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ARTICLE



Private emotions as contingency descriptors: emotions, emotional behavior, and their evolution

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ABSTRACT

Whereas emotional behavior can easily be included in a behavior analytic account, emotion as private experience has proven much more difficult. I will argue that simply considering the private experience of emotion as covert behavior, stimuli (to be gained or avoided), or motivating operations is not satisfactory. The fact of private experience presents definitional problems not encountered when considering public behavior. The problem of privacy as elucidated by Skinner (1953, 1963, 1974) and Wittgenstein (1953) is discussed and a possible solution provided. This solution is based upon an approach first described by Israel Goldiamond (1979a) which treats private emotions as indicators or descriptors – non-spoken facts – of consequential contingencies. The experience of emotion is considered as occurring with, and determined by, the contingency. In this account, emotions neither cause behavior nor are caused by behavior; they are instead part of consequential contingencies. The differences among emotions reflect the differences in contingencies described. Once “made public”, however, emotion may become linked to “emotional behavior”, which is then maintained by its consequences. The approach appears consistent across species and suggests a common evolutionary origin as first suggested by Darwin (1872).

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The distinction between private emotion, as opposed to emotional behavior, has not been easy for either radical behaviorists or philosophers to reconcile. Further, what is the relation between private emotion and public emotional behavior? How did it evolve and why?

I will begin by retelling a story that I first heard from Israel Goldiamond.

I have always wanted a bear skin. You can imagine how happy I was when I finally had the opportunity to hunt for one. For hours, I tracked a bear through the woods and finally, there it was, my dream was about to come true. I carefully raised my rifle taking aim at the bear. At the same time, the bear saw me. It raised up on two legs and growled a very menacing growl. I didn't care, I was *elated*. My dream, my quest was to be realized. My heart pounded with excitement as I took aim, and then in a culminating act, pulled the trigger. Click. Click was all I heard. No gunshot. I tried again. Click. The rifle had apparently jammed. Fear quickly spread through my body. The bear was raised as before and my rifle was still aimed at the bear. But something had changed. Instead of a nice new bear rug in the living room, the bear was about to get a nice new human skin for its den.

That is, the consequences had changed, or, more precisely, there had been a change in consequential contingencies. Same stimulus, same behavior, massively different consequence. The swift change from elation to fear tracked the swift change in contingencies. I began to run. Was I running because I was afraid? Was I afraid because I was running? Soon I ran into a sheer cliff area, nowhere to go. I turned, still clutching the rifle I grabbed it by the barrel and started swinging it at the bear, hitting him around the head and nose. I felt mad, really angry and I fought. I was going to show that bear, and with luck, drive him away. No more was I running away now it was the bear's turn to run away from me.

How did it turn out? Since this is fiction, the reader can choose the ending. This was one of Israel Goldiamond's favorite stories. It nicely illustrates some of the main points of his account of emotions (Goldiamond, 1979a). In short, I was running *and* I was afraid because there was a bear chasing me. My fear was not motivating my running. Both were a part of the same consequential contingency. As straight forward as this may appear, it has not been the primary approach used to investigate emotions or emotional behavior. As Goldiamond (1975) wrote:

Many theories have been formulated to account for emotion, and to relate it to behavior. Some approach emotion from an evolutionary, developmental point of view, citing its functions in the survival of the organism. Others take a physiological point of view, focusing on the role of the autonomic and central nervous systems. Emotions have been considered to be a complex set of autonomic and skeletal responses, from which the practitioner makes inferences, and it has been argued that the emotional experiences of the client himself derive from such responses. This, in essence, is the James-Lange theory of emotions. It states that emotions are the experiential concomitants of such responses, which, in turn, are the feedback from the behavior itself. This is reflected in the statement, "He threatens me; I hit him; therefore [the feedback from hitting], I am furious." This statement is in opposition to the more classic formulation, "He threatens me; I am furious; therefore, I hit him." Experimental distinction between the two formulations has been inconclusive, and other theories have been proposed, including physiological theories. (p. 70)

Layng (2006) updated this overview.

Recently, attempts have been made to analyze emotions through computer simulation (Johnston, 1999), face recognition (Ekman, 2003), neuroimaging (see for example, Baas, Aleman, & Kahn, 2004), other brain research (Damasio, 2003; LeDoux, 1996) and Developmental Systems Theory (Griffiths, 1997). Many of these approaches rely on essentialist (after Donahoe & Palmer, 2004) explanations that often consider emotions to be fixed brain reactions to certain triggering stimuli. Some behavioral approaches tend to accept this position as well, often with an extension of triggering events to those stimuli paired with other "originating or primary" stimuli (which may be internal) such that there is some transfer of function from one stimulus to the next (Friman, Hayes, & Wilson, 1998).

Lewon and Hayes (2014) provide a succinct review of past behavior analytic approaches to emotional behavior and propose approaching emotions as "products of motivating operations" (after Langhorne & McGill, 2009). They maintain that the feeling of emotion may be related to elicited respondents reflecting changes in motivating operations. Emotions and emotional behavior are not clearly separated in their treatment, but as we will see, their treatment overlaps with the approach described here in as much as both view emotions as reflecting changes in contingency relations.

In the 1970s, Israel Goldiamond began to formalize his approach to emotions that had been emerging from the operant laboratory and his clinic for quite some time (see Layng, 2009). His approach shared some of the features of Skinner's (1953) approach, which described emotions as products of both phylogenetic and ontogenetic contingencies, but there were differences.

For the most part, Skinner focused on emotional behavior in his discussion of emotions rather than focusing on the private experience of "emotion" per se. "We define an emotion – insofar as we wish to do so – as a particular state of strength or weakness in one or more responses induced by any one of a class of operations" (Skinner, 1953, p. 166). Emotional behavior is what the public can access, and what an individual may privately feel is a by-product of the contingencies responsible for the emotional behavior. Further, the words acquired in reference to what is privately felt were established by a verbal community with no access to the emotion and as a result, "Almost all terms descriptive of emotions which do not carry a direct reference to inciting conditions were originally metaphors" (Skinner, 1974, p. 25).

Skinner (1974, p. 165) attempted to distance psychology from the notion that emotion was somehow an instigator of observed behavior.

The exploration of the motivational and emotional life of the mind has been described as one of the great achievements in the history of human thought, but it is possible that it has been one of the great disasters. In its search for internal explanation, supported by the false sense of cause associated with feelings and introspective observations, mentalism has obscured the environmental antecedents which would have led to a much more effective analysis.

Goldiamond and his students would go on to further distinguish between emotions and emotional behavior (Goldiamond, 1979a; Layng, 2006). They argued that emotions as separate from emotional behavior were important considerations in a science of behavior. Goldiamond (1979a) stated the problem this way:

I'll use the term "emotion" to represent what Skinner designates as private events, and what others call subjective, inner, unobservable—to distinguish them from objective, outer, and observable. I prefer the distinction private/public, except that it lacks some of the connotations of the others, for example, the separate universe of discourse often implied. Indeed, private events are elegantly legitimized as topics of scientific concern, by Skinner's comment, "With respect to each individual, a small part of the universe is private." And joys, sorrows, loves, and hates are such parts. How are these parts of the universe related to other parts, which are public?

I shall return to Goldiamond, but first, it might be helpful to briefly examine the problem posed by private experience of which emotion is a part. Though it is tempting to say emotion is simply covert behavior or stimuli of some sort to which we may respond, there is a problem with this approach. This problem is perhaps best described by philosopher Ludwig Wittgenstein.

Wittgenstein and private events

Ludwig Wittgenstein grappled with the problem of reconciling private experience and public behavior. His conclusion is illustrated by this imagined conversation in the *Philosophical Investigations* (Wittgenstein, 1953, p. 102):

- But you will surely admit that there is a difference between pain-behaviour accompanied by pain and pain-behaviour without any pain?
- Admit it? What greater difference could there be?
- And yet you again and again reach the conclusion that the sensation itself is a nothing.
- Not at all. It is not a something but it is not a nothing either! The conclusion was only that a nothing would serve just as well as a something about which nothing could be said.

Wittgenstein reasoned that there was no way any of us could possibly know that what we feel is at all the same as what others feel. Like Skinner (1963, 1974), he observed that the words we have for our emotions do not come from direct contact with the emotion, but from the emotional behavior that accompanies our emotion. And further, those words and the occasion for their occurrence are governed by the consequences of their use. The verbal community that does not have direct access to our emotions cannot provide descriptions for what it cannot observe. Any words we use in our description come from the words the community provides that have their roots in the use of the word, not in its descriptive qualities other than that. I may say that I have a mild pain or an intense pain, but this describes the level of intervention I seek, not the pain. We have no real description for the feeling that leads to the words, “I am in pain”. We may have a feeling; it is a “something” as Wittgenstein notes, but nothing can be said about it.

If nothing can be said about our private emotions, how then can we talk about them? In his example of the beetle in the box, Wittgenstein (1953) shows how we can have a meaningful conversation about “our” beetle though we cannot see the beetle in anyone else’s box. Several people each have a box containing a beetle. No one can look into anyone else’s box; so, there is no way to determine if one’s beetle is the same as the others. That is, we have no idea if what we call a beetle is like the beetle in anyone else’s box. However, we can discuss it and have a meaningful conversation about our beetle as long as the community agrees on the same description of beetle. The description, however, may not match a single beetle in anyone’s box. The description’s function is determined by its use in the verbal community, not the private something (the beetle in this case) about which nothing can be said.

Accordingly, emotions cannot be considered stimuli in the same way we define environmental stimuli. How do I know that the stimulus I think I am responding to is the stimulus I am actually responding to? I have had no discrimination training and have no words for it. When one says that I had to escape the pain, or I try to avoid that feeling, one is not describing the pain or the feeling, one is meeting the word-use requirements of the verbal community as determined by the consequences of the word use. Yet, as Wittgenstein replies when asked if there is difference between pain behavior accompanied by pain and pain behavior which is not, “...what greater difference could there be?” There is more to the account than simply engaging in emotional behavior and agreed upon descriptions. What is the difference?

The contingency solution

The answer may perhaps be found in our bear example that led off this discussion. We see rapid change in emotions after pulling the trigger. What changed? The contingencies changed. Prior to pulling the trigger, nearing or closing the distance

between the bear and me was the reinforcer maintaining my trek through the woods. Once the trigger was pulled and nothing happened, the consequence maintaining my behavior was one of distancing myself from the bear. My emotions tracked the change in contingencies. That is, my emotions change as the contingencies change, elation changes to fear as nearing changes to distancing. Does it matter if I have a good description of the emotion or that it is the same thing felt by others who express a similar change from elation to fear? No. What is important is that the contingencies change and I respond accordingly; the emotions track that change. Nothing need be said about the emotion. When the verbal community sees me running away shrieking, it calls that fear. I may report feeling afraid so as to bring another person into contact with my contingencies. The emotional behavior observed may also be a product of physiological changes that occur that may make it more likely we can meet the requirements of the new distancing contingency. These are not the public accompaniments of the emotion, but of the change in contingency requirements. I am feeling “afraid”, changing physiological states, and running because there is a bear chasing me.

Emotions as contingency descriptors

Stated in its simplest form, changes in emotion track change in consequential contingencies. That is, emotions reflect the contingency requirements we face. As these requirements change, so do our emotions. Accordingly, emotions can be thought of as contingency tactors (after Skinner, 1957): Differences in emotions reflect differences in consequential contingencies. Changes in consequential contingencies, and the emotions that track them, often are accompanied by physiological changes that are difficult to conceal, what some have called “emotional leakage”. Ekman (2003) has described a range of human expressions and bodily changes that reflect certain contingencies. At times, these changes may be consequential in their own right; they may serve a range of functions including autoclitic ones (after Skinner, 1957). Other times, the consequences of their display can be aversive, and we may act to preempt or hide their occurrence, as when one learns a coworker received a larger bonus for similar work. Such visible or public changes bring us into contact with a range of consequences and form the basis of what may be described as emotional behavior. Emotions, considered private events, are thus distinguishable from emotional behavior, a public event, and may thereby serve different functions.

We may shout or sing or depress or pace. We behave in ways that may indicate how contingencies affect us. Once we publicly behave, those “emotional behaviors” can have their own effect. They may be recruited by consequences in their own right and may no longer serve to reflect a change in contingencies but instead become reinforced operants, meeting new requirements. Eventually, the emotions expressed may or may not be felt depending on the contingency requirements.

Clinical implications of a contingency analysis of emotions and emotional behavior

Behavioral psychoanalyst Dyrud (1971) once said that the goal of psychoanalysis was to make the unconscious conscious by making the implicit consequences governing

behavior explicit. In the clinic, helping patients often requires them to become their own contingency analysts. That is, to understand and effectively intervene, they need to be able to find and change the contingencies responsible for the pattern they or others find disturbing. The costs (aversives) that often occasion the patient to seek therapy are somewhat clear to both the patient and to the therapist. Often, however, the benefits (reinforcers) may not be clear. This is especially true when the consequences for readily *available alternatives* are overlooked (Goldiamond, 1984; Layng & Andronis, 1984). Considering one's emotions can help make explicit the implicit consequences that are a part of alternative contingencies. Rather than trying to change the emotions, or simply accept them, they can be put to work to help an individual reveal the contingencies responsible for the disturbing behavior. They can also be used in establishing other, perhaps new contingencies that can result in different behaviors and different feelings. Considering one's emotions as contingency factors may be critical to establishing new patterns that produce greater benefits at much less cost (for a more detailed discussion, see Goldiamond, 1974; Goldiamond, 1976, 1979b, 1984; Layng, 2006, 2009; Layng & Andronis, 1984; Merley & Layng, 1976).

As Goldiamond (1976) once noted when describing his recovery from an accident that left him in a wheelchair:

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. (p. 123)

The something (the discomfort) about which nothing can be said may be acted upon in terms of the three "uses" Goldiamond describes. One fits the classical theory, one the James-Lange Theory, and the third, a contingency analytic approach. Behavior or physiological feedback does not cause emotion (as in the James Lange theory), nor does emotion cause behavior or physiological feedback. Instead, both the behavior and the physiological feedback are a function of changes in contingencies. In a contingency analytic approach, it is not the stuff of the pain that is important nor that it is the same pain as anyone else's nor that the pain I think I am feeling is actually the pain felt. The "discomfort" simply tacts crumbling contingencies. What is important is the action I take in regard to the contingencies.

Emotional behavior presents other problems for the clinic. As observable behavior, it may come into contact with its own consequences; and further, these consequences may have nothing to do with the originating conditions. As Goldiamond noted in the

passage above, “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”. When sympathy and support become potent consequences, reporting discomfort may be made more likely. Complaints may thereby occur for reasons unrelated to those that initiated the original occasion for the complaint. One may even “feel” the discomfort as a result or show physiological signs indicating such discomfort. Goldiamond (1974) reported the case of a young woman whose blushing was determined to be an effective operant for changing the direction of a conversation. She was instructed to heed the early signs of blushing and intervene in a way that produced the same consequences as blushing; as a result, the blushing dropped out. In the clinic, the therapist and patient must work to determine whether a reported emotion is describing a consequential contingency or if it is a part of emotional behavior with its own consequences, a critical process for both patient and therapist (see e.g., Layng, 2006).

Animals, emotional behavior, and evolution

The approach presented thus far has considered emotions and emotional behavior in humans, but any treatment of emotions must fit into a larger evolutionary context. The account should show continuity with other species. Further, examining emotional behavior in other animals may contribute to the understanding of the role of emotions in human behavior. Darwin (1872) thought this topic to be of such great importance that he devoted an entire book to the subject. He argued that human emotion and animal emotions are linked and that the topography of the emotional behavior, and reported emotional states, was largely inherited. I believe that Darwin was fundamentally correct and that emotional behavior observed across many species is derived from the same common ancestor. However, as I describe below I differ in what I propose is inherited: the response to a consequential contingency requirement, rather than simply a topography of behavior.

When determining if a particular morphological or behavioral characteristic has its origins in a common ancestor, evolutionary biologists and ethologists look for what they call homologies (see Lorenz, 1965). They do this in part by trying to determine if the pattern occurs in evolutionarily more primitive organisms with which a common ancestor is shared. Common patterns where no common ancestor exists are considered analogies, products of convergent evolution such as the wing of a bird and a bat. Aside from topographic commonalities, as described by Darwin and others (e.g., Ekman, 2003), acting emotionally and associated feelings may be considered an evolutionarily old pattern based on (1) homologous procedures that work to replace aggression and fear responses across species, and (2) homologous brain areas associated with emotional behavior across species, including humans. As we will find, such homologies can be observed in emotional behavior across a range of species.

When we see a dog begin to growl, show its teeth, and bark, we may agree that it is engaging in what might be called intensely “angry” behavior. One approach is to assume that it has perceived a threat and is reflexively reacting. Or, more likely, it may be described as engaging in a species typical or modal action pattern elicited by an environmental releaser. We may try to relate it to dominance and standing in the dog

community, etc. But does the dog feel anger? We don't know the answer to this question any more than we can answer the question as to whether or not people feel anger. We do know, however, that the dog is responding angrily.

Is the pattern really fixed? We can punish the behavior and the dog may stop, or we can try to use clicker training to reinforce alternative behavior. Both of these may have some success, but often when the individual punishing or reinforcing is absent, we may see a quick return of the aggressive behavior (Azrin, 1960; Laurence, 2006; Linhart, Roberts, Schumake, & Johnson, 1976; Protopova, Kisten, & Wynne, 2016). However, what if the dog's "anger" specified a particular reinforcer, much the same as might occur for humans? That is, what if it indicated that the reinforcer for angry behavior is distancing an object or event by removing the object or event? Stated otherwise, it describes a potent contingency involving the removal of an event or object. Can fleeing or attacking patterns, frequently characterized as "species-specific" and "released", be replaced by approach patterns that meet the contingency requirement for distancing the object or event? In the case of "fear" and "anger" what is "released" may not be simply a species-typical pattern but also may include the potentiation of distancing as a reinforcer. Stated otherwise, fear describes those contingencies where removing oneself from a stimulus is a reinforcer; anger describes those contingencies where removing the stimulus is a reinforcer. If distancing is the reinforcer, it should be possible for nonaggressive alternative patterns that produce distancing to replace the more common species-typical aggressive patterns.

This is precisely what Jesús Rosales-Ruiz and his students (Rosales-Ruiz & Snider, 2009; Snider, 2007) successfully accomplished using a procedure they call Constructional Aggression Training (CAT). If a dog barks and tries to attack when an unfamiliar person is near, these investigators bring the person to a threshold point where the dog just begins to respond. When the dog relaxes, the person moves away. This is quite different from systematic desensitization where the person would immediately move closer. Next, the person returns and stops a bit closer to the dog. Once the dog relaxes and looks around, the person again leaves. Soon, the person is standing next to and positively interacting with the dog. By giving the dog the reinforcer that was maintaining the aggression for an alternative pattern, the aggression ceases, and other patterns occur rather than the aggressive patterns previously occasioned by the presence of an unfamiliar person. Using the consequences found in contingencies described by fear (removing oneself) or affection (getting close, etc.), alternative patterns can be shaped without the need for extraneous reinforcers such as food. And, as the contingencies change, so does the emotional behavior. Further, respondent behavior often associated with emotion (see Lewon & Hayes, 2014) may not be directly elicited by the potentiating variables (including motivating operations) but instead potentiate those behaviors that (in the case of anger, for example) have produced distance in the past. I use potentiating variables here to refer to those procedures that make any element of a contingency, or their relation, effective (see Goldiamond & Thompson, 2004). Accordingly, the particular emotional behaviors that meet the contingency requirement may vary given the same potentiating variables.

The same procedures have been used with reptiles. For example, a complete video tutorial using CAT to tame an Iguana is posted on YouTube (Owings, 2015). The work with the reptile offers a great demonstration of apparent behavioral homology across

relatively distant species. As noted earlier, organisms may have different evolutionary foundations, yet through independent adaptation end up looking much the same (e.g., the Tasmanian wolf, a marsupial, looks much like a Timber wolf, a canine amniote, though they do not share a recent common ancestor – their adaptations are analogous and the products of convergent evolution). Given the wide range of species that demonstrate the relations involved, I do not believe that this is the case for emotional behavior. Rather, emotional behavior likely has its foundation in ancient operant behavior. The observation that procedures which use the same reinforcer – distancing in this case – to shape nonaggressive behavior in both reptiles and mammals suggests that the consequential contingency foundation for emotional behavior may be quite old – something over 200 million years. This has important implications for our understanding of emotions and emotional behavior.

Evolutionary biologist Tierney (1986) has argued that there is evidence that patterns, which are currently considered species typical, have their origins in much more highly variable-learned patterns. Stated otherwise, they began as operants. For example, a bird calling out when a predator nears may be a species typical pattern today, but an ancestor had to have originally called out for it to be available for selection. Those animals that could act quickly and consistently lived to reproduce with higher probability than those who did not. Thus, those patterns for which the consequences were extremely critical and had to occur nearly automatically became candidates for selection. Accordingly, the morphological and physiological structures that supported such behavior were selected. The result was a limiting of response alternatives; that is, there was a decrease in response variability due to the structural changes, a process called “canalization” (after Waddington, 1942). This canalization process may also account for neurological localization of emotional behavior. Neuroscientist Panksepp (2010) has identified subcortical brain areas that appear to support seven distinct types of emotional behavior in mammals: SEEKING, RAGE, FEAR, LUST, CARE, PANIC/GRIEF, and PLAY (upper case reflects Panksepp’s nomenclature). The consequences of each pattern can be described as follows: SEEKING: nearing occasion for reinforcement, RAGE: removing the other, FEAR: removing oneself, LUST: nearing sexual encounter, CARE: removing distress signals, PANIC/GRIEF: nonspecific distancing, PLAY: nearing reciprocal social or activity related consequences. In humans, where those consequences are potent, feelings consistent with them may be reported. That is, the feelings describe the consequential contingency, whether the emotional behavior has been strictly canalized or remains more variable.

Since the emotional behavior displayed (often characterized as species specific and released) can be replaced by other patterns, this supports the assertion that emotional behavior may be considered an example of such canalized operants, and that operant behavior may be quite ancient, preceding many species typical patterns. Further, one must consider not just the topographical pattern and its releaser as the “inherited” pattern; the consequences of that pattern are in a sense inherited as well. The consequence almost invariably occurs as a result of the pattern. The private emotions reported by humans may be considered attempts to bring the verbal community into contact with these consequential contingency relations.

To engage in a little “Just So” story telling (after Kipling, 1912), we may speculate that what is “felt” is likely to be a byproduct of canalization. That is, the display behavior that

must occur quite rapidly – for example, hair standing on end, eyes widening, etc. – across many species all serve, at least initially, to create or maintain distance and requires rapid physiological change to do so. As mammals and primates evolved and became more social, new social contingencies occurred, recruiting the founding emotional behavior into more complex and nuanced repertoires and emotions (after Panksepp, 2010). The advent of verbal contingencies likely accelerated the number of types of social contingency requirements and made our emotional lives even more volatile, and some might say more interesting. This led to contingencies described by private social emotions such as embarrassment, shame, guilt, disgust, etc. all of which tact specific consequential contingencies. Perhaps what is “felt” are the remnants of canalized basic emotional patterns evoked by more complex social contingencies. As parts of contingencies, they occur and change as those contingencies change.

Conclusion

Private emotions track contingencies and their change requires changes in contingencies. Attempts to change emotions felt without changes in contingencies will likely not ultimately lead to a satisfactory outcome. Simply accepting one’s emotions so one can try to get on with one’s life may offer some hope of contingency change. However, a more productive approach may be to not only accept one’s emotions, but also to understand that they are a natural and sensible outcome of the contingencies one has encountered in the past and that one is currently facing. Understood in this way, emotions can provide a useful heuristic for identifying contingencies and for intervening in important ways. We can often find unique contingency requirements that are described by emotions. By identifying those requirements, we may take effective action. When the contingencies change, the emotions and thoughts that are a part of that contingency also may change. If I am afraid, I need to know that the result of putting distance between myself and some thing or event is the reinforcer. If I am anxious, I need to identify the behavioral requirement placed on my behavior for which I may lack the necessary repertoire (see Dyrud, 1971). If I feel embarrassed, what social requirement am I quite publicly failing to meet? If I feel guilty, what did I do wrong for which I need to lessen the punishment? If I want something desperately, is closing the distance affection or predation? That is, is remaining close to, or only getting close and consuming the target, reinforcing?

Emotions do not cause, nor are they caused by, behavior; behavior and emotion are a function of and part of the contingency. Evidence from work in the clinic and in animal training suggests that by considering emotions as contingency descriptors (tacts) and emotional behavior as either reflecting those contingencies or as operants in their own right, we can provide a useful pan-species account of emotions that can be highly valuable in the clinic and society at large. Perhaps a something about which nothing can be said may find itself useful after all.

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