

Neuroception – Key concepts from Interpersonal Neurobiology

Neuroception = brain's ability to assess risk

- Safe
- Dangerous
- Life threatening

Neuroception occurs pre-consciously (very fast!)

Three neural circuits that mobilize the body for response

- Danger = Sympathetic system prepares body for fight or flight (activation!)
- Life threatening = Parasympathetic (dorsal vagus) prepares body for freezing (feigning death)
- Safe = Parasympathetic (ventral vagus) prepares body for social engagement

Ventral Vagus Nerve

- Myelinated
- Runs from nucleus ambiguus in brain stem to the heart
- Associated with facial muscles & middle ear (ability to hear mid-range voice tones)
- Suppresses the sympathetic system
- Oxytocin allows immobilization without fear

Application to aikido: When confronted with incoming situation, I make a preconscious assessment of threat which activates my sympathetic nervous system preparing me for fighting. My body responds by tensing up and resisting. I have another nervous circuit – the ventral vagus - that I want to learn to access in that instance. Neuroception of threat can be either based on external threat (a real tiger) or by internal processes (implicit memories, beliefs, expectations). My neuroception in aikido seems to be based upon the perception of an external threat of physical pain as well as internal fears of shame and of looking foolish, of doing it wrong and of disapproval (especially from an authority figure). My assessment of risk/danger is becoming more subtle and sophisticated as I train and learn. My assessment of risk is stronger for some techniques (koshi, kote gaeshi, sankyo) where there is a greater risk of physical pain and injury due to the physical limitations of my body. In addition, my internal voices of judgment are stronger when I am faced with something unfamiliar, when I am confused and feel like I *should* know better and when I feel called upon for an answer. My parasympathetic circuit also seems to get triggered when I freeze up in response to a question. I wonder what this is about as it is clearly not an actual life threatening situation but more related to performance anxiety and my internal implicit memories and fears of looking foolish.

As my sensei reminds us, aikido is a practice of learning what it is that blocks us – for me, this means what is it that blocks me from learning and having full access to all of my resources. My learning from IPNB is that part of what blocks me in my aikido training is my neuroception of danger. At least in the safety of the dojo, fear is not an adaptive response. So, my challenge is to shift my neuroception of threat to one of safety which will allow more social engagement

(and I consequently more learning). In general, this process means activating my frontal cortex and de-activating my limbic system. This process will require considerable mindfulness and practice because the limbic system operates much faster and automatically than the cortex and will activate familiar old patterns of thinking in my cortex. Developing new patterns of thinking requires intention, attention and lots of repetition.

Methods of shifting my neuroception from danger to safety:

- Breath
- Slow down
- Mindfulness
- Smile
- Find a grounded position of safety within my body
- Activate my heart center
- Remind myself that I am a learner and don't need to do it perfectly
- Remind myself that my partner is my friend and wants the best for me
- Remind myself that Sensei is not my father; I am not disappointing him if I don't do it right.
- Remind myself that the dojo is a place of safety (physically and emotionally)
- Remind myself that I have taken hundreds of falls without serious injury.
- Remind myself that my body is protected by relaxing and softening.