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The Use of a Skill-Based Activity in Therapeutic Induction

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This paper describes a hypnotherapeutic intervention for a brain damaged 36-year-old male who has suffered from asthma since infancy and seizure disorder from the age of eight. In early sessions it was discovered that conventional "passive-relaxation" induction techniques seemed to exacerbate certain disturbing somatic experiences, which he refers to as *scary feelings*. It was found that his performance of a previously learned skilled activity (the playing of the computer game Tetris) permitted the experience of a highly focused but relaxed state that was conducive to therapeutic interaction. This approach to induction bears similarity to "active-alert" procedures but may be more importantly related to Mihaly Csikszentmihalyi's principle of flow, in that it involves engagement in a subjectively meaningful, skill-based activity.

Introduction

The technique of establishing a context for hypnotherapeutic work through the use of suggestions for bodily relaxation has long been a cornerstone of hypnotherapy. In rare instances, however, this invitation to physical passivity and enhanced bodily awareness may be experienced as unwelcome, perhaps even threatening. This paper describes the case of a 36-year-old male, whose presenting somatic discomforts were noticeably heightened during inductions that made use of relaxation suggestions, and it recounts the use of an alternative "active" approach that involved his performance of an engrossing, skill-based computer task. This second approach appeared to produce a relaxed, focused, and attentive state, which provided a context for the introduction of therapeutic suggestions, and also resulted in a diminution of the observable tic-like movements, which appear to be correlates of his subjective disturbances.

Case History

This participant's asthmatic condition began at the age of 11 months and persisted throughout childhood, necessitating numerous emergency room visits. At the age of seven and then again at eight, he suffered generalized grand mal seizures. The second, more severe and prolonged event (*status epilepticus*) was accompanied by respiratory arrest. Soon after, he began to complain of "scary feelings" during

which he would have the terrifying impression that "someone was behind him," or "after him." Marked behavioral changes complicated the remainder of his childhood and early adulthood, and for several years masked the presence of a severe memory deficit. A full clinical report can be found in Broman, Rose, Hotson, and Casey (1997).

The participant is under the care of specialists for asthma and complex partial epilepsy and is medicated for both conditions. Although the scary feelings persist, they no longer evoke the palpable sense of terror they did in childhood. He has learned that despite their compelling nature, the scary feelings do not present any actual danger; he accepts them as unpleasant but transitory inner experiences that must be waited out. The origin of these disturbances is uncertain, but one possibility is that they represent low-level epileptic activity, which does not rise to full seizure status. I have witnessed a full-blown seizure episode that was preceded by a strikingly fearful facial expression and body posture. Another possibility is that the scary feelings, at least in their current status, constitute a set of involuntary responses and experiences that may be understood as the posttraumatic behavioral sequel of his organically based disorders.

The participant lives at home with his parents, as he is unable to work or live independently due to the severity of his combined disorders. His memory deficit, which is due to the bilateral hippocampal damage that was a consequence of his respiratory arrest, was not a target of this intervention. The therapy was intended to address his asthmatic discomfort and the aforementioned scary feelings as an adjunct to his continuing medical care.

Hypnotherapy Sessions

In previous nonclinical work, this individual participated in a number of experimental evaluations that characterized his learning and memory capabilities (Winter, 1995, 2001; Winter, Broman, Rose, & Reber, 2001). An influential theory that guides current memory research views the amnestic syndrome as involving deficits in the memory for personally experienced events (episodic memory) and general factual information (semantic memory), but not in the memory that is involved in skill-based or procedural tasks. The theory holds that these aspects of memory are thus functionally separable (Cohen & Squire, 1980; Gabrieli, 1998; Squire, 1992). In this connection, I implemented a series of evaluations that were designed to assess the preservation of skill-based learning and memory. One such evaluation tested his ability to acquire the skills necessary to play the popular computer game Tetris. Over 4 weekly sessions, his learning of Tetris was slower than that of a control group. This result may be due, at least in part, to the intact explicit memory for game-related strategies available to the control subjects, and perhaps also to the motoric sluggishness produced in the amnestic subject by anticonvulsant drugs. Nevertheless, he eventually gained an impressive facility at the game when later permitted unrestricted access to Tetris on his computer at home (Winter, 2000). His skill is sufficient to score 8,000 points or more per game, and I have witnessed him score over 13,000 points, a feat which requires extraordinarily rapid and precise manipulation of the computer keys. In contrast, my best efforts yield one or two thousand points. His proficiency at this task has become established despite the fact, as is typical of amnesics, he retains very little memory for any given gameplaying session.

While the acquisition of skill at Tetris does require dedicated effort over an extended period of time, it would appear to have little if any practical value. At the same time, however, the execution of a finely honed skilled behavior can confer a sense of mastery and control and provide intrinsic rewards. For the participant described here, the game of Tetris represents one of the few domains in life where he can experience any measure of mastery, accomplishment, or control. He takes obvious pride in the expertise that he worked so hard to acquire.

With respect to the hypnotherapeutic intervention, it was my general intention to exploit his acquisition of such an accomplished skill at Tetris to frame an expectation of success in gaining similar skill in controlling the effects of his somatic disturbances.

Procedures for addressing occasional labored breathing due to the asthmatic condition were adapted from Hammond (1990); for example, a procedure that involves clenching the fists upon inhaling, and unclenching the fists while releasing bodily tension upon exhaling was combined with a standard abdominal breathing exercise. We did thirty repetitions of this regimen before the induction narrative.

A component of the induction that was designed for the asthmatic discomfort was based upon the participant's statement that going to the beach in Florida (where his family had spent the winter) produces a sense of well-being and comfort. Suggestions for ease of breathing were based upon metaphoric reference to the ease of waves flowing in and out upon the shore. An excerpt:

> ...as you sit there I'd like you to close your eyes and imagine that you are on the beach in Florida sitting in a beach chair. You can picture that,can't you, sitting in the beach chair on the beach in Florida? And you can feel the warmth of the sun on your skin, and don't worry, you have plenty of sun block on. And the sun feels so warm on your skin, doesn't it, it makes your whole body feel so relaxed. You just can't help but to feel so relaxed. And sitting there on the beach with the sun so warm you can hear the waves coming in and landing on the shoreline. The waves come in to shore and they make that sound as they hit the beach and it's very pleasant and relaxing…and every time a wave comes in it makes you feel a little more relaxed, doesn't it, you can't help but feel more relaxed. The waves go in and out in a steady rhythm so effortlessly so easily like its slow breathing...in and out, very easy, so easy to breathe and relax. Just being on the beach you are there the whole day listening to the waves and the wind and it is so relaxing and so easy to breathe.

Across several sessions, the client seemed to gain little benefit from this approach. He was physically tense and distressed for the majority of the time and breathing was often labored. Periodically, he would inhale sharply and produce brief bodily spasms. At the conclusion of each session, when asked how he was feeling, he would say that he was having scary feelings throughout. I realized the need to address the scary feelings through trancework more directly. To start this exploration, I asked him to make a drawing of the scary feelings. At first he protested that the scary feelings could not actually be seen, that they were only feelings, but I convinced him to draw what they might look like if they could be seen, and also to write down what he would

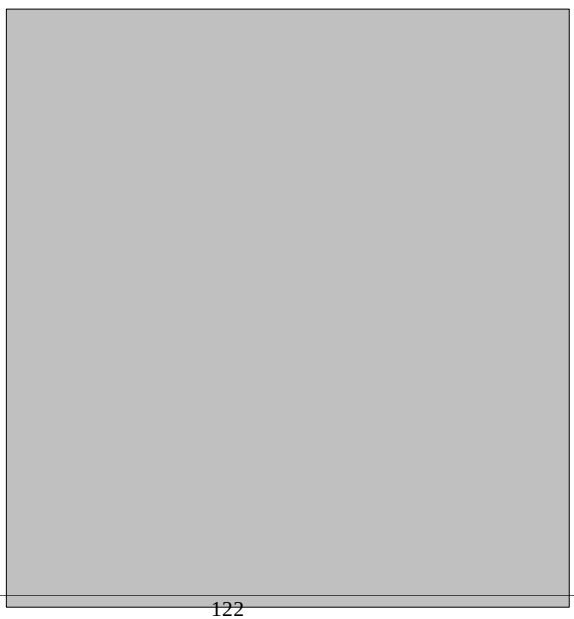
like to say to them (see Figure 1).

For the next several sessions I utilized a customization of the "inner movie screen" technique to help him visualize and objectify the scary feelings. A major modification was replacing the mental image of a conventional movie screen with that of a computer screen running Tetris, and to replace the conventional Tetris object-blocks with shapes representing the scary feelings. I suggested he visualize the scary feelings as lines that drop from the top of the screen to the bottom (just as the shapes do in Tetris), and that little scary feelings would be thin lines, and big scary feelings would be fat lines.

An excerpt:

> At first you didn't know how to play Tetris, because you never played it before and it seemed very hard to do. When those shapes came down from the top of the screen, it was hard to hit the right keys on the keyboard and to hit them fast enough. And then there were the different kinds of keys, the one to go left, the one to go right, the one to flip over and the fast down, it was so hard to know which one to press. And maybe part of you felt that you could never play this game**.** But then as you played it, another part of you seemed to get a sense of how to play, and in some way the game seemed to be less unfamiliar, some part of you knew which key to hit when you saw the shape coming down from the top of the screen and when to hit it. And then every time you played the game you seemed to know a little bit more, as if maybe your body was learning to play the game. In some ways it

Figure 1. The client produced this drawing when asked what the scary feelings looked like, and what he would say to them if he could.



seems impossible and yet it is true, isn't it, that you were able to learn Tetris and now you have become very, very good at it, haven't you? And you know it could be like the scary feelings... right now the scary feelings come and go as they please and you have no say in it or no control over that...and it seems impossible that you could do anything about them. But just like in Tetris something in you learned how to do the right thing, to play the game and control the shapes as they came down from the screen, you could also learn to control the scary feelings**.** The scary feelings could look like special Tetris shapes
— (He interjects) Like lightning bolts!
— Yes, that's right, like lightning bolts coming down from the top of the screen. There is a key on the keyboard that can make the line get thinner and thinner. Whenever you have a scary feeling the lines will show up on the screen and if they're little scary feelings they will be little lines, little lightning bolts, and if they are big scary feelings they will be big lines, big lightning bolts. When you see the scary feeling lines come down from the top of the screen, you can press the key and it will make the lines get thinner and thinner. A big scary feeling will start out as a big lightning bolt, but all you have to do is hit the key on the keyboard and you will see the big scary line getting thinner and thinner …and then it —poof— goes away altogether. And this happens just like you make the stacks of shapes disappear in Tetris.

At the end of one such session, he said that he felt "all right" in his typically noncommittal way. I had the impression that, despite my best efforts, he hadn't gone into very much of a trance at all, and that he was feeling uncomfortable. He had been breathing irregularly and in a labored way for much of the session. He said that he was having scary feelings throughout. He denied that that simply talking about seizures upset him, or had anything to do with the occurrence of the scary feelings.

It was clear that he was not experiencing the expected benefit of relaxation-based suggestions. In fact, it appeared that the trance inductions were only aggravating his experience of the symptoms. I considered the possibility that his life-long problematic relationship with his own body, which has so often betrayed him through the unpredictable onslaught of asthma, seizure, and scary feeling episodes, has created a condition in which any process that results in an enhancement of bodily awareness is interpreted as inherently threatening. He may experience the process of physical relaxation as the prelude to a less guarded state in which he is more vulnerable to sudden seizure or attack. His history of repeated organic trauma has produced a situation which may be likened to that of victims of physical abuse in the sense of the production of lingering posttraumatic emotional and physical consequences.

His discomfort during these "formal" inductions was in stark contrast to the alert but composed state that I have witnessed him achieve on numerous occasions while he was immersed in playing Tetris.

On the next session I decided it would be best if we just played Tetris. We started up the computer, and within a couple of games he was in high form, displaying some masterful playing skills. I decided to ask him point blank.

—Does playing Tetris put you in a trance?
—No.
—Well does it make you feel good and calm inside?
—A little.
—Does it help make the scary feelings go away?
—A little, while I'm playing it.

But observing him play for the next 40 minutes or so I was struck by the level of focus and engagement that he showed while playing, and by the notable diminution of heavy breathing and body tremors that accompany the scary feelings. As he played, I quietly spoke behind him, suggesting a connection between his control of the shapes in the Tetris game and his gradual learning of control of the scary feelings.

Conclusion and Discussion

The several severe asthmatic and two major epileptic episodes experienced by this individual during childhood constitute significant traumatic events by any standard. The scary feelings and their accompanying bodily movements appear to be, at least in part, acquired behavioral patterns that are similar to the reenactments or reexperiences of traumatic events that are frequently observed in posttraumatic symptomatology (Phillips & Frederick, 1995; Spiegel, 1986, 1994). Like posttraumatic patients, the appearance of the somatic disturbances may be occasioned by increased stress or a heightened awareness of the precipitating events. In this case, a focusing of attention on bodily processes, even in the context of a relaxation induction, seemed to exacerbate the experience of the somatic disturbances.

Active-alert induction modalities have been shown to be as effective as relaxation-based approaches in producing trance effects (Banyai & Hilgard, 1976; Clkurel & Gruzelier, 1990; Miller, Barabasz, & Barabasz, 1991). Tetris playing bears a similarity to an active-alert induction in that the participant is engaged in an overt activity. However, participants in the active group in the cited studies typically engage in such activities as exercise bike riding, but not in a task that depends critically upon the execution of previously mastered skills. The performance of complex, skilled behaviors is likely to have qualitatively different mental and emotional consequences than simple physical activity. Mihaly Csikszentmihalyi (Csikszentmihalyi 1990; Seligman & Csikszentmihalyi, 2000) has coined the term *flow* to refer to the highly focused, energized, and absorbing experience that is often produced during the performance of skilled or creative activity. The high degree of creative engagement experienced by a writer, painter, athlete, musician, or even car mechanic fully absorbed in his particular domain of expertise may be taken as examples of the concept.

The playing of Tetris produced a simulacrum of flow experience in the participant described here. Its use as an induction procedure thus had a two-pronged benefit: 1) it redirected his attention away from trauma-related awareness, and 2) allowed him to experience the positive affective and mental states that are associated with flow. However, an enduring therapeutic result would require that the flow-state experienced while playing Tetris generalize beyond the game-playing situation. That is, the goal of the induction was to permit him to reconnect with these positive experiences when challenged by his scary feelings. Unfortunately, the severe memory deficit of this individual proved to be an obstacle in this regard. From session to

session, he did not remember the relevance of his skill in Tetris to an attempt at lessening the effects of the scary feelings. Additionally, the assessment of improvement was complicated by his inability to self-report on the frequency of his scary feelings during the intervening week. Finally, the therapeutic relationship was terminated when the family moved permanently to their condominium in Florida.

Despite the lack of a clearly successful outcome in this case, I submit that the importance of this work resides in the utilization of a previously acquired skill and the resultant experience of flow as the basis for a trance induction. It follows that skills, talents, or special competencies possessed by a participant can be intentionally exploited by therapists for the psychologically laudatory effects they produce. For example, an induction may be built around a client's playing of a musical instrument, assemblage of a puzzle, engagement in finger-painting, or repair of a lawn-mower engine, depending upon the specific expertise of the client.

As detailed above, flow-based inductions may be seen as a category of active-alert inductions, and may hold unique therapeutic value because of the experience of psychic integration and well-being that they confer upon the participant. Flow-based inductions may hold special promise for the hypnotherapeutic treatment of posttraumatic symptoms, in that: 1) through redirection of attention, they occasion a "benign dissociation" from the source of traumatic experience (see Phillips & Frederick, 1995, for a discussion of using dissociation as a resource), and 2) they introduce a compelling experience of personal control and mastery into the therapeutic process, presaging the reintegrated state toward which the therapy is directed.

References

Banyai, E. I. & Hilgard, E. R. (1976). A comparison of active alert hypnotic induction with traditional relaxation hypnotic induction. *Journal of Abnormal Psychology, 85*, 218-224.

Broman, M., Rose, A. L., Hotson, G., & Casey, C. M. (1997). Severe anterograde amnesia with onset in childhood as a result of anoxic encephalopathy. *Brain, 120*, 417-433.

Clkurel, K. & Gruzelier, J. (1990). The effects of active alert hypnotic induction on lateral haptic processing. *British Journal of Experimental and Clinical Hypnosis, 11*, 17–25.

Cohen, N.J. & Squire, L. R. (1980). Preserved learning and retention of pattern analyzing skill in amnesia: Dissociation of knowing how and knowing that. *Science, 210*, 207-209

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper & Row.

Gabrieli, J.D.E. 1998. Cognitive neuroscience of human memory. *Annual Review of Psychology, 49*, 87-115.

Hammond, D. C. (1990). *Handbook of hypnotic suggestions and metaphors*. New York: W.W. Norton & Co.

Miller, M F., Barabasz, A. F., & Barabasz, M. (1991). Effects of active alert and relaxation hypnotic inductions on cold pressor pain. *Journal of Abnormal Psychology. 100*(2), 223-226.

Phillips, M. & Frederick, C. (1995). *Healing the divided self: Clinical and Ericksonian hypnotherapy for posttraumatic and dissociative conditions*. New York: W. W. Norton & Co.

Seligman, M. E. P. & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*, 5–15.

Spiegel, D. (1986). Dissociating damage. *American Journal of Clinical Hypnosis, 29*, 123-131.

Spiegel, D. (1994). *Dissociation: Culture, mind & body*. Washington, DC: American Psychiatric Press.

Squire, L. R. (1992). Memory and the hippocampus: A synthesis from findings with rats, monkeys and humans. *Psychological Review, 99,* 195-231.

Winter, W.E. (1995) *Implicit and explicit cognitive functioning in hippocampal amnesia*. Unpublished doctoral dissertation: City University of New York

Winter, W. E. (2001). *The acquisition of expertise on a difficult perceptual-motor task by an amnesic patient.* Manuscript submitted for publication.

Winter, W. E., Broman, M., Rose, A. L. & Reber, A. S. (2001). The assessment of cognitive procedural learning in amnesia: Why the tower of Hanoi has fallen down. *Brain and Cognition. 45*, 79-96.

Appendix A - Tetris

Tetris requires a player to manipulate differently shaped objects as they appear to “fall” from the top of the computer screen. The task is to rotate or reposition the falling objects so that they are arranged as compactly as possible at the bottom of the screen. The placement of each object gains the player a certain number of points. The game is ended when the stack of objects reaches the top of the screen. This endgame can be delayed, however, by stacking the objects so that they fill a complete row across the screen, leaving no open spaces. This results in the removal of that row, providing more space for the stacking of objects, and hence more opportunity for point accumulation. The scores for each game are automatically recorded.