

BIOFEEDBACK FROM AN OTHER PERSPECTIVE

What Was Missing from Our Classic Psychophysiological Profile? Was It the Therapist?

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This column focuses on the role of the other in biofeedback and psychophysiological therapy. Our previous paper presented our conviction that an intersubjective point of view that focuses on the interaction between the therapist and the client is very much needed here. In fact, the founders of our field were highly attuned to psychodynamic thinking. Neal Miller, for example, attempted to integrate Freudian concepts into learning processes (Rolnick & Rickles 2010). Adler and Adler (1989), other pioneers in this field, also incorporated the psychodynamic approach to biofeedback.

There is now ample evidence of the role of the other in interpersonal regulation. This means that humans can regulate each other's inner states and behaviors. Cornejo, Cuadros, Morales, and Paredes (2017) suggested that interpersonal coordination should be defined as (a) a social phenomenon involving two or more persons; (b) involving simultaneous, face-to-face interaction (i.e., requiring the actual presence of another person); and (c) emerging rapidly (within a short timeframe) and spontaneously (without conscious control or intention). We propose perceiving the biofeedback setting as an example of interpersonal regulation that can be evaluated via sensors. Can one person regulate the autonomic system of the other without any verbal interaction? In our first column, we cited Porges (2017) who claimed that the parasympathetic system is designed to detect and react to the facial expressions of the other.

Dimberg and Paterson (2000) showed that when subjects were exposed to pictures of happy and angry faces, facial electromyographic (EMG) activity from the zygomatic major and the corrugator supercilii muscle regions was detected from the left and right sides of the face. The subjects reacted to happy faces with a spontaneous, rapid increase in zygomatic EMG activity, and to angry faces with increased corrugator EMG activity. Can the therapist's facial expressions affect the client's psychophysiological reactions? And what about the therapist's voice intonation?

It is possible that the mere presence of the therapist can affect physiological readings?

Our colleagues in Israel, Golland et al. (2015), explored this question. They studied whether the convergence of physiological and emotional states can occur among “merely co-present” individuals, without direct interactional exchanges. They found that the autonomic signals of co-present participants were idiosyncratically synchronized, and that the degree of this synchronization correlated with the convergence of their emotional responses.

In this column, we suggest adding stimuli that represent social situations to our classic psychophysiological assessment or profile and using these stimuli to investigate the characteristics of the client's interpersonal reactions.

The Psychophysiological Stress Profile

The triggers that compose the psychophysiological profile are generally linked to known stress situations. The client's reactions to these triggers can be used to evaluate how his body reacts to stress.

Moss, McGrady, Davies, and Wickramasekera (2003) cited Wickramskara (1988) who divided the protocol into the following stages: (a) baseline condition, (b) relaxation, (c) stress conditions, and (d) recovery. He used mental math for the first stress trial, and visualization of a stressful situation for the second stress trial. The third stress trial consisted of hyperventilation or any another “challenge.” Khazan (2013) distinguished between the stress profile and the relaxation profile. The stress profile consists of four stressors, namely mental arithmetic, noise, color words task, and stressful event recall. The duration of each stressor is 2 minutes, with a baseline and breaks between stressor presentations. Khazan's relaxation profile consisted of various relaxation techniques that she delivered within specific time limitations. The assumption is that this profile might inform the therapist as to which technique will produce a better response from the client.

Danger and Safety Trials

We will propose various interpersonal trials based on the ideas presented above and on the basic components of social engagement. Porges (2017) broke down the attributes of the social engagement system into looking, listening, and witnessing. Each of these attributes both projects bodily feelings and serves as a portal for the other's bodily feelings. By looking and listening, we can sense whether the other is welcoming or disinterested. Porges went on to postulate that:

...feeling and witnessing the client encompasses the therapist's bodily reaction to the client's engagement behavior and the projection of the bodily feelings embedded in the therapist's reciprocal engagement behavior... The evolutionary processes that linked physiological state to the circuits that produce (e.g., facial expressions, vocalizations) and detect (e.g., sounds, tastes) features of emotion is a defining feature of mammals. Functionally, this integrated connection between bodily state and facial and vocal expressions enabled conspecifics to distinguish those expressing cues of safety from those expressing cues of danger. (pp. 47–48)

According to Porges' (2017) conceptualization, the interpersonal psychophysiological profile (IPPP) includes looking, listening and witnessing trials. A danger IPPP uses stress trials designed to elicit a sense of danger. A safety IPPP might include looking, listening, and witnessing trials designed to elicit feelings of safety while alluding to Khazan's relaxation profile (Khazan, 2013). Below are several examples of such trials:

- Looking stress trials may involve a harsh or contemptuous look (Eckman & Friesen, 1986). Contempt is known to be one of the "four horsemen" of the interpersonal apocalypse (Gottman & Levenson, 2000). This emotion is facially defined by tightening of the features and raising the corner of the lip unilaterally (Eckman & Friesen, 1986). An example of a safety trial can be a photo of a loved one.
- Witnessing stress trials may involve use of a still face. The still face is known to evoke distressed feelings in babies, as measured by known psychophysiological modalities (Ham & Tronick, 2006). A safety trial in this case may be a warm and empathic face.
- Listening stress trials can include shouting, or a recording of a crying baby, though the therapist may prefer to use his own voice. While a sharp grating or commanding tone used by the therapist is an example of a stress trial, a

soft and gentle tone can serve as a safety trial. Another example of a safety trial can be a recording of the voice of the client's child or spouse.

Stress and safety profiles based on Porges' (2017) social engagement system may include touch as well. A baby cuddled in his mother's arms feels safe by the mother's touch. Dyadic models of therapy such as Theraplay use touch to reestablish parent-child secure attachment (Booth, 2009). We can consider mother-touch trials for children whose referral issue is school refusal, separation anxiety, etc. These conditions may allude to an interpersonal background that can be illuminated by touch trials.

From Basic to Intimate Connection

Interpersonal relationships vary in their levels of intimacy and sharing. Porges' (2017) conceptualization focused on the building blocks of social engagement. The next levels of interpersonal relationships are established on sharing. Sharing personal information and self-disclosure, though necessary for further promotion of interpersonal relationship, necessitates a degree of safety. However, it also entails the danger of being rejected, ridiculed, or embarrassed.

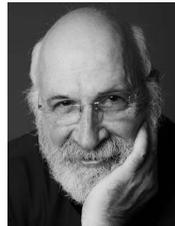
Embarrassment is a socially conditioned, painful emotional state. Its notable physiological signs are blushing and sweating. It is assumed that embarrassment involves sympathetic activation (Gerlach, Wilhelm, & Roth, 2003). The authors of this column have developed a somewhat more provocative stimulus. We ask the client if he or she is ready for an embarrassing question. We never actually ask the question, but the client's emotional and psychophysiological reaction is usually significantly greater in this case than for other stressors in the protocol. We believe that this occurs because embarrassment is an interpersonal stimulus that relates to the here and now of the session.

The embarrassing question trial promotes the therapist's understanding of the client's socially conditioned responses and readiness for self-disclosure. Its value for pre-interventional assessment in cases of social anxiety, fear of intimacy, and attachment difficulties is clear. This understanding might help the therapist psycho-educate clients about the role of shame or embarrassment in their lives and about how this affects their body and thus their social behavior.

We would like to encourage our colleagues to discuss the concept of interpersonal psychophysiological assessment and to consider the possibility of its further development.

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