

Ethically integrating neuroscience into counseling: Nine key considerations

A clearly perceptible shift has taken place in counseling and mental health in recent decades, brought about by the surge of popular and empirical literature on the brain and neuroscience. In Allen Ivey's 2012 text *Theories of Counseling and Psychotherapy: A Multicultural Perspective*, he asserts that "neuroscience promises to be a force that will continue to transform the practice of counseling and psychotherapy."

Even so, counselors may be unclear about what neuroscience is and how it might be integrated into counseling. In this article, we outline nine key considerations to help counselors apply neuroscience in counseling practice.

1) Neuroscience integration is metaphorical. Metaphors assist in translating a new or abstract concept into a more concrete one that an individual already grasps. The use of metaphors in therapy has a storied history (from Carl Jung to Milton Erickson) and continues today. In my (Chad Luke's) book *Neuroscience for Counselors and Therapists: Integrating the Sciences of Mind and Brain*, I describe how a metaphoric approach to neuroscience integration harnesses the richness of neuroscience to assist counselors and clients in understanding mental health phenomena. For example, neuroscientific descriptions of how our vision is constructed provide a particularly rich metaphoric resource.

In the clinical setting, consider a client who cannot seem to understand her visceral reaction to a particular person or behavior. Perhaps she is in conflict with a loved one and the two can't seem to see eye to eye, so to speak. A conflict in which they argued over the

details of a recent event exemplifies the disconnection.

In session, the counselor might show the client a video of mountain climber Erik Weiheymayer, who uses a device known as BrainPort to "see." Erik is the first blind person to climb Mount Everest. The BrainPort device uses 300 sensors on a pad that is placed on Erik's tongue and creates visualization patterns based on what a video camera he wears on his sunglasses is seeing. Erik's occipital lobe processes the signals as if they originated from his eyes. Because of this, he is able to "see" well enough to climb a mountain or play tic-tac-toe with his daughter.

Using this as a metaphor, the counselor can help the client learn that what she sees from her perspective in the relationship has more to do with how environment, experiences and her emotional state at the time are influencing her than anything her eyes are recording.

2) Neuroscience integration with counseling is emergent and constructed. As metaphor, neuroscience integration is not real; or rather, neuroscience integration is real only to the extent that it is constructed. The concept of "mirror neurons" provides an example of the constructed nature of neuroscience and its application to daily life.

First of all, mirror neurons in the human brain are still a bit of a working hypothesis, based primarily on indirect evidence. A "mirror" is a way of conceptualizing the function of these neurons, in much the same way that the limbic system is a misnomer used for simplicity. These neurons have been

dubbed *mirror* because the firing patterns in the brain of someone who is observing a behavior appear very similar to the firing patterns of the person engaging in the behavior.

The problem is that although the behavior is mirrored neurologically, the meaning one gives to that behavior is individual, particularly following language acquisition in early childhood. The interpretation of the mirrored experience is based on the observer's own history and experiences, especially in terms of empathic resonance.

The result is something that I call *projective sympathy* rather than empathy in the therapeutic sense. The viewer sees a behavior in another person, and his or her brain fires in a mimicked pattern that is then interpreted in the limbic system and associated insular cortex by the viewer. This interpretation is then evaluated to determine appropriate action. So, the notion of mirror neurons not only is speculative and constructed, but can create a reductionist picture of empathy and the neural processes that underlie it.

3) Neuroscience integration is intimidating ... and it isn't. Neuroscience, with its focus on cellular and molecular levels of functioning, is highly specialized and outside the reach of many of us who do not have training and expertise in subject areas such as biochemistry and physiology. In that way, neuroscience certainly has limited accessibility to laypersons.

Fortunately for counselors and counselor educators, integration does not involve learning lab-based neurobiology. Instead, it begins with addressing the "so what?" of lab findings and works to

implement this knowledge into clinical practice. Neuroscience simply provides another set of tools — a new way of connecting with our clients and helping clients connect with themselves and those around them.

Most counselors will rarely need to know the molecular-level functioning of sodium and potassium ions and anions in practice, only to trust that there are some among us in the world who do. However, it is useful for counselors to understand that the synchronous functioning of the brain's neurons underlies all that we are, do, think, feel and relate to as humans (it can take as many as 10,000 neurons firing in synchrony to create one action potential — the signal traveling down and across one neuron to the next). In practice, clients may benefit from knowing that although their individual brain drives all of who they are, they can in turn harness their brain to create change.

4) Neuroscience integration is popular, empirical and philosophical. Neuroscience integration is, at its foundation, based in both empirical neurobiological and counseling research.

Whereas there is a significant allure to popular psychology and neurobiology, ethical integration is focused on understanding the biological components sufficiently to approach application to well-grounded counseling principles.

Counselors question neuroscience integration that seems to violate ethical foundations and *nonmaleficence*. Ethical violations, both general and specific to client harm, occur more often from ignorance or practicing outside one's scope of practice than they do out of malice. This is a caution to be heeded closely by counselors seeking to integrate neuroscience into counseling. Ethical integration demands adherence to counselor scope of practice and well-grounded approaches.

Regardless of the potential that neuroscience and its integration with counseling may hold, counselors never use the "science" to permit the violation of client rights. That said, neuroscience has a rapidly expanding literature that is challenging to keep pace with. This calls counselors to further question what we may think we know because the picture of brain processes is always occluded

as the development of increasingly sophisticated imaging techniques and research methodologies continues.

5) Neuroscience integration is not a panacea. Despite many of the claims in the popular press, neuroscience does not yet hold the key to all of humanity's (or even an individual's) struggles. It does indeed hold great potential, but as most counselors recognize, there are rarely any shortcuts to healing and wholeness.

Clients often enter therapy hoping for a quick fix, a solution or an answer. Counselors are ethically obligated to inform their clients not only that there are no quick fixes, but also that they might actually feel *worse* before feeling better. The same is true in applying neuroscientific findings to therapy.

For all of its promise and contributions, neuroscience is not a cure-all. Historically, trepanation (the process of drilling holes in patients' skulls to release demons), phrenology (the reading of skull undulations to divine personality) and lobotomies all serve as reminders of past dubious "cures." Our perceived need to find a panacea does not create it. Counselors must understand this,



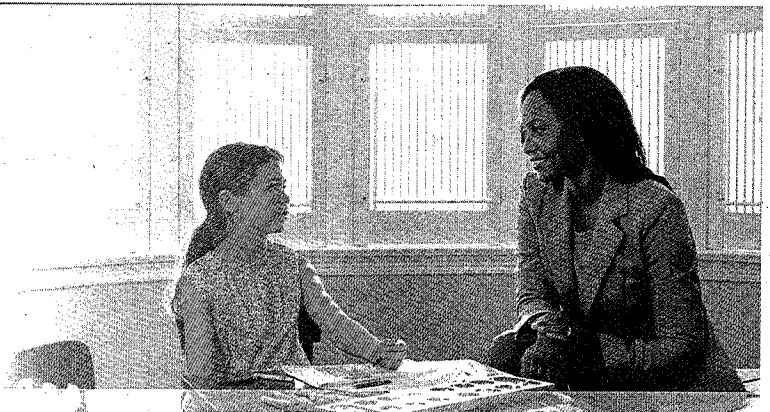
EMPOWER OTHERS

WITH A DEGREE FROM
CAPELLA UNIVERSITY

Counseling Programs Aligned to Professional Standards

Gain the skills and knowledge to make a positive impact in the lives of others. At Capella you'll find relevant, credible counseling programs, including:

- MS, Addiction Studies
- MS, Marriage and Family Counseling/Therapy**
- MS, Mental Health Counseling*
- MS, School Counseling*
- PhD, Counselor Education and Supervision*



Professional Development Options

With Capella's graduate certificate programs and individual courses you can increase your knowledge, earn credits, and fulfill content requirements to prepare for licensure.

Learn more at Capella.edu.



*Capella University's PhD in Counselor Education and Supervision, MS in Mental Health Counseling, MS in School Counseling, and MS in Marriage and Family Counseling/Therapy programs are accredited by the American Counseling Association's Council for Accreditation of Counseling and Related Educational Programs (CACREP) through March 31, 2020.



**The MS in Marriage and Family Counseling/Therapy program at Capella University is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE), 112 South Alfred Street, Alexandria, Virginia 22314. 703.838.9808, coa@aamft.org.

and clients must be guided toward acceptance of it. Ethical integration means continuing to sit with clients in the ambiguity of the solutions to their success, even when a new approach is on the horizon.

6) Neuroscience integration is demystifying and normalizing. Clients often enter therapy with a sense that something is wrong, due in part to the mysteriousness of their experience. Neuroscience integration provides the *how* and the *what* underlying thinking, feeling, behavior and relationships. Counselors can use this to demystify clients' experiences.

For example, brain science elucidates how anxiety processes work and can assist clients in addressing the anxiety itself without further complicating the clinical presentation with meta-worry. Bonnie Badenoch, in her 2008 book *Being a Brain-Wise Therapist: A Practical Guide to Interpersonal Neurobiology*, describes numerous clinical scenarios in which explaining brain phenomena related to diagnoses assists clients in not judging themselves for their experiences. She calls this process "holding their brain in mind."

Think for a moment about the last time you tried to change a long-standing or entrenched behavior. Why is it so difficult to change these behaviors, be they simple or significant? Donald Hebb provided a major piece of this puzzle in the 1950s when he demonstrated something that became a popular mantra: Neurons that fire together, wire together. Essentially, when neurons fire in synchrony, either repeatedly over time or intensely, they become increasingly likely to produce the same action potentials in the same pattern in subsequent situations.

In the clinical setting, part of the challenge of changing thoughts or behaviors lies in the bewilderment many clients feel regarding how intractable change can seem. Clients — and all humans for that matter — can be tempted to wait to change until they "feel" different enough to act, rather than changing behavior so that they "feel" different.

Hebb's rule has incredible explanatory power in elucidating this behavioral principle: The only way to change is to change. In this way, clients' struggles can move from character-based ("I can't

change because I'm bad, weak, have no willpower, etc.") to brain-based ("My brain makes change difficult but also can facilitate change").

7) Neuroscience integration is best understood from the inside out. One view of brain development is that brain regions developed as environmental needs required. The earliest of brain structures, the hindbrain, is focused on survival. It manages basic life functions such as regulating breathing and heart rate and includes an internal threat-detection system. Later, the limbic system developed to respond to a more social environment that contained rewards. Therefore, the early parts of the forebrain developed a reward-detection system. Most recently, the cerebral cortex developed to adapt to increasingly complex social environs, adding to the system a context-detection system.

Therapy has been known to begin with interventions involving the most recently developed (in evolutionary terms) brain regions. In fact, cognitive behavior therapy and rational emotive behavior therapy are two of the main empirically supported treatments recognized by insurance companies and are often the most straightforward to measure for research purposes.

These approaches posit that abstract reasoning, critical thinking and problem-solving skills are essential early on in counseling so that problem thoughts, feelings and behaviors can be brought into alignment with individual and social expectations (i.e., top-down processing). However, it has been increasingly demonstrated that assisting clients in managing their breathing and heart rate and engaging in other mindfulness-based interventions aids them in thinking about their problems more clearly (i.e., bottom-up processing).

8) Neuroscience integration is theory validation and construction. Neuroscientific findings have been used to legitimize existing counseling theories, support particular theory-based interventions and construct new integrative theoretical models. It is vital, therefore, that counselors recognize the differences (this topic is covered in more depth in *Neuroscience for Counselors and Therapists*).

A couple of examples of theories of integration stand out in the popular press. Dan Siegel, author of *The*

Developing Mind, has done tremendous work in advancing interpersonal neurobiology, and Allan Schore has done likewise with relational trauma and its impact on the developing brain.

In assessing theory validation and construction via neuroscience, one must remember that the common factors debate has in essence "been there, done that." Research on therapeutic outcomes has shown that arguing which counseling theory is best is not only moot but also inaccurately conceptualized.

As Fred Redekop (this article's co-author) discusses in his book *Psychoanalytic Approaches for Counselors*, effective counseling theories share similar mechanisms — the activation of dormant client resources and motivation for change in the context of an engaged and empathic therapeutic relationship that is modifiable by client feedback — and address common therapeutic themes that were inaugurated by Sigmund Freud. He argues that attempting to use neuroscientific research to validate a particular approach or promote one over another is an ill-advised attempt to revive an argument that has been convincingly settled.

I (Chad) also wonder if new insights brought about by neuroscience research could lead to a better understanding of what approach may be more effective at certain times. Thus, rather than rehashing the old question, neuroscience in a sense allows us to ask new questions.

9) Neuroscience integration offers a reflection of the counseling relationship. Perhaps because he was a neurologist before he was a pioneer in psychology and psychoanalysis (but from a neuroscience integration perspective), Freud got a lot of things right, and his perceptions of the clinical relationship hold prescient implications.

For example, Freud utilized "the couch" for a variety of reasons. Chief among them was that he did not want to be distracted by the analysts' nonverbals. He also wanted to give them emotional privacy and not unduly influence their disclosures through their attempts to read his body language. Clients fear being misunderstood, judged and thought to be "crazy" by their counselors, and these messages can be (mis)communicated nonverbally.

Neuroscience's contribution to this hallmark therapeutic principle cannot be overstated. The implicit (outside of consciousness) awareness of the brain's emotions and threat-detection processes operate regardless of the other person's intention. And in many cases, neither is aware of the messages sent or received.

A great example of this is a growing body of literature on implicit bias, wherein the sender of the bias is unaware of what is being communicated. Likewise, the recipient is also often unaware of this. Senders and recipients sense something is amiss, but they may not be able to name it in the moment. They may be aware of some negative internal experience, but they might not be able to locate it environmentally. It is reasonable then to assume that counselors leave an impression on their clients regardless of whether they are consciously aware of it.

Conclusion

Counselors, as they become more sophisticated consumers of neuroscientific literature as it specifically relates to counseling, will also be

in position to better evaluate more general applications of neuroscientific research. Far from being cowed by dense articles using terms such as "estrogen-mediated oxytocin receptor levels," we — as neuroscientifically prepared and informed counselors — might instead crow, "Bring it on!"

Instead of being put off by the jargon, we will be in a better position to critically examine neuroscience's tantalizing insights. We will know that this research, as suggestive as it is, does not magically solve all of our clients' attachment issues. Instead, it is yet another example of the emergent nature of neuroscientific research and, as well-informed clinicians, we will be able to cautiously and responsibly interpret these and other findings to our clients.

Lori Russell-Chapin and Laura K. Jones serve as co-editors of the Neurocounseling: Bridging Brain and Behavior column. Contact them at lar@fsmail.bradley.edu and ljones3@unca.edu, respectively. ❖

Chad Luke is a counselor educator at Tennessee Tech University in Cookeville, Tennessee. He is a licensed professional counselor, national certified counselor and approved clinical supervisor. His most recent book is *Neuroscience for Counselors and Therapists: Integrating the Sciences of Brain and Mind*. Contact him at cluke@tntech.edu.

Fred Redekop is an associate professor in the Department of Counseling and Student Affairs at Kutztown University of Pennsylvania. He is a licensed professional counselor, national certified counselor and approved clinical supervisor. Contact him at redekop@kutztown.edu.

Letters to the editor:
ct@counseling.org

Live Session DVDs From ACA!

Working With Perpetrators and Targets of Cyberbullying

Sheri Bauman

Dr. Bauman demonstrates counseling strategies that can be used with individuals involved in cyberbullying through role-plays with a student that illustrate the experiences of both a target and a perpetrator.

2013 | 90 minutes | Order #78259

Working Effectively and Affirmatively With Queer and Questioning Youth

Colleen R. Logan

Dr. Colleen Logan demonstrates through two role-plays how to effectively address the myriad issues of adolescence, while establishing client rapport and trust, affirming different identities, emphasizing strengths and possibilities, and ameliorating pain and disenfranchisement.

2013 | 90 minutes | Order #78258

Promoting Growth With a Group: Performing in the Here and Now

Samuel Gladding

This demonstration of a group in the performing stage focuses on how both the leader and group members can foster growth. Group leader skills that promote interaction, connectivity, and cohesion are illustrated, as is the power of group members to help others in the group with issues such as loss, indecision, anxiety, and regret.

2013 | 90 minutes | Order #78260

Each DVD List Price and ACA Member Price: \$109.00

Produced by Microtraining Associates

Counseling.org/publications

800-422-2648 x222

(M-F 8am – 6pm)



AMERICAN COUNSELING
ASSOCIATION