

How Neurobiology Research Helps Psychotherapy and Spiritual Practice

A problem that psychotherapy and spiritual practice has historically shared is the disconnection between framework/practice and the neurobiological realities of the human nervous system.

Last month we talked about the change process involving human brains acting as complex systems (often in connection--LLQ--with other brains) that needed steady infusion of practice (state changes) to eventually result in trait changes (level changes on different lines).

Neuroscience now has captured the public imagination, with the 1990's often being referred to as, "The decade of the brain." Neuroscience is now a visible dimension in most people's worldviews. For example, one study showed that people (probably vORANGE and vGREEN, though that wasn't measured in this study) were more willing to accept new perspectives when neuroscience explanations were included. I've found that to be true in therapy.

There is much more help neuroscience can provide about crucial aspects of human functioning such as:

Judgment: Brains make reflexive (usually within 50 milliseconds) safe/not safe, good/not good, beautiful/ugly evaluations constantly about world, others, and self. We talked about working with these reflexes last conversation in the realm of critical judgments.

Mirror neurons: A major source of influence and interpersonal resonance, for good or ill. Mirror neurons are motor neurons that recapitulate another's state (including intentionality) when we look into each other's eyes.

Learning: Elkhonin Goldberg determined that the right hemisphere is the center for reflexive, habitual responses that happen almost instantaneously in reaction to inner and outer cues, and generally learns new reactions and routines *slowly*. He found that the left hemisphere is the center for considered responses that take longer--from a few seconds to minutes or hours--and can learn new routines quickly. The problem is that you must *consciously* practice the new routines sometimes hundreds of times before they become encoded as right hemisphere, quick, habitual responses.

10,00 hours. Daniel Coyle, in *The Talent Code*, explains the "10,000 hours" phenomenon, which involves stimulating neuronal mylenization, and engaging in "deep practice." Optimal deep practice requires passion, regular mistakes, expert correction, and a culture that supports excellence.

Creativity: A right brain process potentially guided and amplified by the left brain (and potentially intimately connected with field effects, ala Sheldrake's morphogenic fields, or the "Eureka!" experience described by Margarita Lasky).

Development as neural integration: Horizontal, vertical, lateral, interpersonal, temporal, and existential integration within and between nervous systems are all developmental lines in themselves.

Sex: The neurobiology of desire, attachment, stages of relationship, lust, jealousy, and infidelity influence us constantly. Learning about this helps people understand and manage lustful/intimate/romantic/attachment reactions in relationships and the world in general.

Intimacy: Neurobiological research has uncovered amazing findings on attachment, psychopathology, psychotherapy, and ontological evolution. Knowing the neurodynamics helps organize us to optimize all these processes.

Spirituality: Transcendent states, meditation, dark night, shame dynamics, the self-transcendent instinct harnessed away from self-doubt and into self-transcendence all have neurobiological components. Two current examples:

- The fMRI real time monitoring/regulating the pain center in anterior cingulate cortex.
- My heart rate variability (HRV) machine which I sometimes use to enhance meditations.

Enlightenment: Neural integration coupled with highly developed self-observation leads to the witness observing all with love and compassion. This requires a progressively more functional brain. It reminds me of Ken's assertion that formal operational capacities are necessary but not sufficient for developmental movement on most lines. Also, physically healthy people progress quicker in spiritual practice (according to some stories, one of the original purposes of karate when it was developed in ancient China).

State changes neurologically: Memories, impulses, willpower change with states. States change *at least* every 300 milliseconds most of the time. Brains are wired to privilege threat, so defensive states are easily activated and remembered, and euphoric states often require conscious practice to be retained. What you learn or agree to in one state can be inaccessible in other states. Common important examples are:

- Defensive states and states of healthy response.
- Sexual arousal--we become more impulsive and reckless when turned on.
- Transcendent states--unity with God and huge compassion are associated with high heart rate variability, and a frontal cortex expanded by contemplative practice--the frontal cortex *measurably* changes after as little as 8 weeks of meditation, and over a year of practice results in a *larger* right prefrontal cortex (especially on the right side).

Evolution is a central tenant of an emerging religion: vBLUE religion hasn't rejected evolution just because of loyalty to creation myths. Once any religion accepts evolution, it is a short jump to evolving values, practices, and spiritual understandings--essentially the conveyor belt concept. Michael Murphy calls this "evolutionary panentheism," and predicts a unifying

spiritual orientation to arise from this (by whatever names) in ways that unite all the wisdom traditions. I believe he's right. This leads religions to increasingly provide affirmative pathways up evolutionary ladders--for instance, socialized mind to self-constructing mind to self-transforming mind (ala Robert Kegan).

Humans take genetically programmed drives and transform them into art:

- Food into cooking, sex into tantra, affiliation into evolutionary mutuality, violence into martial arts, conversation into dialectic, toning into music, shelter into skyscrapers, rafts into ships, and running into airplanes.
- Technological advances have most commonly come from instruments of war (*The Art of War*) and musical instruments.

Evolutionary neuroscience: Structures and capacities arrive evolutionarily before actual functions arrive--much as computers arrived before all the adaptations and capacities for using computers arrived. We can trace back human neurodevelopment to crucial junctures where brain structures developed that gave capacities for order-of-magnitude advances in function. Even though most traits have multiple genes, there are nexus points in our evolutionary history. For instance:

- The FOXP2 mutation 200 thousand years ago gave us the capacities for grammar and metaphor--the building blocks of modern language. Language created new selection pressures for brains that could respond epigenetically to culture and *language* to enhance the development of the frontal lobes--29% of human brains and only 17% of chimp brains--which reached their current size 50 thousand years ago.
- The DRD4-7R mutation 50 thousand years ago--associated with a drive for stimulation and novelty--accompanied the diaspora out from Africa into all the ecosystems of the world.
- We now have brains that are shaped by screens--people born after 1970 have lower attention spans, higher stimulus thresholds, more ability to be comfortable with mutually exclusive positions, and generally enormously greater connectivity with other people--in other words, different structures. Creativity and empathy scores increased from 1964 through 1984, and then decreased going into the 2000's--essentially marking the rise of the dialed in, digitalized millennial generation. This takes us back to the evolutionary principle, new structures precede new functions. What are the emergent new functions of humanity?
- Evolutionary explanations have neglected LLQ evolution towards greater intimacy and mutuality through wider embrace. Expanded interpersonal mutuality capacities are crucial survival mechanisms, since over the last million years the biggest threats to humans have been other humans, and the best way to deal with a threatening other is to transform them--through social alchemy and skillful means--into allies and friends.

Integral development:

- Include and transcend informs evolutionary neurobiology, sociology, and anthropology. Tracks laid down long enough become incorporated into collectives as deep structures. Some deep structures, such as compassion for self and others, are inevitable results of genetic forces. Other deep structures, like what is the ring finger for a wedding ring, and the actual presence of a wedding ring, are results of some chance cultural variable that was enacted enough to become an enduring cultural fixture.

Meditation/contemplative practice opens up space in consciousness--allows you to self-observe more routinely and expertly. Wisdom and principle guide thought and action *within the space of consciousness*:

- Wisdom and principle change with worldview.
- Our worldviews communicate themselves to us with yums and yucks--attractions and repulsions reveal our habitual judgments, desires, and needs (both deficiency and being needs).
- Worldview is tremendously impacted by whether we're in defensive states or states of healthy response--*which can be observed in any worldview*. Observing a defensive state is a bridge into the unhealthy aspects of our current vMEME or altitude on various lines of development.

On another note

I've been reading Mathew Hussy's *Get the Guy*, Rob McNamara's *The Elegant Self*, and Ken's *Excerpts*.

- Ken--philosophical. He is continuing to create a language that most represents the emerging universe while amplifying depth of consciousness, compassion, and intra/interpersonal intimacy--horizontal and vertical growth.
- Rob is reaching for accelerating the evolution of consciousness starting with the reader--partly as an obligation to answer the global problems that threaten us, and partly as a plea to commit to adult development as a cultural standard. He offers specific paths to embodying Integral and accelerating the evolution of consciousness.
- Hussy is a trustable masculine presence aligning with the masculine in women to help them blossom their feminine. He starts with their d-needs--lonely, want a guy, feel powerless and disconnected, feel unattractive, want love. He then lights up b-needs to feel confident, social, generous, powerful, beautiful. He encourages women to practice compliments, working a room (WAR), introducing themselves, getting numbers, conceptualizing pouring social connections through three funnels, becoming autonomous and present, blossoming their natural social interests, being a generous and caring social presence, etc. This leads to mutuality (implicitly and explicitly answering feminine b-

needs), where he encourages authenticity, flexibility, generosity, shared pleasure as healthy nourishment, social contribution, and assertions.

- Human behavior is run off of habits, needs, fears, and social attunements. We want to harness focus, intent, and action, in service of principle, and driven by commitment/resolve. A lot of coaching types like Hussy become extraordinarily adept at creating state changes and then harnessing them to new habits--a particularly potent form of accelerating development.

Psychotherapy's bad rap as primarily treating "mental illness." One reason psychotherapy has gotten a bad rap, is that there is a tendency to identify someone by their personality, script (from Transactional Analysis), or problem (depression, anxiety, addiction), and then tell the person, "We're going to 'fix,' 'heal,' or 'transcend,' your personality/script/problem.

- *This is not primarily what psychotherapy does!* Ask any experienced therapist. What we're really doing is connecting to and allying with your soul/authentic self/principled self (from your own principles), and penetrating/revealing/adjusting the personality/script/problem again and again, all the time encouraging you to embody the insights in focus/intent/action/in service of principle/driven by resolve--essentially creating state changes and then harnessing them to new habits.
- Problems resolve and negative personality traits improve, but the real action is the expansion of horizontal and vertical health--states become traits if you practice them enough. Therapy remediates symptoms, enhances health, and supports development using endless variations of these processes..
- D-needs (deficiency needs like hunger, thirst, lust, dominance, belonging) and b-needs (self-actualization, self-transcendence, altruistic love) show up all the time, sprinkled throughout our day. Current needs interact with genetically-based motivation systems that have developed over a lifetime of personal development and social interactions with others, ourselves, and our life conditions--the cultures we're embedded in--*always biased towards threat and survival (our evolutionary survival training from our reptilian and single celled past), but also biased towards affiliation and cooperation (our evolutionary survival training from being social animals, and then social human animals capable of turning intimacy into art).*

Millennials are a hope for our future:

- Millennial creativity and empathy have *statistically* reduced from '84 to 2000. This reduction in empathy and creativity probably reflects more extremes at both ends, with an added edge to extended adolescence and personal, face-to-face disconnection driven by a social media dominated culture.
- The good news is that millennials are *naturally worldcentric*. In the U.S. they are 80 million combinations of vORANGE/vGREEN--both entering and exiting--poised to

pop into vYELLOW. They, combined with developing boomers, are probably the generation that will drive this culture into the 10% Integral transformation.

- We had a peak experience of this with the Obama elections, but for it to be stable millennials probably need to collectively embrace their power as a social force--essentially become much more involved in the political process as true change agents.
- Millennials don't respect authority as much as previous generations (who were more vBLUE and vORANGE) but, unlike boomers, also don't fear it much.