The background features abstract, overlapping geometric shapes in various shades of blue, ranging from light sky blue to deep navy blue. The shapes are primarily triangles and polygons, creating a dynamic, layered effect. The central text is set against a white background that is partially framed by these blue shapes.

# Your Brain on Psychological Counseling

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# Context

- ▶ The human brain and body change constantly;
- ▶ They are *plastic*, in the sense of *responsive* to environmental conditions;
- ▶ including significantly to psychological meaning-making (See Dr. Norman Doidge, *The Brain that Changes Itself*, 2008);

# Homeostasis *plus* adaptability

- ▶ Accomplished through the central nervous system - seeks to stay in balance by initiating relaxation when “danger” has passed;
- ▶ Metabolism - maintaining blood sugar and blood pressure;
- ▶ Repair and regeneration - especially during deep sleep;
- ▶ However, the brain and the body *adapt biochemically* to the *perceived state* of the environment;
- ▶ *Perception* includes both the sensing of internal and external data picked up by nerves *and* the meaning the conscious mind makes of what arises to awareness in the cerebral cortex part of the brain;
- ▶ This is characteristic of all living systems - *they can be seen to reflect their environment*

# Where we have come from

- ▶ Within one generation: that disease and illness do not present the same ways across cultures;
- ▶ That different cultural arrangements *affect the nervous system* in different ways;
- ▶ That the *meaning* that people put onto their experience affects their metabolisms and the state of their immune systems;
- ▶ That we continue to grow new brain cells throughout our lives;
- ▶ That the connections possible between brain cells are potentially limitless;
- ▶ That “genetics may load the gun, but lifestyle pulls the trigger!” (Dr. Pamela Peeke)

# Psychotherapy today

- ▶ Not only about cognition or behavior anymore but the totality of *wellness*;
- ▶ That to single out mental processes as the only focus of change is artificial and inadequate in the light of the *reciprocal* influence of physical and mental states;
- ▶ We have done “global assessment of functioning” for a long time but there is a new urgency to paying attention to client/patients’ diets, lifestyle habits, and environmental conditions;
- ▶ The death of the Western cultural myth of mind/body separation

# *Multiplicity vs. reductionism*

- ▶ The mind cannot be *reduced* to the brain - our capacity for making *meaning* transcends or *escapes* the material nature of brain cells and neurotransmitters;
- ▶ We see this in *creativity*;
- ▶ The present state of our understanding is that we, as well as other living systems, are *not just one kind of thing*;
- ▶ That we are enormously complex as beings and *manifest in multiple ways*;
- ▶ That our own psychological state has an effect on others (see *mirror* neurons)
- ▶ That *the biological and the psychological* dimensions of ourselves are deeply entwined and are not reducible to one another

# Lifestyle and habitual thought intervention

- ▶ Evidence for the necessity of a more holistic view of the human condition derives from *functional neuroimaging* and *functional medicine*;
- ▶ Changes in *lifestyle* and *habitual thought* can effect deep biological and psychological change;
- ▶ See the work of Dr. Daniel Amen, at [www.amenclinics.com](http://www.amenclinics.com)
- ▶ And Dr. Lissa Rankin, at [www.LissaRankin.com](http://www.LissaRankin.com)

# A dynamic spiral of complex interaction

- ▶ Ourselves as dynamic (versus genetically determined, for example), very significantly involves *meaning-making* and the *fight, flight-or-freeze response*;
- ▶ Brain, metabolic, and immune expression, specifically in the form of *habituated neural pathways*;
- ▶ That this is what psychological counseling has been working with all along;
- ▶ That this is *correlated* to if not *causal* in the bulk of the conditions treated in biomedical practice;
- ▶ Which is to say that, as clinical practitioners, whether psychological or biomedical, we are dealing with *the stress response* in its various expressions (see Amen's brain scans)

# Irony #1: It's all in your head!

- ▶ Counseling client/patients will tell you that doctors have said to them, “it’s all in your head!”
- ▶ In fact, yes! Our brains help us make the meaning we assign to any situation;
- ▶ And depending on the meaning we have assigned, there are *metabolic consequences*, especially if *habitually negative*;
- ▶ Psychotherapists and physicians should be working together;
- ▶ Example: the *hurry* disease, and the role of stress in *metabolic syndrome*;
- ▶ Note that wherever the American lifestyle goes, the same chronic illnesses, both psychological and physical, soon follow

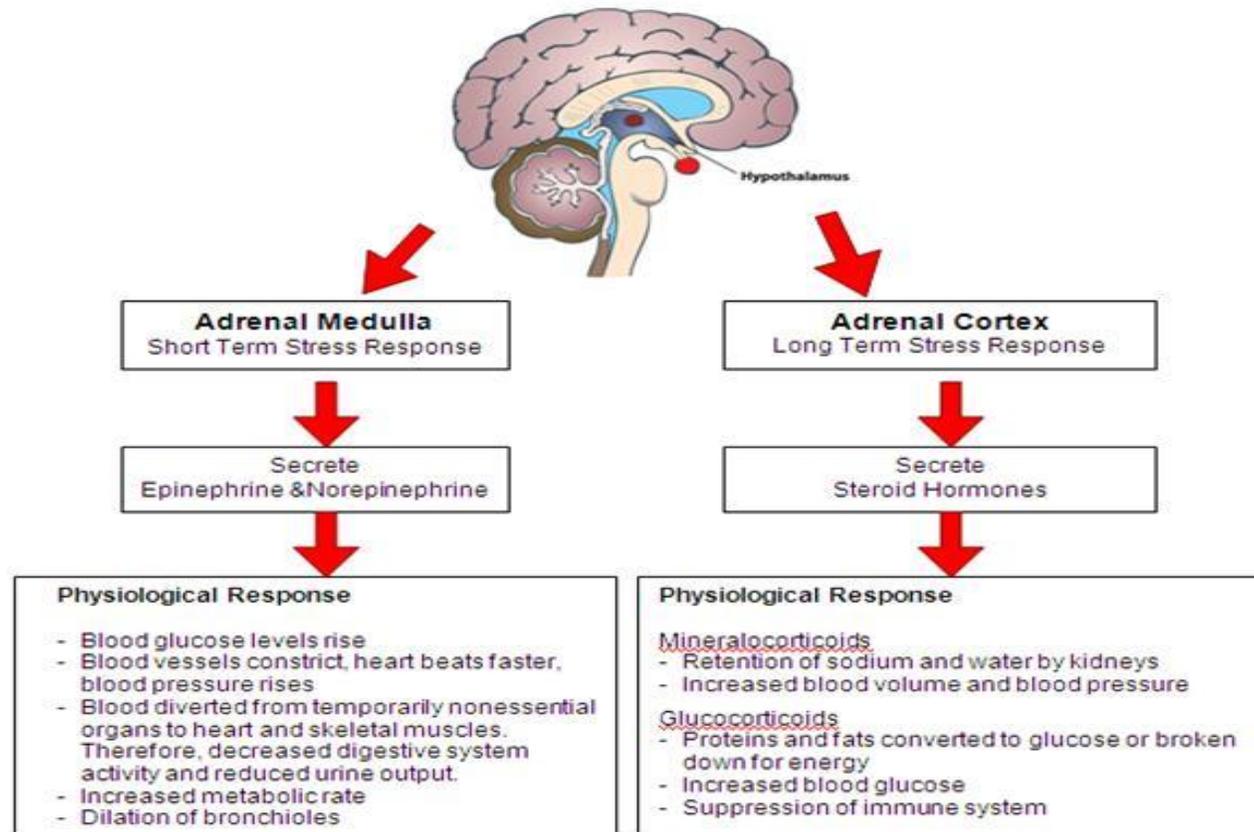
# A story of how meaning-making shapes the brain: meeting a lion

- ▶ Meeting a lion on a bike path;
- ▶ Pounding heart and forgetting to breathe;
- ▶ Noting *where* it happened, and the conditions: specific parts of the brain paying attention for *future reference*;
- ▶ Becoming *hypervigilant* on the basis of *experience*;
- ▶ Classic *flight* and *freeze*: the central nervous system under adrenal hormone bombardment

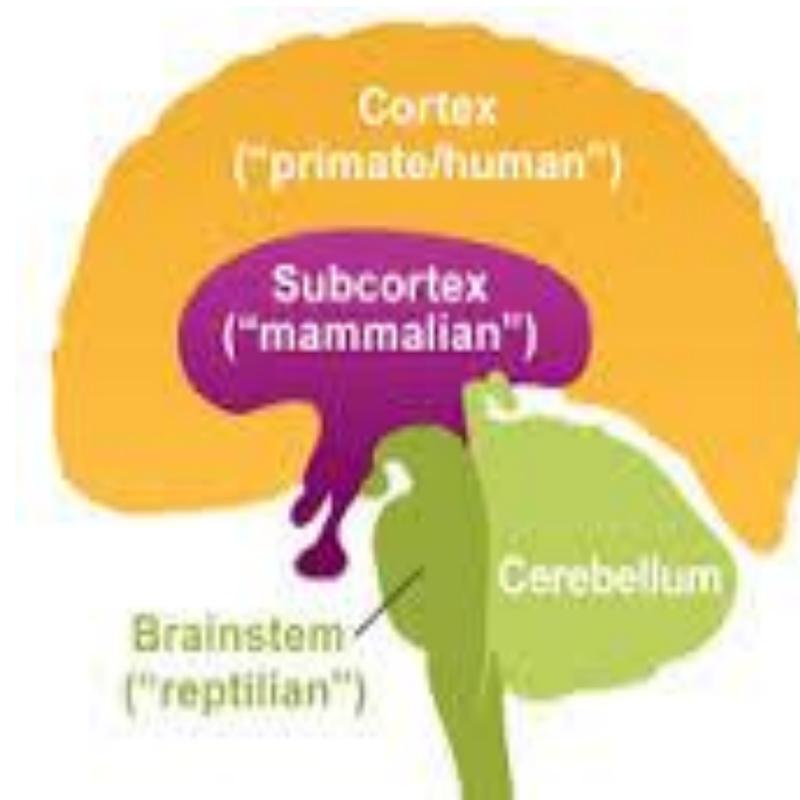
# The parasympathetic division of the nervous system: if the lion had been a dog

- ▶ If someone had appeared to leash the “dog,” I would have *calmed down*: my parasympathetic nervous system would have kicked in much more quickly;
- ▶ Consider the effect of perceiving oneself under constant threat, for example: the plight of the working poor in our society;
- ▶ Ideally, recreational activities, spending time with friends, and especially *sleeping* restore the nervous system to a healthy baseline of functioning;
- ▶ These restorative activities, however, require one more highly significant thing: *a positive attitude* such as hopefulness, gratitude, and reasons to look forward to the future

# Nervous system cascade of effects



# The tripartite brain



# The mammalian brain: the limbic system

- ▶ The **amygdala**: stores memories of *emotions* that take the form of connected neural cells and has an attentional *bias - perceived threats*;
- ▶ “Repetitive triggering of the stress response makes the amygdala more reactive to apparent threats, which stimulates the stress response, thereby further triggering the amygdala, on and on and on in a vicious cycle”;
- ▶ Forms “implicit memories,” meaning *below conscious awareness*;
- ▶ Involved in the *chronic anxiety* of many client/patients: depending on their life experiences and the meanings they have attached to them, their state may be divorced from current experience (Rankin, *Mind Over Medicine*, pages 133-134);

# The hippocampus: explicit memory

- ▶ This part of the mammalian brain “gets worn down by the body’s stress response”;
- ▶ Cortisol and other glucocorticoids weaken synapses in the brain and inhibit the formation of new ones;
- ▶ In turn, fewer new memories;
- ▶ Lack of clarity about the origin of emotions, *staying* stuck in the past, feeling *triggered* without understanding why;
- ▶ *Depression*: also leads to the stress response;
- ▶ Too much cortisol leads to the depletion of norepinephrine, dopamine, and serotonin, resulting in the classic symptoms: apathy, and lack of pleasurable feelings

# Negative emotion

- ▶ Enhances the production of pro-inflammatory cytokines;
- ▶ Linked to certain cancers;
- ▶ Alzheimer's, arthritis, osteoporosis, cardiovascular disease, delayed wound healing, infection, gastrointestinal disorders, endocrine disorders, and more . . . (Rankin)

# The brain: Grand Central Station

- ▶ The brain is responsible for *routing, relaying, coordinating, and sorting* stimuli or *in-put* based on the operation of feedback loops;
- ▶ These loops are behaviorally and experientially *conditioned*;
- ▶ Most of this processing proceeds well below conscious awareness (fortunately for us);
- ▶ Awareness on the basis of the cerebral cortex occurs as the last stage of processing, at which point we can also make *decisions* about what has arisen and/or *manipulate* the thoughts and sensations - we can choose to act, attach meaning, etc.
- ▶ This ability grows in the course of our maturation from infancy onwards

# Thoughts: the stuff of psychotherapy

- ▶ With the appearance of the ability for *abstract thought*, we also become capable of generating our own internal, mental perceptions;
- ▶ This is the material that psychotherapists usually work with;
- ▶ This material is now known to have its own *effects* not only psychologically but also biologically;
- ▶ In this sense, thoughts are a force (see the work of Dr. Jeffrey M. Schwartz on OCD - “brain lock” - at [www.jeffreyschwartz.com](http://www.jeffreyschwartz.com));
- ▶ A psychotherapist will ask, how are you feeling? But feelings are understood generally to *derive* from a mental perception.

# The significance of the feeling tone: degrees of trauma

- ▶ Neuroscientist Dr. Paul MacLean (the tripartite brain): the *reptilian*, the *mammalian*, and the *primate/higher consciousness*;
- ▶ Psychological trauma researchers and psychologists such as Dr. Bessel van der Kolk and Peter A. Levine;
- ▶ Feelings grow out of the *form* of people's experiences, the *meaning* they make of them, and the *age or developmental stage* at which they occurred;
- ▶ These processes create *neural nets* that even contribute to people's stable sense of identity/personality and can last a lifetime;
- ▶ the psychotherapist's task is to help client/patients shed light on their experiences and the meaning or sense they have made of them

# “The talking cure” changes the brain and more . . . .

- ▶ When we make *new sense* of our life experience, even just through shedding light on our experience, and when we live differently, our brains and bodies change;
- ▶ *Recursive, unproductive, negative* thinking and the *stress response* reflected in one’s *emotional* state can be *changed* such that new and different neuronal connections grow, producing different hormonal and neurotransmitter cascades;
- ▶ These *unique and specifically synthesized hormone blends* reflect the individual’s biopsychosocial milieu;
- ▶ And go on to impact, for good or for ill, the functioning of the immune system

# Cyclists and mountain lions: are two cyclists better than one?

- ▶ Catching up to my husband on the bike trail, I *felt safer* and my adrenal reaction *subsided*, although I'm not sure in fact that two of us would have been a better match against a lion's attack than one!
- ▶ By definition, our psychological states are generally not rational; without *self-awareness* we tend to live in a sea of emotional *reaction*;
- ▶ Rationality is the last and arguably *least accessed* function of the brain (despite the Age of Enlightenment)!
- ▶ Consider the metabolic and immune system effects then of never feeling safe; the co-incidence of metabolic syndrome and poverty - not only poor diet and lack of exercise but the continuous stress of *frightening* conditions

# How (psycho)therapy works

- ▶ Psychotherapy, like many healing arts, is capable of inducing *the relaxation response*, based on *the placebo effect*:
- ▶ in the presence of a *caring, knowledgeable, trusted* healer, the client/patient relaxes *habitual psychological defensiveness*, experiences a *reduction of stress hormones*, and *associates* the interaction with the healer as *beneficial*;
- ▶ Medical anthropology has observed the *behavioral* dimensions of this connection for a long time (see Claude Levi-Strauss) and is now in a better position to explain it from a *biomedical* point of view (see also the work of Dr. Arthur Kleinman, psychiatrist and anthropologist, at [ghsm.hms.harvard.edu/person/faculty/arthur-kleinman](http://ghsm.hms.harvard.edu/person/faculty/arthur-kleinman));
- ▶ In *the placebo effect*, meaning-making and the relaxation response appear together

# Healer implications

- ▶ The enormous potential of working to become *a healing presence*;
- ▶ Through such practices as *meditation, mindfulness, breath work, and tai chi*;
- ▶ A connection made long ago in Chinese medicine

# The work of psychotherapy

- ▶ Helping client/patients become aware of how their thinking is affecting their experience of life;
- ▶ This experience, as we now know, is not psychological only; it is implicated in every disease state;
- ▶ The psychological enterprise should, therefore, be *holistic*;
- ▶ Essentially a *teaching* mission begun first of all by *meeting the client/patient where they are* from a completely *non-judgmental* perspective;
- ▶ Listening very carefully for the *circumstances* of their lives, both *inner* and *outer*, and *the meaning they are making* out of those conditions;
- ▶ Careful questioning designed to provoke *self-reflection*, on the basis of a mutually respectful *relationship*

# Innate healing arises

- ▶ When the client/patient feels held and supported, on the basis of not being judged for their condition, their innate healing ability can arise as their *awareness* expands and they find they have *choices*;
- ▶ In a good client/patient/practitioner match, the relationship itself significantly contributes to the motivation to change;
- ▶ Our current understanding of this dynamic appears to have to do with the *mitigation of the stress response* and the *conditioning, expectation, and meaning-making* that are part of the *placebo* effect;
- ▶ That none of these factors appear to be reducible to any of the others;
- ▶ However, it appears that a client/patient's *view of the world* may be the most significant variable and should not be neglected by a practitioner (see the work of Jo Marchant, Ph.D., biologist, geneticist, and science writer, and her new book *Cure: A Journey into the Science of Mind Over Body*)

# Irony #2: psychiatry and “real” medicine

- ▶ For over one hundred years psychiatry has struggled to *legitimize its existence as medicine* when now we can say that the most effective clinicians, whether working in the biological or the psychological sphere, have always recognized the apparently mysterious influence of client/patients’ *attitudes* on their health and well-being;;
- ▶ We had to see empirical proof, a structure of our *culture*;
- ▶ This is not to say that all the mysteries have been solved - see Jeffrey Schwartz’s descriptions of *attention* as collapsing the probabilistic field at the subatomic level

# Conclusion

- ▶ Psychological counseling *changes the brain*, as does any chemical or biological or lifestyle intervention;
- ▶ The nature of our relationships with client/patients is itself a very significant variable in their healing, based on the alleviation of the stress response and the placebo effect;
- ▶ Let us *model* what we are learning about how the brain and the body, which cannot be separated functionally, are ***expressions of our lifestyle and thought world***;
- ▶ Let us in this way be a source of *inspiration* and *encouragement* to our client/patients;
- ▶ Let us *advocate* for positive, healthy lifestyles and *community* conditions

# Dr. Rankin's Whole Health Cairn

