

The neuroscience of listening, microskills and empathy

The counseling relationship changes the brain, facilitating neurogenesis and strengthening the development of new neural networks. Neuroscience and neurobiology have shown that the vast majority of what our field has done for years is correct and makes a positive difference for our clients.

Empathy is a necessary (and sometimes sufficient) condition for the relationship, enabling change in and of itself. Recent neuroscience findings on empathy show that the original ideas of Carl Rogers are even more complex than we have thought, but our basic understanding remains solid.

Listening is the building block of the relationship. New research in Japan reveals that “listening lights up the brain” (see image below). A study by Hiroaki Kawamichi and colleagues in the journal *Social Neuroscience* found that the Rogerian microskills of attending — namely paraphrasing, reflecting feelings and summarizing — made the relationship work. This is not new to counselors, but it is reassuring that the foundation of the American Counseling Association’s humanistic orientation now has functional magnetic resonance

imaging (fMRI) evidence supporting what we have known for years. Listening allows us to bring out client stories and facilitates growth and development.

More specifically, the Japanese authors noted key features to activate listening. First, the ventral striatum functions in abstract rewards for listening, providing “a warm glow” when receiving positives. We think of Rogerian positive regard and authenticity as key aspects of listening, while the microskills approach in 1966 first identified the concrete behaviors of listening in what we termed “attending behavior.” The importance of culturally appropriate eye contact, body language, vocal tone and verbal following have since become standards of the skills course and counseling practice: “If you are puzzled in the session and don’t know what to do, listen!”

The right anterior insula has been identified as key in emotional appraisal, both present and predicted for the future. Ayda Ghahremani and colleagues, writing in *The Journal of Neuroscience* in 2015, pointed out that the right anterior insula identifies what is salient and has a close connection with the anterior cingulate cortex, which is concerned with empathy, emotion and reward anticipation. Together

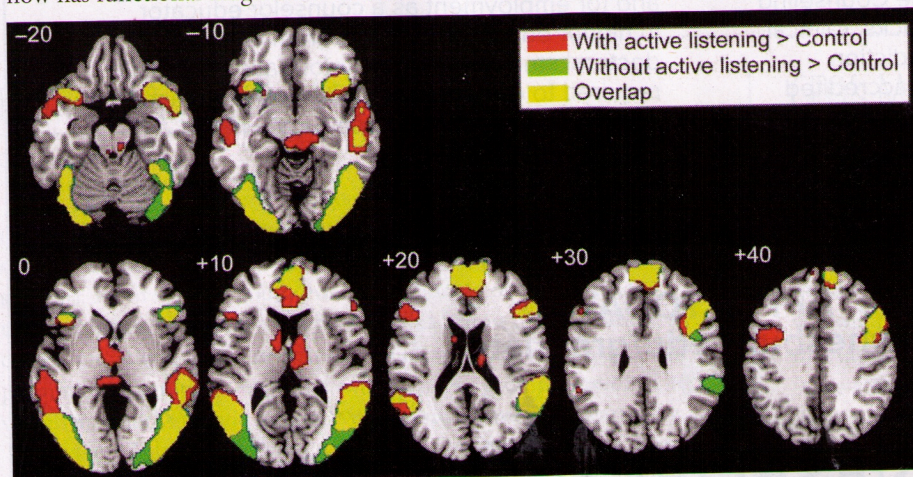
they are important in inhibitory control a critical factor in dealing constructively with emotion.

Mentalizing is also termed Theory of Mind (ToM). ToM is the “ability to attribute mental states — beliefs, intentions, desires, pretending, knowledge, etc. — oneself and others and to understand that others have beliefs, desires, intentions and perspectives that are different from one’s own.” ToM was originally labeled and defined by David Premack and Gu Woodruff in 1978 as they studied the behavior of chimpanzees based on the 1925 work of Wolfgang Köhler, one of the founders of Gestalt psychology. Almost 100 years later, we see Köhler’s early work becoming relevant in many fields related to physical and mental health.

The medial prefrontal cortex and superior temporal sulcus are associated with emotion, memory and complex cognitive processes such as ToM/mentalizing, which is one component of holistic empathy. According to Michael Beauchamp of the Baylor College of Medicine, the superior temporal sulcus is involved in the perception of where others are gazing (joint attention) and is thus important in determining where others’ emotions are being directed.

Polyvagal theory and safety

In 1995, Stephen Porges originated a theory, focused on the vagus nerve, that provides evidence supporting our empathic approach. Porges prefers the word *compassion*, which brings back to us any session we have observed with Carl Rogers. The vagus nerve, which enervates the parasympathetic nervous system, extends from the brainstem to the abdomen and regulates heart rate, breathing and digestion, plus other organs supporting homeostasis. It is often thought of as “rest and digest” and is critical, as Porges documents, in both calming functions and feelings of safety. This, in turn, leads to attachment theory.



Red, green and yellow indicate brain activation with active listening behavior, without active listening behavior and the overlapping activation, respectively (image used by permission of Taylor & Francis from the 2015 *Social Neuroscience* article “Perceiving active listening activates the reward system and improves the impression of relevant experiences,” by Hiroaki Kawamichi et al.).

Physiological needs and safety are the foundation of Abraham Maslow's hierarchy of needs. What Porges has done returns us to Maslow, but with a difference. We too often focus on self-actualization in counseling and therapy, with insufficient attention paid to Maslow's foundation of physiological and safety needs. Porges has brilliantly, and perhaps unintentionally, clarified the importance of Maslow's original ideas by identifying the vagus nerve and its connections as the physiological basis for safety. If we are to conduct effective counseling and therapy, we need to provide a safe environment in an effective relationship. As part of that, the calming function of the vagus nerve can facilitate feelings of safety for counseling.

Porges focuses on four factors of relationship that will sound familiar to those who have worked with the microskills since 1968, although his terminology is a bit different. He gives considerable attention to prosodic vocal tone (quality of intonation), gestures/body language and style of eye contact as key to building feelings of safety. He also speaks of socialization where verbalizations provide content and context to these key nonverbal dimensions.

Counseling skills, calming and activating

The microskills framework first focused on listening skills and attending behavior in 1966-1968 with a research group composed of Allen E. Ivey, Cheryl Normington, C. Dean Miller, Weston Morrill and Richard Haase. During that time, the "3 V's + B" (visuals, vocal tone, verbal following and body/facial language) were identified through the study of videotaped sessions. Porges adds important information to the foundational interview skill of attending because it is through the 3 V's + B that we provide safety, and through the relationship, we can encourage further awareness of emotions and feelings. We are not just counseling with words; we are working with the whole of the client's body, brain and mind. An axiom of today's microcounseling is that the mind-brain-body axis operates in an atmosphere of persons and the environment.

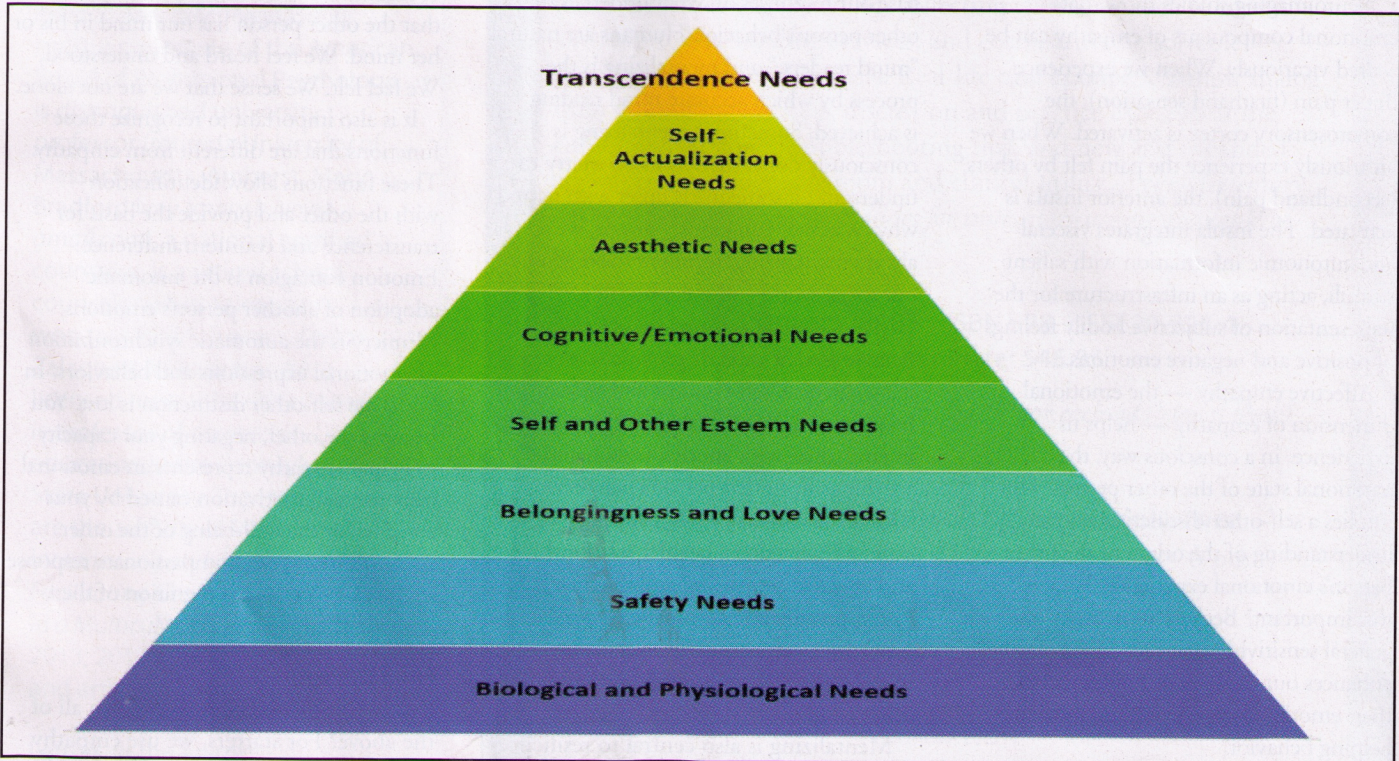
Bringing out client concerns via careful listening is usually, but not always, calming. Thus, additional microskills based on attending are important to include. Paraphrasing, encouraging, reflecting feelings and summarization are needed to bring out the client's story. As stories of client issues develop and evolve, there

is a natural tendency to relax in a safe environment. But, at the same time, these stories will often activate the sympathetic nervous system and perhaps become distressing. It is here, of course, that a calm and effective counseling relationship becomes all the more central. The basic skills of attending are critical. A warm supportive vocal tone, culturally appropriate body language and eye contact, plus careful attention to verbalizations, almost inevitably lead to calming.

Note, however, that activation of the sympathetic nervous system is typically necessary for change and creative movement. Relationship and safety provide the foundation for action. Microskills such as confrontation, interpretation/reframing, reflecting meaning and the influencing skills of directives, logical consequences and psychoeducation are best provided in an environment that combines both safety and challenge.

Counseling and therapy seek to provide an allostatic balance of calming and activation with an underlying background of physiological safety. We can take risks, learn and develop in a compassionate counseling relationship.

The influencing skills provide often-necessary routes toward action and



Carlos Zalaquett's rendering of Maslow's hierarchy of human needs.

behavioral and cognitive change. All of these skills, used effectively, lead to learning and the development of new neural networks — and, at times, new neurons (neurogenesis).

Components of empathy

These networks of neurons provide the basis for various components of empathy, such as cognitive empathy, affective empathy and mentalizing. Listening, the capacity to “see” the world as another sees it, and the ability to sense the emotional states of others are greatly facilitated by empathy. A meta-analysis across 40 fMRI studies showed that affective empathy is associated with increased activity and greater gray matter density in the insula, whereas cognitive empathy is associated with higher activity and greater gray matter density in the midcingulate cortex and the dorsomedial prefrontal cortex.

Advances in neuroscience are confirming that empathy is a multicomponent construct, essential in effectively navigating our social environment, listening for deep intellectual and emotional understanding, and providing effective counseling and therapy. Emotional empathy helps us understand the emotions experienced by others, whereas cognitive empathy helps us understand the motivation of others’ behaviors.

Neuroimaging studies show that emotional components of empathy can be shared vicariously. When we experience direct pain (firsthand sensation), the somatosensory cortex is activated. When we vicariously experience the pain felt by others (secondhand pain), the anterior insula is activated. The insula integrates visceral and autonomic information with salient stimuli, acting as an infrastructure for the representation of subjective bodily feelings of positive and negative emotions.

Affective empathy — the emotional dimension of empathy — helps us experience, in a conscious way, the emotional state of the other person. This implies a self-other distinction and an understanding of the origin of the other person’s emotional experience. Why is this important? Because it increases our general sensitivity to the emotions of others, enhances our capacity to fully understand their emotional experience and facilitates helping behavior.

Cognitive empathy is the ability to understand the minds of others and predict

their behavior without necessarily sharing their emotions. It builds social expertise in a world populated with emotional humans. Cognitive empathy with minimal affective empathy can also facilitate competitive, antagonistic and deceptive behavior. Cognitive empathy relies on dorsal regions of the medial prefrontal cortex for behaviors such as perspective taking and direct and reflected self-knowledge.

Cognitive empathy may also rely on mechanisms underlying ToM (see “Dissecting the Neural Mechanisms Mediating Empathy” by Jean Decety in *Emotion Review*), such as the dorsomedial prefrontal cortex and the temporoparietal junction. However, cognitive empathy and ToM are also different. Cognitive empathy is more involved in attributing emotional states, whereas ToM is more involved with taking on the perspective of another person and attributing to that person particular cognitive states.

Mentalizing

Mentalizing is the spontaneous sense we have of ourselves and other people. Human behavior is based on fluid mental states, which makes understanding others difficult. All of our actions are driven by needs, feelings, desires, beliefs or reasons. When we interact with others, we automatically read their underlying mental states and base our responses on what underlies the other person’s behavior. Humans are natural “mind readers,” and mentalizing is the process by which accurate mind reading is achieved. Sometimes mentalizing is consciously done, such as when we try to understand if someone is upset with us and why. Whether consciously or not, we are always mentalizing, trying to make sense of our social world and our place in it.

Mentalizing affects our well-being in many different ways. It provides a sense of self-awareness, self-concept and self-control. It serves as the basis of relationships. It helps us empathize with another person and see things from that person’s perspective. This is the cornerstone of common human interactions, healthy relationships and effective counseling and therapy. It makes possible the automatic or conscious moment-to-moment adjustments we make to the verbal and emotional responses of other people.

Mentalizing is also central to resilience — the capacity to adapt to adversity and challenges. Individuals who can mentalize

in the face of challenging or traumatic events are less vulnerable to stress and mental disorders. Conversely, promoting mentalizing in people afflicted by mental disorders can improve their quality of life and accelerate recovery. Mentalizing increases their capacity to make meaning of adversity, helps them develop a sense of purpose, facilitates problem-solving, allows for more flexibility, improves communication and promotes mutual empathy.

Attending behavior and skilled observation are basic to mentalizing and empathy. The skill of paraphrasing is most closely related to cognitive empathy, whereas reflection of feeling refers to affective empathy. Summary, particularly of extensive client comments, is key to mentalizing. The goal is not only to understand the client’s cognitive and affective worlds, but also to integrate them in a way that requires understanding the client’s mental state more fully. The summary is primarily cognitive but includes client emotional and feeling tone. Because emotions are often first reactions and typically occur before cognition regulates emotion, consistently think about (mentalize) the possible underlying emotions that remain unsaid.

Furthermore, the most fulfilling counseling interactions involve a meeting of minds. We feel reassured when we sense that the other person has our mind in his or her mind. We feel heard and understood. We feel felt. We sense that we are not alone.

It is also important to recognize those functions that are different from empathy. These functions allow identification with the other and provide the basis for transference and countertransference. Emotion contagion is the automatic adoption of another person’s emotions. Mimicry is the automatic synchronization of emotional expressions and behaviors. In both, the self-other distinction is lost. You become the other, negating your capacity to help. Sympathy represents an emotional response and motivation caused by your concern for the well-being of the other person. This is your compassionate response to the other but not recognition of the emotional state of the other.

Final thoughts

Why should we be interested in all of the above? For starters, we use empathy for communicating with others, building relationships (especially counseling

relationships) and consolidating our understanding of others, including our clients. Empathic listening is critical for building a therapeutic relationship and a successful counseling intervention. Deficits in empathic listening may lead to ineffective counselors, deficient counseling relationships and potentially iatrogenic interventions.

Rethinking the Rogerian/humanistic roots of empathy through the lens of neuroscience provides an opportunity for more effective teaching and practice of relationship and counseling skills. More time needs to be given in our curriculum to the centrality of empathy in its full complexity. The three distinctions of cognitive empathy, affective empathy and ToM provide a useful and broader framework for counseling and therapy practice.

Portions of this article are adapted from "Systematic Interviewing Microskills and Neuroscience" by Allen Ivey and Thomas Daniels, published in the *International Journal of Communication* and used by permission of USC Annenberg Press. ♦

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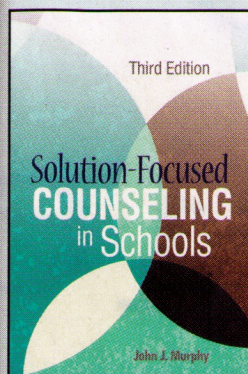
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