

Panic, Biology, and Reason: Giving the Body Its Due

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The Substitute Tiger

My interest in the essential role played by bodily responses in the genesis and treatment of traumatic stress and panic anxiety began quite accidentally in 1969 (Levine, 1997). A psychiatrist knowing of my interest in “mind/body healing”—a fledging arena at the time, had referred a young woman to see me. Nancy had been suffering from panic attacks for about two years. She had not responded to psychotherapy, while tranquilizers and antidepressant drugs gave her only minimal relief. The referring psychiatrist asked me to do some “relaxation training” with her. My attempts were equally unsuccessful. She resisted; I tried harder. We got nowhere. Since I knew almost nothing about panic attacks at the time, I asked her for more detailed information about the ‘how and when’ of her attacks. Nancy revealed that the onset of her first attack occurred while she, along with a group of other students, was taking the Graduate Record Examination. She remembers breaking out in a cold sweat and beginning to shake. Forcing herself to complete the test, Nancy then ran out, frantically pacing the streets for hours, afraid to enter a bus or taxi. Fortunately, she met a friend who took her home. During the following two years her symptoms worsened and became more frequent. Eventually she was unable to leave her house alone and could not follow through with graduate school even though she had passed the exam and was accepted by a major university.

In our conversation, Nancy recollected the following sequence of events: Arriving early, she went to the cafe to have a coffee and smoke a cigarette. A group of students were already there, talking about how difficult the test was. Nancy, overhearing this, became agitated, lit another cigarette, and gulped a second and third coffee. She remembered feeling quite jittery upon entering the room. She recalled that the exams and marking pencils were passed out and that she wrote vigorously. She became almost

breathless at this point and quite agitated—I noticed that her carotid (neck) pulse was increasing rapidly.

I asked Nancy to lie down and I tried to get her to relax. “Relaxation” was not the answer. As I naively, and with the best of intentions, attempted to help her relax, she went into a full-blown anxiety attack. Her heartbeat accelerated further to about 150 beats per minute. Her breathing and pulse rate then started to decrease. I was relieved, but only momentarily. Her pulse continued to drop, precipitously to around 50 beats per minute; she became still. Her face paled and her hands began to tremble: “I’m real scared...stiff all over...I’m dying...I can’t move...I don’t want to die...help me...don’t let my die.” She continued to stiffen, her throat becoming so tight that she could barely speak. Nancy forced the words, “Why can’t I understand this...I feel so inferior, like I’m being punished...there’s something wrong with me...I feel like I’m going to be killed...there’s nothing...it’s just blank.” (We had rather unfortunately co-discovered, some years before it was reported in the literature, “relaxation-induced panic syndrome.”)

The session continued as follows:

“Feel the pencil,” I requested without really knowing why.

“I remember now. I remember what I thought,” she replied. “*My life depends on this exam.*” Her heart rate increased now, moving back up into the eighties.

At this point, a ‘dream image’ of a crouching tiger jumping through the bush flashed before me. Quite startled, a fleeting thought about a zoological article I had recently read on “tonic immobility” or “death feigning” prompted me to announce loudly: “You are being attacked by a large tiger. See the tiger as it comes at you. Run toward those rocks, climb them, and escape!”

Nancy let out a blood-curdling yell—a shout that brought in a passing policeman (Fortunately my office partner took care of the situation—perhaps explaining that I was doing “relaxation training”). She began to tremble, shake, and sob in waves of full body convulsions. I sat with her for almost an hour while she continued to shake. She recalled terrifying images and feelings from age four. She had been held down by doctors and nurses and struggled in vain during a tonsillectomy with ether anesthesia. She left the session feeling “like she had herself again.” We continued relaxation, including assertion training, for a couple more sessions. She was taken off medication, entered graduate

school, and completed her doctorate in physiology without relapse. However, I realized that this was just the beginning in developing a systematic and safe (leaving much less to chance) approach to the healing and prevention of trauma¹.

The Body Has Its' Reasons...

Aaron Beck and Gary Emery, in their seminal book, *Anxiety Disorders and Phobias*, (1985, p.188) make the point that to understand fear, anxiety, and panic, the person's *appraisal* of a situation is most important. In the chapter, "Turning Anxiety on Its Head," the authors consider cognitive appraisal to be the critical fulcrum in anxiety reactions. They argue that because anxiety has a strong somatic-emotional component, the subtler cognitive processing which occurs may be neglected both in theory and in clinical practice. Clearly Nancy's *belief* of the difficulty of the exam—based in part on the overheard conversation in the café—lead to her thought: "my life depends on this," an unconscious threat appraisal. By focusing narrowly on the cognitive aspects of anxiety, however, Beck and Emery overlook the fundamental role played by bodily responses and sensations in the experience of anxiety. When Nancy drank the coffee and smoked the cigarette (caffeine and nicotine, together, can be a robust stimulant), the physiological arousal of increased heart rate—both fed into and was fed by her cognitive assessment of the "threat" from the exam driving her heart rate sharply up. Together, both assessment and physiological activation resonated with the 'imprinted' bodily reaction of being terrorized and overwhelmed, twenty years before, during the tonsillectomy. The Panic attack, I believe, was triggered from that tripartite synergy.

In addition to recognizing the importance of cognitive factors, systematic study of bodily reactions and sensate experience is not only important, it is *essential*. This study needs to occur conjointly with the recognition and exploration of cognitive and perceptual factors. Appreciating the role of bodily experience illuminates the complex web called "anxiety" and connects many threads in understanding and modifying its physiological and experiential basis. In addition to turning anxiety on its head, we need also to *connect* the body with the head—recognizing the intrinsic psycho-physiological unity that welds body and mind.

Cognitive theorists believe that anxiety serves primarily to signal the brain to activate a physical response that will dispel the source of anxiety. The role of anxiety is likened in this way to that of pain. The experience of pain impels us to do something to stop it. The pain is not the disease. It is merely a symptom of fracture, appendicitis and so forth. Similarly, according to Beck, anxiety is not the disease but only a signal: “Humans are constructed in such a way as to ascribe great significance to the experience of anxiety so that we will be impelled to take measures to reduce it.” He notes that: “The most primal response depends on the generation of unpleasant subjective sensations that prompt a *volitional* intentional action designed to reduce danger. Only one experience of ‘anxiety’ is necessary to do this” (Beck, 1986 p.188) (*italics is my emphasis*). As examples Beck mentions the arousal of anxiety when a driver feels that he is not in complete control of the car and which prompts him to reduce his speed until he again feels in control. Similarly, a person approaching a high cliff retreats because of the anxiety.

What is the wisdom of an *involuntary*, primitive, global, somatic, and often immobilizing, brainstem-mediated, response? (Gallup & Maser, 1977) Is it exclusively for calling the individual’s attention to making varied and specific *voluntary* responses? Such an inefficient arrangement seems highly doubtful. A lack of refinement in appreciating the essential nuances played by bodily responses and sensations in the structures and experience of anxiety is typical of cognitive approaches. Beck, for example, flatly states that: “a specific combination of autonomic and motor patterns will be used for escape, a different combination for freezing, and a still different pattern for fainting. However, the subjective sensation—*anxiety*—will be approximately the same for each strategy.” In the following paragraph of this same article he adds: “An active coping set is generally associated with sympathetic nervous system dominance, whereas a passive set, triggered by what is perceived as an overwhelming threat, is often associated with parasympathetic dominance. . . as in a blood phobic. In either case the subjective experience of anxiety is similar” (Beck, 1986 p.188).

Beck’s statements reveal a significant glitch in the cognitive phenomenology of anxiety, highlighting its paradoxical nature. According to his reasoning, the same body signal is relayed to the brain’s cognitive structures for all forms of threat. The “head”

(cognitive) structures are then somehow expected to decide on an appropriate course of action. This top-heavy, Cartesian holdover goes against the basic biological requirements for an immediate, precise, and unequivocal response to threat. It is a view that is quite confusing because it requires that distinctly different kinesthetic, proprioceptive, visceral and autonomic feedback be experienced as the same signal. We have tended, in the post-Cartesian view of the world, to identify so much with the rational mind that the wider role of instinctive, bodily responses in orchestrating and propelling behavior and consciousness has been all but ignored.

Beck's statement that "a specific combination of autonomic and motor patterns will be used for escape, a different combination for freezing, and a still different pattern for fainting" and that "the subjective sensation—*anxiety*—will be approximately the same for each strategy" contradicts both evolutionary imperative and subjective experience. As one working for nearly forty years in what is now called somatic psychology, these statements simply do not fit the *subjective facts* and would have had William James turning over in his grave. If you ask several anxious people at random what they are feeling, they may all *say* that they are feeling "anxiety." However, if they are then queried with the epistemological question: "How do you *know* that you are feeling anxiety," you will get several different responses. One, for example, could be, "because something bad will happen to me." Another, that they are feeling strangulated in their throat; still another that their heart is leaping out of their chest; another that they have a knot in their gut. Other people might report that their neck, shoulders, arms, and legs are tight; others might feel ready for action, and still others that their legs feel weak or their chest collapsed. All but the first answer are specific and varied *physical* sensations. And if the person who said what he thought ("...like something bad will happen to me,") was directed to a scan of her body, she would have discovered some *somatic/physical* sensation driving and directing the thought.

If we feel threatened and assess that we can escape or fight back, we will feel one set of physical sensations. If, on the other hand, we feel threatened and perceive that we cannot escape or fight back then we feel something quite different. Now here is the key factor: both the assessment of danger and the perception of our capacity to respond are not primarily conscious. Let's look to our distant ancestors to illuminate these questions.

Instinct in the Age of Reason

Animals possess a variety of orientation and defensive responses that allows them to respond automatically to different, potentially dangerous situations rapidly and fluidly. The sensations we feel involving escape are profoundly different from those of freezing or collapse. I am in agreement with Beck, in describing panic and post-traumatic anxiety states as having in common “the experience of dread with the perception of inescapability.” What I first gleaned from Nancy thirty-five years ago, and later confirmed by the ethological analysis of predator prey behaviors, was that the singular experience of ‘traumatic panic anxiety’ that Beck talks about occurs *only* where the normally varied and active defensive responses have been unsuccessful, that is, when a situation is *both* dangerous and inescapable (Beck, 1986). Anxiety, in its pathological panic form (as distinguished from so-called signal anxiety), represents a profound failure of the organism’s innate defensive structures to mobilize and thus allow the individual to escape threatening situations actively and successfully. Where escape is possible, the organism responds with an active pattern of coping. There is the *continuous experience* of danger, running, and escape. When, in an activated state, escape is successfully completed, anxiety does not occur. Rather a fluid (felt) sense of “biological competency” is experienced. Where defensive behaviors are unsuccessful in actively resolving severe threat, anxiety is generated. It is where active forms of defensive response are aborted and (therefore incomplete) that anxiety states ensue. *Beneath the Monolithic label of anxiety are ‘camouflaged’ a wealth of incomplete and identifiable somatic responses, sensations, and bodily feelings.* These body experiences represent the individual’s response to past experience, but also to their “genetic potential” in the form of unrealized defensive responses. The recognition that these instinctive orientation and defensive behaviors are organized motor patterns. They are prepared that is, prepared motor acts, helps to return the body to the head. Anxiety derives ultimately from a failure to complete motor acts.

Jean Genet, in his autobiographical novel, *Thief’s Journal*, states this premise in bold prose: “Acts must be carried through to their completion. Whatever their point of departure, the end will be beautiful. It is (only) because an action has not been completed

that it is vile.” When orienting and defensive behaviors are carried out smoothly and effectively, anxiety is not generated. Instead, there is the complex and fluid sensate experience perceived as curiosity, attraction, or avoidance. It is only when these instinctive orientation and defensive resources are interfered with (‘thwarted’) that the experience of anxiety is generated: I am not afraid of snakes or spiders, but of my inability to respond effectively to these creatures. Ultimately, we have only one fear, the fear of not being able to cope, of our own un-copability. Without active, available, defensive responses, we are unable to deal effectively with danger and so we are, proportionately, anxious.

Tonic Immobility-Freezing

Anxiety has often been linked to the physiology and experience of flight. Analyses of animal distress behaviors suggest that this may be quite misleading. Ethology (the study of animals in their natural environment) points to the “thwarting” of escape as the root of distress-anxiety (Salzen, 1967 and Morris, 1969). When attacked by a cheetah on the African plains, an antelope will first attempt to escape through directed-oriented running. If, however, the fleeing animal is cornered so that escape is diminished, it may run blindly, without a directed orientation, or it may even attempt to fight wildly and desperately against enormous odds. At the moment of physical contact, often before injury is actually inflicted, the antelope abruptly appears to go dead. It not only appears dead, but its autonomic physiology undergoes a widespread alteration and reorganization. The antelope is in fact highly activated internally, even though outward movement is almost nonexistent. Prey animals are immobilized in a sustained (cataleptic-catatonic) pattern of neuromuscular activity and high autonomic and brain wave activity (Gallup & Maser, 1977 p.345). Sympathetic and parasympathetic responses are also concurrently activated, like brake and accelerator, working against each other (Gelhorn, 1967 and Levine, 1986 pp.331-54).

Nancy, in her re-experiencing of the examination room, exhibited this pattern when her heart rate increased sharply and then plummeted abruptly to a very low rate. In tonic immobility, an animal is either frozen stiff in heightened contraction of agonist and antagonist muscle group, or in a continuously balanced hypotonic muscular state

exhibiting what is called “wavy flexibility.” In the hypotonic state, body positions can be molded like clay, as is seen in catatonic schizophrenics. There is also analgesic numbing (Gallup & Maser, 1977 p.337). Nancy described many of these behaviors as they were happening to her. She wasn’t, however, aware of her physical sensations but rather of her self-depreciating and critical judgments about those sensations. It is as though some explanation must be found for profoundly disorganizing forces underlying one’s own perceived inadequacy. Psychologist Paul G. Zimbardo has gone so far as to propose that “most mental illness represents not a cognitive impairment, but an (attempted) interpretation of discontinuous or inexplicable internal states” (Zimbardo, 1977). Tonic immobility, murderous rage, and non-directed flight are such examples.

Ethologists have found wide adaptive value in these immobility responses: freezing makes prey less visible and non-movement in prey appears also to be a potent inhibitor of aggression in predators, often aborting attack-kill responses entirely (Gallup & Maser, 1977 pp.350-54). The park service, for example, advises campers that if they are unable to actively escape an attacking bear, they should lie prone and not move. The family cat, seemingly on to nature’s game, bats a captured, frozen mouse with its paws hoping to bring it out of shock and continue in the game. Immobility can buy time for prey. The predator may drag frozen prey to its den or lair for later consumption, giving it a second chance to escape (Gallup & Maser, 1977 p.354). In addition to these aggression-inhibiting responses, freezing by prey animals may provide a signaling and decoy effect, allowing con-specifics, who are farther away, a better chance for escape in certain situations. Loss of blood pressure may also help prevent bleeding when injured. An immobile prey animal is, in sum, less likely to be attacked. Further, if attacked, it is less likely to be killed and eaten, increasing its chances of escape and reproduction. In a world where most animals are both predator and prey at one time or another, analgesia is “humane” biological adaptation.

However, anxiety can be both self-perpetuating and self-defeating. Freezing (Tonic immobility) is the last-ditch, cul-de-sac, bodily response where active escape is not possible. Where flight and fight escape have been (or are perceived to be) unlikely, the nervous system reorganizes to tonic immobility. Both flight-or-fight and immobility are adaptive responses. Where the flight-or-fight response is appropriate, freezing will be

relatively maladaptive; where freezing is appropriate, attempts to flee or fight are likely to be maladaptive. Biologically, immobility is a potent adaptive strategy where active escape is prevented. When, however, it becomes a preferred response pattern in situations of activation in general, it is profoundly debilitating. Immobility becomes the crippling, fixating experience of traumatic and panic anxiety. Underlying the freezing response, however, are the flight-or-fight and other defensive and orientation preparations that are activated just prior to the onset of freezing. The “de-potentialization” of anxiety is accomplished by precisely and sequentially restoring the latent flight-or-fight and other *active* defensive responses that occur in the moment(s) before escape is thwarted.

Jody-In a Fraction of a Second—An Example of Resolving Anxiety States through Completing Innate Defensive Responses:

Twenty-five years ago, Jody's life was shattered. While walking in the woods near her boyfriend's house, a hunter came up to her and began a conversation. It was mid-September. There was a chill in the air. Her boyfriend and others thought nothing when they saw someone apparently chopping wood. A madman, however, was smashing Jody's head again and again with his rifle. The police found Jody unconscious. Chips from the butt of the rifle lay nearby where they had broken off in the violent attack.

The only recollection Jody had of the event was scant and confused. She vaguely remembered meeting the man and then waking up in the hospital some days later. Jody had been suffering from anxiety, migraines, concentration and memory problems, depression, chronic fatigue and chronic pain of the head, back and neck regions (diagnosed as fibromyalgia). She had been treated by physical therapists, chiropractors, and various physicians.

Jody, like so many head-injured and traumatized individuals, grasped desperately and obsessively in an attempt to retrieve memories of her trauma. When I suggested to Jody that it was possible to experience healing without having to remember the event, I saw a flicker of hope and a momentary look of relief pass across her face. We talked for a while, reviewing her history and struggle to function. Focusing on body sensations, Jody slowly became aware of various tension patterns in her head and neck region. With this focus, she began to notice a particular urge to turn and retract her neck. In following this

urge in slow gradual "micro movements", she experienced a momentary fear, followed by a strong tingling sensation. Through following these movements, Jody began a journey through the trauma of her assault. In learning to move between flexible control and surrender to these involuntary movements, she began to experience gentle shaking and trembling throughout her body. Thus began, ever so gently, the discharge of her trauma.

In later sessions, Jody experienced other spontaneous movements, as well as sounds and impulses to run and to bare her teeth and claw at her assailant. By completing these biological defensive responses, Jody was able to construct a sense of how her body prepared to react in that fraction of a second when the hunter raised the rifle to strike her. In allowing these movements and sounds to be expressed, Jody began to experience a deep organic discharge along with the *experience* of her body's innate capacity to defend and protect itself.

Jody, through her felt sense, was able to follow her body's intentional movement. Intentional movement is non-conscious. It is experienced as if the body is moving of its own volition. Through completing the life preserving actions that her body had prepared for at the time of her attack, she released that bound energy and realized that she had, in fact, attempted to defend herself. Gradually as more defensive and orienting responses reinstated, her panic anxiety progressively decreased.

In Somatic Experiencing™, traumatic reactions are addressed by a wide variety of strategies. What unifies them is that they are all used in the service of de-structuring the thwarted anxiety response and restoring defensive and orienting resources. The overall picture shows how each individual's needs and resources call forth a unique, creatively adaptive solution (Gendlin, 1991 and Levine, 1997).

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