

The neurobiology of threat, and what facilitators need to understand about our biology

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Neurobiology

Borrowing a concept from the family therapy literature, there are two errors we can make when working with groups—the alpha error and the beta error. The alpha error is to over react, to try to appease or change the person’s response. The beta error is to under react, to ignore what is going on or pretend it doesn’t matter. If we do nothing, the group is subject to the difficult behavior, and the process of the group is undermined. If we get defensive, angry, or take it as a personal attack or threat, we are owning too much of the problem, and contributing to a vicious cycle in which we have become a part of the problem and in doing so we undermine our own ability to respond effectively.

Difficult behavior is related to many possible things such as discomfort with the way the group is going, a sense of lack of acceptance by the group, anxiety, low self esteem, authority issues—past or present, previous dynamics in a group with a leader or facilitator, or related to the subject around which the group has come together. Difficult behavior may have payoffs such as reduced tension, increased attention, a sense of power, control or mastery, avoidance of anxiety producing aspects of the group activity, confirmation of low self esteem to name a few.

In order for the facilitator to respond appropriately and constructively, she or he needs to be able to recognize the behavior, notice the effects of the behavior on him or herself and the group, develop hypotheses about possible functions of the behavior, reflect on the best options to respond and act accordingly. This means that the facilitator needs to feel able to think and reflect. Our own stress reactions can interfere with our capacity to access our best selves under fire.

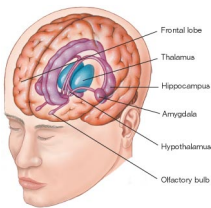
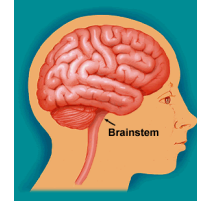
We need to be able to ask questions to draw out the participant, validate his or her responses as meaningful contributions, reframe their response as reflecting a genuine contribution to the group, take a break, set limits, stop the behavior, refocus on the issue at hand, talk to the person off line, or bring the behavior to the group for a response from the group. We are not always able to do these things. And here is why: when we feel under attack our bodies respond by closing down our thinking brain and activating our feeling brain.

Stress exacerbates characteristic responses

When there’s a lot at stake and we feel under attack, the brain and central nervous system release hormones designed to keep us hyper -vigilant, with physiological (a racing heart rate, cold, sweaty palms) and psychological effects. Our capacity to think and reflect shuts

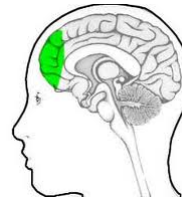
down as we prepare for fight, flight or freeze.” Why do we attack, withdraw or freeze during times when clearly we would be better served by remaining calm and thoughtful? We have a triune brain. The **brainstem, limbic system, and prefrontal cortex** play important and very divergent roles in how we react. Which of the three parts of the brain is in charge depends on the level of perceived threat.

The brainstem which is sometimes referred to as the reptilian brain prompts a flight-fight-freeze response to danger. It’s the most primitive area of the brain, focused on basic survival needs such as food, shelter, reproduction and safety.



The limbic system, or mammalian brain, is associated with emotions and attachments. It gives meaning to our feelings, and evaluates whether a situation feels safe. In certain situations it may trigger fearful memories. Because it sometimes cannot differentiate between a past danger and a safe present, it can “replay” its response to a previous dangerous event during a harmless moment.

The pre-frontal cortex, unique to primates, is the most evolved part of our brain. It is here that we create a sense of self, develop insight and empathy, and form moral judgments. This area enables us to pause before we act, reflect, and focus our attention.



The thoughtful behavior typical of our day-to-day life requires connection (vertical integration) between all three parts of the brain as well as communication between the emotional left and rational right hemispheres.

Ideally, the prefrontal cortex assimilates all the information it receives and responds by sending neuronal messages to the other parts of the brain and the body. When the limbic system senses danger, it will override the prefrontal cortex, and send alarms to the entire system. These alarms influence how we feel, think, and act.

When our pre-frontal cortex is active and in charge, the brain is able to reflect, organize, be creative, think, and listen. Yet, when we become flooded, and feel extreme threat—when we **most** need to be able to think—our reptilian brain—the one that’s wired to **fight, flight or freeze** - hijacks our thoughts, feelings and behavior. In that state, we cannot access our thinking brain; we’re unable to listen and learn. We shut down and become paralyzed. We are not receptive to new information. This affects our capacity for a constructive exchange!

Neurobiology of stress

When we perceive threat the limbic system is activated and the prefrontal cortex shuts down. The orbito-frontal cortex connects the frontal cortex and the limbic system. When the limbic system is reacting to the threat of survival there is more activation of neurons from the limbic system to the prefrontal cortex. Flooding occurs. We are familiar with this as fight, flight or freeze. In survival mode when the pre frontal cortex is shut down, we are less likely to be able to listen, be curious, or inquire with genuine interest.

Under stress people move to characteristic ways of responding depending on the person and all of us have internal conflicting ideas, thoughts and feelings, some of which are characteristic responses to situations we find threatening. These characteristic responses may be how we know ourselves. However, we all have a larger repertoire of responses when stress is reduced. The challenge for all human beings is to be able to rein in our characteristic responses to stress, keep our limbic systems from overriding our prefrontal cortex, and be informed rather than directed by our feelings. We have to learn to reflect on our feelings and decide how we want to proceed after considering the situation and our goals, hopes, purposes and commitments. This is a tall order and most of us react to stress by going to our preferred corners.

Panskepp's model of the emotional operating systems: when an emotional operating system is in control, all thoughts, feelings, sensations, and behaviors will be organized by the emotional system in charge. Panic, fear and anger are related to self-protection under threat. Curiosity/seeking, concern/nurturing, play and lust are other emotional systems available when we feel safe and open to stimulation.

If we want to direct ourselves toward curiosity, concern, playfulness, or care for others, we have to calm our limbic system so that anger, fear and panic related to the threat system in the brain do not interfere with these higher brain functions. Our capacity to reflect increases as we become more attuned to our bodies and feelings. Curiosity and inquiry occur when we shift from states of threat, to concern and care for others.

Emotional states are contagious: we have mirror neurons that connect to our bodies through the insula. These neurons activate when we perceive others doing something we recognize as behavior linked to motivation. We recognize this behavior and have the capacity to feel others' feelings in our own bodies. This is the basis for our capacity for empathy and compassion for others.

Since emotional states are contagious, an effective facilitator can learn to manage her own distress in order to be a calm presence to others, while staying connected with what is going on for others.

Becoming calm, mindful, reflective allows people to move toward others with genuine curiosity and to inquire with genuine interest, and take in what others' say. The antidotes to feeling threatened are to act in ways that are calm and mindful and to create conditions for others so they do not feel threatened.