

WHAT IS PRIVATE BEHAVIOR?

UNDERSTANDING INNER EVENTS



EMOTIONS IN THE TIME OF A PANDEMIC: BEYOND COGNITION AND BEHAVIOR

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As a result of the current pandemic, anxiety and fear are at high levels. Television, social media, friends, and family are all reporting uneasiness. We are all experiencing a range of emotions. By emotions, I am not referring to what might be called “emotional” behavior, which includes those readily observable activities such as shouting, laughing, crying, etc. I am referring to those private experiences we individually experience. These are often referred to as “inners” or private events.

We experience a range of emotions which we may or may not share with others. In describing our emotions we have a problem. As B. F. Skinner pointed out, the problem lies with how we learn our emotion words. We are trained by verbal communities, that have no access to what we are privately experiencing, to use words to express our emotions. The best we can do is teach certain words occasioned by instances of observable behavior as it occurs under certain conditions. There is no certainty that the behavior is actually accompanied by a private experience of sadness, or anxiousness, or excitement, for example. We can never know if the anger we feel is the same as what others feel, or that any particular physiological change is always experienced as anger. Since accurate discrimination training is impossible, there is no possibility of accurately tacting these inner, private events. But are there not common measurable physiological changes occurring that we can learn to describe? Neuroscientist and psychologist Lisa Feldman-Barrett in her book *How Emotions are Made* suggests there are not.

Where emotions and the autonomic nervous system are concerned, four significant meta-analyses have been conducted in the last two decades, the largest of which covered more than 220 physiology studies and nearly 22,000 test subjects. None of these four meta-analyses found consistent and specific emotion fingerprints in the body. Instead, the body’s orchestra of internal organs can play many different symphonies during happiness, fear, and the rest.



T. V. Joe Layng earned a PhD in Behavioral Science (biopsychology) from the University of Chicago. He has nearly 50 years of experience in the experimental and applied analysis of behavior with a particular focus on the design of teaching/learning environments and clinical behavior analysis. At Chicago, working with pigeons, Joe investigated animal models of psychopathology, specifically the recurrence of pathological patterns (head-banging) as a function of normal behavioral processes. He also contributed to the discovery and characterization of the behavioral process known as contingency adduction. Joe also has extensive clinical behavior analysis experience with a focus on ambulatory schizophrenia, especially the systemic as well as topical treatment of delusional speech and hallucinatory behavior. In the 1990s Joe was Director of Academic Support and then Dean at Malcolm X College in Chicago where he founded the award-winning Personalized Curriculum Institute. In 1999, he co-founded Headsprout. At Headsprout, Joe led the scientific team that developed the technology that formed the basis of the company’s patented Early Reading and Reading Comprehension online reading programs, for which he was the chief architect. The reading programs have helped millions of children learn to read and have been awarded the software industries most prestigious acknowledgment, the CODiE Award, for best instructional solution. Joe has published extensively on instructional design, clinical behavior analysis, and emotions. He is currently a partner in Generategy, LLC, which publishes the patented educational software application Music Learning Lab. He is a Fellow of the Association for Behavior Analysis International, Trustee Cambridge Center for Behavioral Studies, Trustee Pacific Oaks College, Trustee Kansas Health Sciences Center College of Osteopathic Medicine, Trustee TCS education System, and Chair, Board of Trustees, The Chicago School of Professional Psychology.

She goes on to say:

...in different studies, within the same individual and across different individuals, the same emotion category involves different bodily responses. Variation, not uniformity, is the norm.

and continues:

Brain regions like the amygdala are routinely important to emotion, but they are neither necessary nor sufficient for emotion.

The same neural activity and other physiological events may occur across a range of emotions, and further, different neural and other physiological events can occur for the same reported emotion.

Apparently, there are no neurologically or physiologically consistent “inners” we can learn to tact. So, what is it we are feeling if there is no consistent neurological fingerprint nor consistent physiological events associated with our emotions?

We are left with the conclusion that we are not really expressing an “inner,” rather we are communicating changes in the environment that we are currently experiencing. As philosopher Ludwig Wittgenstein argued, the meaning of our emotions is found not in a private something about which nothing can be said, but rather in the common language we share about our emotions, that is, their use in the verbal community. In effect, our emotions track changes in contingencies and our attempts to talk about them are actually attempts to talk about those contingencies. Our inners are probably best understood as our attempt to bring others into contact with our “outers.” As Israel Goldiamond first noted, our private experience is a part of the contingencies governing our behavior, not a something that resides inside us. To understand our and others’ emotions is to understand our and others’ contingencies. In a sense, this is a *post cognitive* or *strictly behavior* approach.

Elaborating on Goldiamond’s 1975 and 1979

works, I recently provided a contingency analytic account, titled *Private Emotions as Contingency Descriptors: Emotions, Emotional Behavior, and their Evolution*, suggesting that emotions are not to be found in, or a product of, inner cognitions, or covert or overt behavior. Emotions are not respondents or reflexes, both of which fall into the class of observable behavior. A contingency analytic account stands in contrast with approaches that treat emotions as private experience triggered by some event, which then acts internally to trigger another public or private response. The popular emotion-as-stimulus account can be restated as: I see a harmful event, I feel afraid, I run as a result of feeling afraid. Often this formulation gets incorporated into an operant account: I feel afraid, as a result I run, escape reduces my feeling of fear which reinforces my running behavior.



We can reliably reinforce saying “dog” in the presence of a dog, in this case Molly.



We cannot reliably reinforce saying “sad” in the presence of a sad.

Another approach is to attribute the emotion to physiologically produced byproducts or feedback to the brain: I see the bear, I run, as a result of running away I feel afraid, the physiological byproducts of the escape behavior. This periphery-to-central-nervous-system-approach is the basis for current models popularized by Antonio Damasio and others. Jack Panskepp considered basic emotions to be pre-wired, sub-cortical neural responses to environmental triggering events.

A contingency analytic approach suggests something quite different. Succinctly, it is: I see the bear, which can cause great harm, I run, I put greater distance between myself and the bear. And, I feel afraid. That is, the emotion is part of the contingency; in a sense, it describes it. In short, fear describes contingencies where the reinforcer is distancing from a harmful stimulus. It is not a cause, it is not a triggering event, it is a type of tact that occurs as *part of the contingency*. This account

is not unlike Skinner’s approach to private experience. As he wrote in *Behaviorism at Fifty*, “An adequate science of behavior must consider events taking place within the skin of the organism, not as physiological mediators of behavior, but as *part of behavior itself*” (italics added). By recognizing our emotions as part of a contingency, we can use them to identify and change those contingencies.

In 1976, Goldiamond, relating his own challenge of spending his day in a wheelchair, described it this

way:

The handling of pain and discomfort, and its relation to consequences, is another area that bears inspection. Seated in the wheelchair, I very often feel a discomfort in my seat. It might be called pain. This occurs especially when I am not working. One way to talk about it would be to say that the pain keeps me from working. Thereby, I could get sympathy and support from a variety of people who are proponents of classical theories of emotion. A second way to talk about it would be to say that, because I am not working, my attention is turned to my seat and I feel discomfort. Thereby, I could get sympathy and support from proponents of the James-Lange theory of emotions. I submit that neither approach is particularly helpful.

A third way to talk about it is to say that I am not working because the contingencies which maintain productive work have not been instituted or are somehow crumbling. My discomfort is a signal to me that something is lacking contingency-wise. My seat is apparently more sensitive to the crumbling trend of these contingencies than is my intellect. When I start feeling the discomfort, I should immediately attend to the contingencies before they break down completely. I should set up working conditions so that my writing progresses.

Changes in contingencies may lead not only to a change in behavior, but to a change in thoughts and feelings as well. A person who I recently advised on overcoming a decades long phobia wrote:

I watched a first-person perspective video for the first time on my phone on the train today of a lizard walking onto a person's hand, facing the camera and being carried forward towards the camera.

I then rewatched the same video twice in my bedroom before going to sleep. This is a location where if

I had previously even so much as imagined a lizard in my head, I'd have had to throw all the sheets out and check everything until I was sure that there was no actual reptile army trying to get to me.

It simply blows my mind that focusing purely on the behaviors I can do something about in a systematic way also changes the emotion, the hallucinations and the physiological responses, all of which I believed would live with me for the rest of my life.

I wonder if I'm ready to go see some live snakes now. There is a reptile shop near where I live. Maybe I can go into the shop to see the cute snakes where there also happen to be some lizards.

While the emotions we experience may seem obvious to us, the contingencies of which they are a part, often are not. What emotions allow us to do is describe the effect those contingencies are having on us to others in a commonly understood language. A range of physiological changes may or may not be occurring, but that is not what is important. When we tell others we fear something, they readily understand there is an event where distancing ourselves from the event is a reinforcer. *That's disgusting!* Tells the verbal community that there is an event that, though not necessarily harmful, is aversive, and distancing from that event is the reinforcer. Whether or not there is an actual internal feeling of disgust, or my feeling of disgust is the same as yours is unimportant. What is important is that our contingency context has been communicated, allowing the verbal community to respond in useful ways.

Any time a requirement is placed on behavior, a consequential contingency exists. In other words, there is an explicit (we are aware of) or implicit (we are unaware of) criterion for reinforcement, positive or negative, placed on our behavior. Further, more than one contingency may be operating at one time, and we will have a history that includes past consequences for a range of alternative behaviors we emitted under similar circumstances. Thus, if in the past all behavior other than a particular behavior is a candidate for punishment, we will likely only observe the unpunished behavior. The unpunished behavior may have no observable consequences, but it is the outcome of a history of consequential arrangements. Respond —> Safe, Other Behavior —> Punished. Emotions arising from this arrangement may describe the action of multiple contingencies.

Everyday feelings of anxiety are common, particularly in the current environment. Various approaches to helping people with anxiety often focus either on the emotion itself or the thoughts or other verbal relations hypothesized to give rise to the anxiety. We may be given relaxation or meditation exercises. We may be advised to step “outside ourselves” and observe we are having an anxious moment. Seldom, however, is the advice to embrace the anxiety as a useful indicator of how current consequential contingencies are affecting us. What might those contingencies be?

While the emotions we experience may seem obvious to us, the contingencies of which they are a part, often are not.

Many years ago, Joe Brady observed that anxiety might be represented by two horizontal lines drawn on a graph one above the other. The top line represents the requirements faced. The bottom line indicates behavior in our repertoire. The anxiety we feel describes the separation between the two lines. That is, given a new or uncertain requirement, a speech to give, a room full of strangers, a first date, pulling into traffic, properly disinfecting groceries, or sometimes simply facing the day, the anxiety we feel describes the difference in our repertoire and what we may be facing. These feelings may also describe the various consequences for failing to meet the requirements, ranging from simply not completing an assignment to losing one’s job. Anxiety can occur under conditions where, if the requirement is met, a positive reinforcer is provided; not meeting the requirement simply may mean forgoing a reinforcer.

We may find that when facing those situations described by our anxious feelings, we are hesitant, vacillating, unsure. We are facing conflicting contingencies. Make an attempt and succeed, a reinforcer may be provided. Make an attempt and fail, a punisher may be delivered. That reinforcer would be great, but that punisher would not. If we decide to forgo the attempt, we are forgoing any chance of the reinforcer. We may now feel helpless. We may also experience reinforcer loss, typically described by sadness. We may find we want to drive those situations away. Where behavior is reinforced by distancing the event, rather than removing oneself, we typically report feeling angry. What we have is a swirl of emotions: anxiety, fear, sadness, helplessness, anger. We may also

find that behavior may be evoked that has previously occurred in dealing with these contingencies. Hence, a range of thoughts, excuses, and avoidance behaviors may ensue. What to do?

To change emotions we change contingencies. By understanding that anxiety is about facing requirements for which we may not be prepared, we can harness it. Can we bring the lines on our graph closer together? Can we lower the requirements, can we raise the performance? Understanding that our anxiety is reflecting these contingencies we can set about changing them. We often can’t do it all at once. We may need to take it in small steps.

During the 2014 Ebola scare I worked with a group helping hospital staff who were quite anxious about contracting the virus and about protecting themselves. Hazmat suits were unavailable at scale so hospitals had to provide protective gear from what was in stock. Procedures for donning the protective gear were developed and training began. The reported anxiety surrounding correctly donning the gear was sky high. Following from a contingency analysis of anxiety, it was clear that the staff were uncertain they were donning the gear correctly. The consequence for not doing so could be death. An example drawn from the sequence of steps required to safely don the gear is provided below. Initially, only the response side of the table below was provided to guide the staff. When the stimuli side was added, ensuring the performance met criteria, there was a major reduction in reported anxiety. In essence, we provided assurance that behavior met the requirements for safety.



A nurse fully outfitted in protective apparel.

Responses	Stimuli
11. Place face shield on by centering it on forehead above the eyes and tying the string to the back of the head over the head sock using a bow knot	Face shield over head sock completely covering forehead, eyes, mask and extending below the chin with no exposure of skin.

12. Put on blue gloves with the sleeve of the glove under the white bunny suit	Blue gloves covering both hands with arms of bunny suit draped down over wrist portion of glove.
13. Place blue apron/gown with circular opening over the head and through arms with gloved thumb through the arm piece loop, and wrapping plastic ties around the back of the provider and tied using a bow knot. (Bow may be tied by buddy)	Blue apron under face shield completely covering the white bunny suit with gloved thumbs protruding through loops at the end of the sleeves and tied with bow at the back of the provider.

Similarly, we can do the same in our homes. Will we feel a little anxious in these situations? Yes, but we are likely to be able to meet the requirements and accomplish our goal. We learn that feeling a little anxious will not prevent success. It is simply telling us we face a little uncertainty. It is a natural outcome of the contingencies, and if we are paying attention, it helps us to adjust our behavior. When feeling anxious, we might ask, "What requirement am I facing for which I am not sure I am prepared?"

The anxiety we feel facing a pandemic comes from a range of new requirements, such as properly disinfecting our groceries, and the potential costs of failing to meet them. We may also face the likelihood of not meeting easily-met past requirements, such as paying the rent. Our fear describes wanting to get away from the harm, and when we have few options, our back, so to speak, is against the wall. We may feel angry; not being able to get away ourselves, we may want to drive it all away. Anger describes those contingencies where creating distance can only be obtained by driving the threat away.

Our positive emotions, including yearning, excitement, longing, etc. describe contingencies, often involving "nearing" a stimulus. Feelings of sadness or loss may describe either the removal of stimuli we near, or the opportunity of nearing them. It is the absence of reciprocal social reinforcers, sexual satisfaction, and many other occasions likely to provide reinforcers that are missing when a society is living in stay-at-home conditions. Where we feel sadness, loss, yearning, the question one asks is, "What is there about what I can't do that is important to me? How can I find new ways of getting it?" Israel Goldiamond has described how he and some of the other patients he advised found ways

to keep the professional consequences they valued in place even though spinal injuries changed how they were obtained. He and others, thereby, avoided the depression often associated with such injuries.

We also experience a range of "social" emotions which can be similarly treated. Examples include guilt: behavior will be required for reducing a penalty for a social misstep (I cop a plea, by pleading guilty or beg forgiveness for not wearing a mask); embarrassment: failing to meet criteria for social-behavior set by community, or if it includes a personal loss to another: shame; distancing an aversive object but no personal loss: repulsion; less intense, disgust.

Earlier, I noted that there is a difference between emotions and emotional behavior. Once we "express" our emotions, like any other operant behavior, one's public "emotional behavior" may come in contact with reinforcers of its own. That is, an utterance, cry, contorted face, may all be recruited by a consequential contingency that may not be related to the contingencies which occasioned the emotional, contingency-communicating response in the first place. One panics, feels a wave of anxiety and runs out of the room. A spouse responds, thereby providing comfort and the close contact that has in the past been rare. Thereafter, one may find feeling and expressing anxiousness increases in frequency after periods of neglect by the spouse. Disentangling emotions as contingency descriptors from emotional behavior is often required. Both are a product of consequential contingencies, but each is different as would be how we might intervene. It may not involve lowering requirements or raising performance, but instead gaining the highly valued spousal involvement in another way. Sometimes both may be intertwined.

By understanding that our emotions are describing the contingencies we encounter, we can identify those contingencies and change them or work to keep them in place. Where we can't change them, we can understand that our feelings are a natural outcome of those contingencies, and why we are feeling the way we do.

After sharing a recent article I wrote, my old friend, Norm Davis, brilliantly summarized the contingency analysis of emotions in just six lines:

*Emotions are Tactful
contingency factual
but impossibly knowable things*

*They do not control me
nor do they console me
but they signal the changes contingencies bring* ●