

## SPECIAL ISSUE

# Developing Acceptance with the Help of Sensors— “Embracing the Me That I Can See”

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*How can patients be better facilitated in their efforts to transition towards a mindful, nonjudgmental attitude? While much research suggests that this is a crucial milestone on the road to recovery, clinical experience has shown that clients often resist embracing this new attitude toward their symptoms, thus making mindfulness-based interventions difficult or even impossible to implement for certain client groups. This article proposes that the adoption of mindfulness skills can be greatly expedited by using psychophysiological sensors. David Barlow’s Unified Protocol is used as a model for illustrating that a mindfulness-based intervention can serve as the basis for a further integrative approach, combining the Unified Protocol, psychophysiological sensors, and acceptance training, ultimately providing the best of all three worlds. It is proposed that psychophysiological sensors are a natural teaching and demonstration tool for mindfulness skills, both quickening the learning process and providing the therapist and client with instrumental measures that enrich the pool of information available to them. The way in which sensor enhanced mindfulness training can be construed as a form of “exposure to the other,” thus leading to emotional self-regulation, is discussed. This paper is presented as part of an ongoing project to advance the more general therapeutic approach termed sensor-enhanced therapy, which aims to enhance various existing therapies with psychophysiological sensors.*

The need for patients to become observers of their inner states before developing affect tolerance has long been discussed (e.g., Krystal, 1988). This position is most fervently maintained by therapy models that focus on acceptance rather than the need for change. Siegel (2012), in describing future directions for successful therapeutic outcome, suggests that the objective domains of science and the subjective domains of human knowing must be integrated. Schore argues that it is the sympathetic and parasympathetic functions of the autonomic nervous

system (ANS) that represent the somatic components of all emotional states. Yet, the information provided by the body is typically attended to only for the sake of symptom assessment, disregarding the fact that its activity can function as a therapeutic resource in sessions.

Psychophysiological sensors (PPSs) refer to electrophysiological measures such as electrodermal activity (EDA), skin temperature, electromyography (EMG), measures of breathing pattern (e.g., capnometry), heart rate, and heart rate variability (HRV). PPSs can monitor, record, and display activity of the ANS. The assertion herein is that sensor-enhanced psychotherapy (SET; i.e., therapy that incorporates PPSs) can assist patients in becoming observers of their inner world and help pave the way for acceptance and ultimately improve self-regulation. Currently, these measures are mainly used in the context of biofeedback, and are rarely used in psychotherapy.

The benefits of integrating biofeedback and psychotherapy have been described in the context of psychodynamic therapy (Rolnick & Rickles, 2010) and cognitive behavioral therapy (Hamiel & Rolnick, 2016). Whereas much of psychotherapy has previously focused on changing a subject’s perception, behavior, and ultimately emotion, the field is now stressing the importance of mindfulness, or nonjudgmental observation, and acceptance (Hayes, Follette, & Linehan 2004).

Khazan (2013) has discussed how mindfulness strategies can enhance biofeedback therapy. The current paper expands on this, in describing how mindfulness and acceptance can be facilitated using PPSs. The need to assist patients with these skills was indicated by Farias and Wikholm (2015), who discussed the possibility that mindfulness is not a suitable strategy for certain populations. Similarly, Crane and Williams (2010) raised the need to identify correlates of attrition from mindfulness training. It is our contention that mindfulness interventions accompanied by the use of psychophysiological measures may be a more effective approach.

The transition from pursuing change to cultivating acceptance is a significant one for a patient who wants to stop suffering. Proposing that symptoms are to be accepted will likely be a far cry from what is expected when one seeks the help of a therapist. The combination of Barlow's Unified Protocol (UP) with sensor-enhanced therapy (SET) can facilitate greater cooperation with mindfulness, as it eases the difficult conceptual transition and provides a platform that greatly assists the development of this skill.

The Unified Protocol (Barlow, Allen, & Choate, 2004) is a short-term, cross-diagnostic, empirically tested treatment method that is used in the treatment of various clinical disorders (Farchione, 2012). As is typically the case in third-wave cognitive behavioral therapy methods (e.g., mindfulness-based stress reduction, mindfulness-based cognitive therapy, dialectical behavioral therapy, and acceptance and commitment therapy), the UP incorporates mindfulness and acceptance as integral and central skills, upon which other strategies and interventions in the protocol rely.

The UP consists of an introductory module and eight main modules through which the client proceeds in a linear fashion. The discussion herein pertains mainly to the introductory, second, and third modules, which discuss the concept of nonjudgmental attention and acceptance. However, as Barlow explains, the entire unified protocol, including cognitive interventions, in vivo, and imaginary exposures, depends on the client's ability to attend to internal experience in an accepting manner.

In the following sections, we will describe several key contributions that may be made with the SET approach to therapy in general, and the Unified Protocol in particular:

1. Objective recording of physiological correlates of emotion.
2. Ability for client and therapist to join together in the observations of client's inner state.
3. Objective demonstration that struggle and resistance create suffering.
4. Demonstration of the transient nature of sensations.
5. Interaction between initial sensations and our reactions to them.
6. Utilization in exposure.

The UP posits that acceptance is the key to changing pathology. Relaxation exercises are explicitly prohibited in the UP, as relaxation is seen as an attempt to reduce the intensity of an uncomfortable emotion, to make it "go away," rather than accept it. Instead, the UP aims to train acceptance by asking the client to mindfully notice when his or her emotion reaches a peak, to "sit there, notice your

thoughts, your emotions, what you feel. Just notice and don't do anything, it will subside naturally" (Barlow et al., 2004).

The introductory module of the UP distinguishes between "subjective experiencing" and "objective experiencing." The former is well understood as a situation in which an emotion arises and a reaction ensues. Awareness of any ability to pause and choose a response is negligible—we simply act. Subjective experiencing is also laden with judgments: of others, of our experience, of our actions. Barlow considers these judgments as a key reason for getting carried away with emotion. Objective experiencing occurs when we are aware of our actions and refrain from judgment. We may still react, but we are conscious of the process that is occurring and engage in observances such as "I am angry" or "I am lashing out in anger" as opposed to "I shouldn't be angry" or "I am terrible for lashing out."

Therefore, objective experiencing is clearly a building block for mindfulness. Barlow compliments the mindfulness approach with Western scientific discourse and instructs therapists to encourage patients to be "good scientist[s]" and study themselves, their thoughts, emotions, sensations and reactions, as they would study any object for its inherent properties. Moreover, Barlow asks patients to perform experiments, gradually and systematically, to try out new situations and behaviors, thereby learning more about themselves, becoming more resilient in the face of difficult emotions, and going beyond current abilities to regulate those emotions. This scientific attitude is an important ingredient for later modules and skills presented in the UP.

The caveat with this approach, however, is that this mental note-taking is not exactly "objective." Stress levels can be subjectively measured on a numeric scale (e.g., subjective units of distress) or by comparing the client's ability to perform increasingly difficult tasks as treatment progresses. Such measures are inherently inaccurate and unreliable, quite often relying on the therapist's recollection. At this point, PPSs can play an important role. By utilizing PPSs, experiences such as stress, energy levels, muscle tension, and other constituents of emotional response, can be objectively recorded. The client's reaction to different stimuli is recorded and can be compared across sessions. Using PPSs, a full and detailed record of the client's progress throughout the course of therapy is obtained, providing a complete, measurable, high-resolution archive of reactions across interventions.

Furthermore, the patient can now join the therapist in observing his or her physiological responses displayed on a screen. For what is likely to be the first time in the patient's

life, his or her inner sensations are exposed, moment-to-moment, revealed to the therapist, and confront the patient. As patients bear witness to their inner sensations, which have become objectified in the shared space, a realization that they are an active witness occurs to them. There is then a reaction to noticing this and a response to noticing the reaction, so it continues in an endless cycle.

The Unified Protocol and mindfulness both place greater emphasis on the way emotions and reactions are managed rather than on the emotions and reactions themselves. In meditation practice, it takes a long time to learn to separate initial sensations and subsequent reactions (referred to as primary and secondary emotions in the UP). With the use of sensors, however, this usually hidden feedback cycle is revealed and the patient learns that aversive reactions and attempts to suppress experience only serve to heighten distress. Similarly, negative judgments about the unpleasant experience merely lead to further unpleasantness. The concept of acceptance is transformed from a theoretical concept, cerebrally understood, to an experiential event that becomes central to the patients' wellbeing. If the patients resist and/or attempt to suppress present experience, they will suffer and they will objectively see this suffering (e.g., skin conductance graph going up). If the patients accept the present experience, let go of the struggle, and allow themselves to feel what they are feeling, they will have an opportunity to experience a different physiological response arising and gradually relax, allowing the difficulty of the experience to subside naturally.

Moreover, sensors allow patients to connect with the transient nature of sensations. In meditation it may be difficult to remember clearly the intensity of sensations throughout the practice. With PPSs however, the patient has access to a continuous monitoring of the appearance and disappearance of sensations in real time and is able to track and gauge where they started, where they were a few seconds ago, and where they are now. In this way, the patient becomes an objective yet involved witness to his or her own inner state. Patients can observe how well they achieve regulation and their rate of improvement. They are repeatedly presented with the fact that continuous change is the only constant in the mind and body, that there is no fixed state but only experiences that come and go.

Patients can also observe the interaction of primary and secondary reactions by being exposed to the effects that secondary judgments have on maintaining the cycle of stress. Attention splits, on the one hand observing, measuring, and remembering; on the other hand, experiencing. This helps create emotional distance between the self and the dysfunctional physiology. That is, the divided attention allows for

the patient to develop a healthy distance from an unpleasant inner state while still fully experiencing it. In meditation the focus, or "anchor," may be the breath, while the sensations, emotions, and thoughts that arise are observed. In SET, the graph serves as a powerful anchor and patients can transition to an intently focused state when told to "follow the point at the end of the graph . . . when it goes up, watch it go up . . . when it goes down, notice that it goes down." The patients can then compare the changes on the graph to their own internal experience.

The therapy session itself can also act as a context for exposure or "exposure to the other," as suggested by Wachtel (2008). The role of the "other" in the process of self-regulation has been addressed, originally by Winicott (1971), later by Bollas (1987), and more recently by Levit Binnun, Golland, Davidovitch, and Rolnick (2010), whereby anxiety is perceived to be a function of poor ability to self-regulate, a capacity that routinely develops through infancy via interaction with primary caregivers. In her biosocial theory, Linehan (1993), asserts that individuals with emotional disorders have more difficulty modulating the intensity of their emotions and that pathology forms when parents fail to teach children how to label and regulate arousal, and how to tolerate emotional distress. Therapy conducted with biofeedback provides an opportunity to receive validation and empathy in the context of acquiring the capacity to self-regulate.

In classical Rogerian and psychodynamic models, acceptance is learned and internalized via identification with the response of a significant other. In SET, the therapist reacts calmly and with acceptance when the client is exposed as fearful, anxious, shamed, or hopeless. As therapist and client observe physiological responses, the therapist can assist in the labeling of the experience and go a step further in explaining emotional arousal. The therapist can also offer an explanation of the process that produces arousal, and then continue to teach self-regulation.

In addition to addressing the concept of exposure to the other, the session can simulate behavioral exposure. A key feature in certain anxiety disorders is a fear that other people will observe the presence of anxiety symptoms. For instance, in social anxiety disorder, the fear of embarrassment is focused on certain aspects of self-presentation such as blushing or sweating, and in panic disorder, there is a strong fear that others will be able to observe that a panic attack is occurring. In other situations, people feel shame at the idea that their anxiety will be noticeable, for example, in performance situations such as presentations and in sexual activity. Self-focused attention is heightened during such experiences of anxiety and this increased attention to

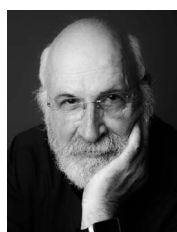
symptoms serves to intensify arousal. The person then develops anxiety about experiencing anxiety.

The example of blushing lends itself well to conceptualizing how SET can enhance treatment for anxiety disorders, as the situation in which a client is distressed by another person seeing their stress response is simulated in a SET session. When clients are connected to one or more peripheral physiological parameters (e.g., EDA, EMG, skin temperature, heart rate), the moment they notice the therapist becoming aware of a change in their physiology, an increase in stress is likely to occur. There is a strong parallel between blushing and the experience of biofeedback because in both situations, the client is aware that their internal reaction is observable. This is a unique type of exposure that traditional exposure-based therapies cannot create as easily, if at all. As is typical of exposure, this situation allows the patient to face their fear, and the process acts to attenuate this fear such that the patient comes to learn and accept that they can survive the shame/embarrassment/discomfort.

The potential advantages that SET has to offer in facilitating mindfulness interventions and cultivating acceptance of ANS activity is discernible. Additionally, it stands to reason that SET in exposure sessions will likely be invaluable. Clinical applications and experimental testing are strongly encouraged to further establish this approach in the field of treatment.

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