further illustrated through brief examples. This approach does not involve testing for hypnotic responsiveness since, as noted by Barber (1996, p. 19), hypnotic responsiveness does not predict clinical response. Individuals who are low in hypnotic suggestibility have been shown to be able to significantly reduce suffering (Price and Barber, 1987). Additionally, as further argued by Barber (1996, p. 19), the discouraging effects that such tests may have, and the unclinical stance taken when administering such tests can work against developing a therapeutic alliance that generates positive expectancy. Feedback from patients concerning their degree of hypnotic anesthesia or other forms of dissociation can provide the information upon which to gauge hypnotic responsiveness and plan further hypnotic intervention.

Case 1

A 45-year-old male truck driver was seen as an outpatient having been referred by a psychiatrist because the patient’s wife reported that he was so irritable and angry that on one occasion she took the children and left the house for the night. The referring physician prescribed Welbutrin and diagnosed him as having post-concussion syndrome secondary to a severe accident he suffered 5 months earlier with loss of consciousness. The patient’s truck ran into the back end of a flat bed truck such that the collision caused his cab to be pushed back to about the fifth wheel of his vehicle. It reportedly took about 2 hours for him to be cut out of the truck and he was airlifted to a hospital where he was in intensive care for 5 days and then transferred to first a regular floor and eventually an inpatient rehabilitation facility. He underwent reconstructive surgery of his right knee, and repair of a broken left wrist, broken little finger, and injury to his left collarbone. A spinal fracture required him to be in a body brace for 12 weeks. He subsequently participated in outpatient physical therapy, progressing from pool to land therapy. He still though suffered from low back and left shoulder pain that interfered with his sleep.

The patient had been married to his second wife for 9 years. They had an 8-year-old son and 6-year-old daughter. He had been a truck driver for 23 years and never had an accident or ticket prior to this accident. He reported a good deal of financial distress having to pay for his family’s health insurance through a Cobra policy that took up a significant amount of his workers’ compensation replacement wage.

The patient greeted this author in the waiting area with a warm handshake. He interacted in an earnest and poignant manner, quickly becoming tearful as he talked about his accident and his upset over acting in a threatening way towards his wife. He ironically presented as far less angry, irritable, intolerant of authority, and potentially violent than many truck drivers this author has worked with. While mildly impulsive he denied significant cognitive impairment secondary to his head injury and did not present as such. He scored within the moderately depressed range on the Beck Depression Inventory-II, but denied significant symptoms of PTSD. He discussed how like most truckers he enjoyed the independence he felt on the open road, where he felt free to stop and go as he chose without anyone looking over his shoulder. With his injuries, he had largely been confined to the house for several months. He was not only feeling “stir crazy,” but felt confined to his “wife’s turf” in the house where he felt that everything that he tried to do around the house was scrutinized and judged to be wrong. While his emotionality in interview and reported
irritability appeared in part due to emotional lability characteristic of mild head injury (i.e. post concussion syndrome), it also appeared that his outburst was related to feeling cooped up and his wife being overprotective and highly sensitive to his change in manner. While a session with the wife was an obvious possibility, the likelihood of the patient becoming more mobile in the near future and able to leave his house to more actively participate in rehabilitation led this author to “steer away” from that.

In the second session, we further discussed his understandable feelings of being “cooped up” and how difficult, if not impossible, it is to do things “right” at home. The patient was guided through a deep breathing induction in which the words “freedom” and “control” were emphasized. “How as he breathed more deeply and freely, he will feel the tension drift off, feeling an increasing freedom from pain and tension as he develops a new found sense of control”. In this first hypnotic session, he indicated that he took himself to the beach where he felt he could breathe freely and feel relaxed. He reported that while he was there he felt no pain; and though he felt pain when he came back into the room he felt much calmer and at ease. In the next session, in part to address his understandable anxiety about returning to driving a truck, his prior positive experiences driving were utilized. It was suggested that he relive the experience of driving on the open road: “where one feels a sense of freedom that comes with control of an 18-wheeler. Where one becomes so in tune with the hum of the motor, so intuitively in control that you shift gears without thinking, not even needing to use the clutch. Where you get into a zone where you are so absorbed in the road that you lose track of time, and find yourself comfortably driving a surprising distance, free from the limitations of the body others might have.” While in trance he again reported being free of pain. Probably more importantly, he enjoyed reliving some of his favorite drives, re-experiencing the freedom of the open road that left him far less distressed and “stir crazy,” even though he still experienced pain when he returned from his hypnotic trip. The patient was seen individually one more time and then was seen in group sessions that included self-hypnosis (“coping skills”) training as part of a comprehensive occupational rehabilitation program that prepared him physically as well as psychologically to return to work. While he was noted by the physical therapist to have given excellent effort in the program and progressed such that he could return to work, he unfortunately developed an infection in his non-injured knee requiring him to go to the emergency room. A recent phone contact with him 6 months post discharge from the rehabilitation program indicated that he was coping well without angry outbursts despite a subsequent series of surgeries, therapy and setbacks.

Case 2

A 55-year-old married man was seen in consultation for assistance with his chronic pain and depression. He had suffered low back pain since a work related injury more than 6 years prior. While the condition of his back made him a candidate for a lumbosacral fusion, he had a history of osteomyelitis and was at significant risk for a recurrence should he have fusion surgery. Unable to work due to his pain, he was understandably depressed feeling useless and frustrated that he was unable to use the expertise he developed working over 30 years in the construction field such that he was supervising major projects at the time of his injury. His increased depression prompted his family physician to increase his Zoloft from 100 to 150 mg. a day. He took Hydrocodone twice a day for his pain. While denying symptoms of severe depression including suicidal intent on the Beck Depression Inventory and initial interview, he stated that he saw no purpose to his life, with little to think about other than his pain. To add to his pain and functional difficulty, he had fallen and fractured his right ankle about two weeks prior to our initial consultation.
While initial rapport was established in the first session through a discussion of baseball, far more therapeutically useful was our conversation in the second session about his interest in writing. He indicated that he dabbled with writing from time to time, but did not view himself as sufficiently “schooled in it” such that he could do it well or provide any meaningful or unique contribution. We discussed how through writing, especially fiction, one becomes absorbed in a creative process that can take one from one’s current reality. The hypnotic induction that followed utilized his background in construction emphasizing the structural aspects of the body that change as one relaxes. Trance was deepened by suggesting that he recall certain projects he had worked on and become absorbed in the details of the buildings. He was encouraged to recollect the feeling of being in charge, competent, and confident in what he constructed. It was further suggested that he has unique capabilities for “constructing” stories - a “strong, solid foundation” of experience to “build upon” to “fabricate” his hypnotic capacities and to use as “quality material” for his writing. He became absorbed in the details of an old house he had been thinking about as a setting in a story, and specific aspects of two characters involved in his story. This hypnotic approach therefore enabled him to not only dissociate from the pain, but prompted a creative process that motivated him to write. He was thus able to utilize his life experience in the construction field as a unique way of representing the nature of characters and to have a story unfold as different parts of an old building were uncovered. He came to see that his prior life experience was not a waste, but a unique resource to use in his writing. Hypnosis therefore not only reduced the sensation of pain and its immediate negative emotional state, but reduced the associated negative secondary affect as he changed his view of himself and his life possibilities. Treatment involved seeing him for another 5 sessions in which we refined this approach by having him focus on different aspects of the buildings and the characters. Getting the patient to see this as his current life work and therefore take a more disciplined approach to his writing, as he did when he managed building projects, was a primary challenge. At the end of treatment this gentleman said that things had turned around such that he felt “good” (i.e. emotionally positive) about 80% of the time as opposed to the 20% when he began treatment. He indicated in a phone follow-up 6 months later that he felt that he still was doing well emotionally even though he had not written as much as he thought he would.

Case 3

A 38-year-old married man with a 10-year-old daughter was referred for assistance in managing his pain and anxiety. He had suffered an industrial injury to his finger 2 months prior to initial consultation when his left hand was caught in a machine he was servicing. More specifically he suffered a severe extensor tendon laceration with middle phalanx comminuted fracture. Referral was made because his anxiety about medical procedures and resulting hyperreactivity to pain made it difficult to do minor procedures such as remove his sutures, and greatly limited his ability to participate in the hand therapy necessary to enable him to restore functioning. While denying prior mental health treatment, he presented as both anxious and depressed, scoring in the lower part of the severely depressed range (33) on the Beck Depression Inventory-II, and within the clinically significant range (27) on the Beck Anxiety Inventory. He acknowledged a phobic fear of medical procedures and activities involving cutting or chopping. He tearfully expressed feeling terribly down on himself, having taken the industrial maintenance job because he was downsized from a managerial position in an unrelated field, and now he had even “failed at this.” He was afraid that his anxiety, pain reactivity, and lack of confidence would prevent him from participating in
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therapy. This posed a significant barrier to him returning to the job in maintenance that enabled him to provide for his family, and ultimately prevent him from ever returning to the type of managerial position he felt he should be in.

Interestingly, this anxious, seemingly insecure man had for many years made extra income as a baseball umpire, having worked his way up to officiating the highest level of little league baseball and at times working college games. He was reasonably upset having lost his confidence to officiate games. We discussed his general procedure to prepare for a game. He described in great detail an hour-long process he developed over the years that enabled him to switch from his day-to-day mode to the mindset of an umpire. Following an eye focus induction in which his capacity as an umpire to intently focus on one thing and block everything else out was emphasized, he visualized himself getting to the ball park and going through his routine in a time compressed manner. It was then suggested that he relive what he felt was one of his better games umpiring from behind the plate. His capacity to be “calm, focused, and confident” in this “zone” was emphasized, as was his ability to “block out” all hecklers as he, with a “steady, clear headed, cool eye” trusts himself to “make the right call in the moment.” He reported in the second session that he was able to use self-hypnotic rehearsal to regain his sense of self confidence umpiring, requiring substantially decreased time to prepare before a game. To address his hyper-vigilance and over reactivity to pain in physical therapy, we repeated the eye-focus self-hypnotic technique emphasizing his ability in a game to focus on “the work he needs to do without reacting emotionally to the call one way or the other.” Furthermore, if you get hit by a ball you “shake it off and get back into the game focusing on the next pitch.” In a subsequent session, we discussed using his capacity for dispassionate observation to be mindful of his feelings without being so negatively judging of himself. This led to a discussion from a cognitive-behavioral perspective of his overly self-critical self appraisal that generated depressed feelings. In subsequent sessions accessing the cool headed, dispassionate, focused zone of being an umpire enabled him to return to working with tools at home and to return to his factory. He was able to far more actively participate in physical therapy with far less anxiety as he largely dissociated from the pain, which no longer triggered such immediate affective distress (primary affect), but probably more importantly was no longer associated with his sense of himself as a failure (secondary affect). He was after 6 sessions able to return to the factory where he was injured, and eventually service the machine that caught his finger.

Discussion

The above three cases were chosen to illustrate this approach in relation to the three negative affective states associated with pain: anger, depression and anxiety. While the negative emotions were overt enough to be the reason for treatment referral, nevertheless, their association with pain, especially chronic pain, is in the experience of this author more common than not. While treatment certainly did not exclusively involve hypnosis, the key elements of treatment involved: 1) identifying the key affective state associated with pain and disability, 2) utilizing words in the induction and therapeutic suggestions that addressed both the sensation of pain and the negative affective state, and 3) accessing positive state dependent learning that was helpful both in dissociating from the sensation of pain and in countering the negative emotional state. In all cases, the cause of the pain had been identified, the patient was receiving all appropriate medical treatment, and there was no contraindication to using hypnosis such as potentially causing a medical diagnosis to be missed. Furthermore, by purposely addressing the negative emotion associated with the pain, the three patients
were able to reduce their suffering regardless of their hypnotic responsiveness or the resulting reduction in the sensation of pain.

Summary
The major points of this article can be summarized as follows:

1. The experience of pain is complex involving sensory, cognitive and affective dimensions that are processed in serial and parallel in multiple parts of the brain.

2. The affective dimension of pain, including primary and secondary affect is most associated with autonomic arousal and subjective distress.

3. A negative emotional state increases pain sensitivity and reactivity, especially negative pain affect.

4. The ACC plays a key role in pain affect, integrating sensory, cognitive, and emotional input.

5. Experimental neuroimaging studies indicate that hypnosis can reduce pain affect or pain sensation based upon the wording of the suggestions, with a corresponding reduction in activation of the ACC or SS1.

6. It is reduction of pain affect as indicated by decreased activation of the ACC that is most associated with decreased autonomic arousal and subjective distress.

7. The central importance of the affective dimension as processed in the ACC has lead investigators to target it to reduce pain through real time fMRI biofeedback.

8. The modulation of pain through the fMRI technology still often requires the mediation of imagery of personal meaning to the individual associated with affective change.

9. Another approach and technology that specifically targets one’s affective state is the HeartMath approach that has the individual focus upon loving thoughts, memories, or feelings of appreciation.

10. Hypnosis can similarly and potentially more effectively activate positive state dependent learning, and by accessing such “patterns of happiness” likely activate the area of the ACC associated with both happiness and opioid analgesia.

11. Emotions are not simply positive or negative and are processed in different areas of the ACC. Targeting the specific emotion experienced by the individual and activating person specific positive state dependent learning is likely to be more effective than standardized approaches that are required in research protocols.

12. A therapeutic process was delineated that uses positive expectancy to address both pain sensation and affect, and uses both specific wording and prior positive experience to therapeutically intervene at both the sensory and affective levels.

13. This process enables patients to have a positive experience with hypnosis even if the sensation of pain does not significantly change. It also therapeutically opens the door to discuss the multiple ways pain has affected the individual.
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Jensen et al. (2006) empirically demonstrated that hypnosis provided beneficial side effects such as an increased sense of well being and decreased stress that were not the target of specific suggestions for hypnotic analgesia. The approach proposed in this article seeks to enhance such effects through purposeful suggestion. This approach builds upon neuroimaging studies, creates a shift in emphasis towards the affective dimension of pain, and makes more explicit what gifted clinicians have been doing and teaching. Ernest Rossi indicated over 20 years ago that, “state dependent memory, learning, and behavior processes encoded in the limbic-hypothalamic and closely related systems are the major transducers that bridge the Cartesian dichotomy between mind and body” (Rossi, 1986, p.203). While neuroimaging studies clarify the importance of the ACC in these processes, the therapeutic implication of these studies is to follow Erickson’s advice to, “discover their patterns of happiness” (Parsons-Fein, 2005). The therapeutic process suggested for doing so is not intended as a prescriptive recipe, with it recommended that one keep in mind Erickson’s further suggestion that “of course, every good cook must adjust the seasoning to suit their own particular taste” (Damann, In Zeig, 1980, p.200).

References


Feldman


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**Author Note**

Earlier versions of this paper were presented at the joint ASCH-SCEH Annual Meeting in Dallas in January 2007, and at the 10th International Erickson Congress in Phoenix in December 2007. I would like to thank the officers, and meeting program chairs for providing such positive venues in which to present the ideas further developed in this paper.