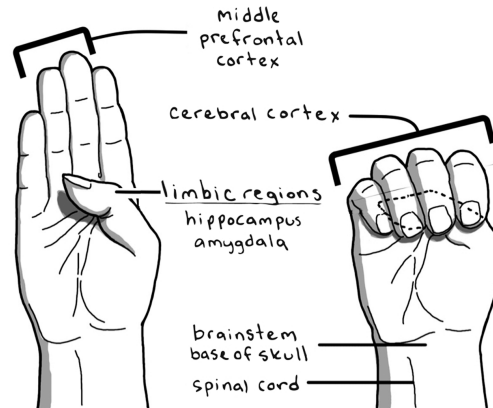


Lecture 1: Mindful Awareness and Neuroplasticity

The Mind & The Brain

- The *mind* is an emergent and self-organizing system of energy and information flow, existing throughout the entire body and in relationships



Dr. Daniel J. Siegel's Hand Model of the Brain

Mindful Awareness

- While researchers have not yet agreed on a single definition of *mindfulness*, it is understood to be the process of paying attention to what's happening as it's happening
- *Mindful awareness* is awareness of the present, and there is a difference between awareness and attention. *Attention* is the process that regulates the flow of information, within us and between ourselves and others, while *awareness* includes subjective experience – a felt texture – and the experience of knowing
- Mindfulness is a particular way of being in the world; it is a specific state or quality of awareness within consciousness

Mindfulness Training

- Through mindfulness practice and focused, intentional attention streaming, we are distinguishing the salient circuit, from the sensory circuit, from the OWN circuit

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Observed Physiological Structural Changes Due to Mindfulness Practice
<ol style="list-style-type: none"> 1. Improvements in immune system function 2. Left shift, meaning the left frontal area of the brain becomes more electrically activate after MBSR, an area associated with approaching challenges rather than withdrawing or avoiding challenges 3. Increase in growth in the integrative, prefrontal areas 4. Increase in growth in the corpus callosum, which links the left and right sides of the brain to each other 5. Increase in growth in the hippocampus, which links memory systems together 6. Increase in growth in the default mode circuitry, which links the forefront and back side of the brain – including areas like the OWN circuit 7. Neural integration supported, in that specific areas of the brain and nervous system are being differentiated and linked 8. Neural integration, which is associated with regulation of attention, mood and emotion, thought, behavior, and interpersonal relationships 9. Telomerase, an enzyme that repairs and restores the ends of chromosomes, levels increase with mental presence 10. Optimization of the non-DNA molecules – epigenetic modulators, which prevent inflammatory diseases

- Mindfulness training can help people distinguish two separate pathways of energy flow – *a sensory flow*, which is awareness of sensations from the outside world or from within the body, called interoception, and an *observational flow*, which is awareness of how we make sense of these stimuli through beliefs, feelings, thoughts, and perceptions

Differentiated Streams of Energy
Sensation
Observation
Concept
Knowing

OWN Circuit of Energy Flow
Observes
Witnesses
Narrates

Focus of the OWN Circuit
Others
And
The
Self

- Centralized, default-mode processing and the midline system of the brain relate to the OWN circuit and OATS. Mindfulness, which is a form of integration, allows us to differentiate streams of energy, freeing us from default-mode processing
- Through open awareness practice, we develop *metacognitive skills* and build the circuitry that allows us to notice if we have become lost in a thought or locked into a flow; we can begin to identify objects and mental processes as mental activity – rather than absolute beliefs; we realize that there is a pause between impulse or desire and action, and we can choose to have a *reflective* response rather than a *reactive* response

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Lecture 2: Presence, Attachment, and Resonance in our Relationships

The Three Components of <i>Mindsight</i>	
Insight:	Reflecting with awareness by focusing attention on the internal, subjective world of one's own interior mental experience, including feelings, thoughts, memories
Empathy:	Sensing the inner experience of another within one's own mind; forming a mental map of another; feeling <i>felt</i> by an empathic other is the foundation of a supportive relationship
Integration:	The differentiation or specialization, and, ultimately, linkage of systems including the brain and interpersonal relationships; without integration, chaos, rigidity, or both emerge, resulting in a state of mental dysfunction; with integration, harmony emerges with flexibility, adaptability, coherence, stability, and energy (a FACES flow)

- *Presence* is the nonjudgmental awareness of the unfolding of moment-to-moment experience; the opposite of presence is unintentional mind-wandering

The PART We Play in Relationships	
Presence	Openness; awareness of present moment experience
Attunement	Focus of attention on the internal world
Resonance	Being shaped by another
Trust	A deep knowing of reliability

7 Basic Nonverbal Components of Communication
<ol style="list-style-type: none"> 1. Eye Contact 2. Facial Expression 3. Tone of Voice 4. Posture 5. Gesture 6. Timing 7. Intensity

- The right hemisphere, which is dominant for nonverbal communication and autobiographical processing and memory, develops first, and the left hemisphere, which mediates more linear, linguistic, logic-based processing and memory, develops later
- The cortex in general, both the right and left hemispheres, has columns from which information is constructed; some anatomic analyses suggest that the right hemispheric columns integrate more horizontally, allowing for cross-column construction to be more interconnected, while the left hemispheric columns integrate vertically, creating the deep construction of information and the experience of analysis—down-breaking—of information

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Lecture 3: Trauma and Attachment

Attachment Models

- How a parent has made sense of her or his own attachment experiences is the best predictor of how that parent’s child’s attachment will unfold

The Four Attachment Categories			
Attachment Category		Adult Narrative	% of Non-Clinical US Population
Secure	The child is able to connect with the parent as a safe-base for exploration. The caregiver provides reliable safety, soothes the child in times of distress, and appropriately responds to the child’s nonverbal cues.	Coherent autobiographical narrative	55-65%
Avoidant	Distant emotional connection. The child learns not to depend on the caregiver for comfort. He or she may even detach from awareness of his or her bodily and emotional sensations.	Stance that past relationships do not affect the self; Difficulty retrieving autobiographic memory	20-25%
Ambivalent	The child feels uncertain as to whether his or her own needs will be met by the caregiver because the caregiver is unreliable, inconsistent, or intrusive.	Incoherent narrative in that is it often filled with the intrusion of “leftover” emotional experiences	10-15%
Disorganized	Terror of the attachment figure leads to the activation of two opposing neural processes at the same time: <ul style="list-style-type: none"> • Limbic system – drive to move toward caregiver for protection • Brainstem circuit – drive to move away from source of terror This results in a drive to move both towards and away from the caregiver at the same time, “fear without solution.”	Disoriented/Unresolved loss or trauma in narrative due to the loss of orientation during narrative output as a result of unresolved loss or trauma The Adult Attachment Interview (AAI) assesses not only for loss or trauma, but their lack of resolution—making it a unique and important instrument	5-15%

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- Attachments help us survive in infancy and childhood, and these attachment patterns become a working model for future relationships

The 4 Ss of Building a Secure Attachment
Seen
Safe
Soothed
Secure

Neuroplasticity and Earned Secure Attachment

- We can shape our own narratives through neuroplasticity because of the emergent, self-organizing property of the mind: the way in which energy flows through the nervous system influences subjective experience and also recursively alters the nervous system itself

Where attention goes, neural firing flows, and neural connections grow

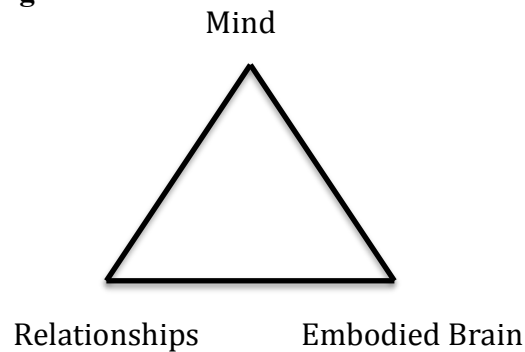
Changes in Neural Function and Structure	
Synaptic Modulation (Synaptogenesis)	The formation and modulation of neural synapses; “Neurons that fire together, wire together”
Epigenetic Modulation (Epigenesis)	The alteration of the control of gene expression—in this case via experience and learning—that involves laying down of non-nucleic acid molecules on top of genes (which are comprised of DNA—chains of nucleic acids)
Neurogenesis	The generation of new neurons from neural stem cells which divide and can create new neurons early in life and especially in the hippocampus throughout the lifespan
Myelinogenesis	The laying down of a myelin sheath around interconnected nerve fibers, leading to increased firing speed and enhanced coordination of neural firing

- By bringing mindsight into one’s life, narratives can become coherent as integration occurs

SNAG: Increasing Integration
Stimulate
Neuronal
Activation
Growth

Lecture 4: Connecting to our Parents Across the Lifespan

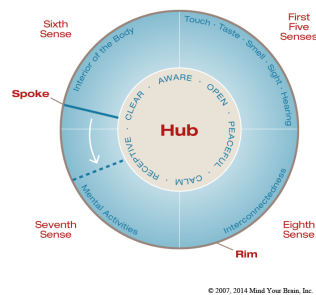
Triangle of Well-Being



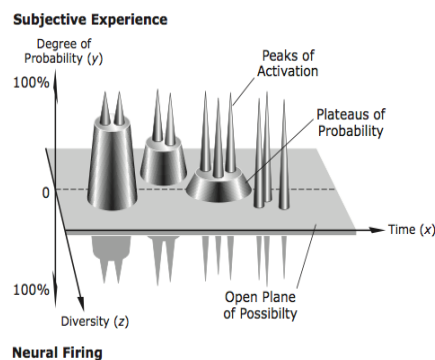
Probability Theory

- Consciousness: the process, ability, or experience of knowing, which includes a prime of subjective experience
 - *Knowing*: the process or experience of knowing
 - *The known*: the entity that is filling awareness

The Wheel of Awareness



- Energy is based on probabilities – not certainties; mindfulness practices, like the wheel of awareness practice, strengthen our abilities to be consciously aware and to integrate the mind
- Since the mind emerges from a system of energy and information flow, the hub of this wheel represents the probability distribution of energy near zero certainty, or near zero probability – it is *the plane of possibility* in that nearly infinite possibility exists with near zero probability



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- Integration of consciousness accesses this plane of possibility and strengthens the ability to choose peaks and not be imprisoned by persistent plateaus

Attachment Research

- *Trauma* can be defined as an experience beyond the ability of the individual to adapt
- Traumatic experiences – especially those in childhood – produce stress and potentially toxic cortisol levels, which may result in the death of synaptic connections and neurons, known as *apoptosis*

Circuits of Integration Vulnerable to Childhood Trauma	
Corpus Callosum	Promotes integration of the left and right hemispheres
Hippocampus	Enables linkage of memory systems
Prefrontal Cortex	Links the higher cortex to the lower limbic and brain stem systems as well as the social world

- Drawing on past memory, social support systems, and making sense of physiological experience provide resources for dealing with stress and promote rises in integration

Memory

Two Layers of Memory		
Explicit Memory	Declarative memory that can be stated in words	<ul style="list-style-type: none"> • Episodic: Specific personal experience, dominant in the right hemisphere • Semantic: Factual information, dominant in the left hemisphere
Implicit Memory	Non-declarative memory	<ul style="list-style-type: none"> • Perception • Bodily Sensations • Emotion • Behavioral/Motor Response • Generalizations as Schema or Mental Models • Priming

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Lecture 5: Thinking, Deciding, and Behaving

Neural Integration and Energy Flow

- The mind is an emergent, self-organizing process of a complex system that regulates the flow of energy and information within us and between throughout our entire bodies
- We can shape our own narratives through neuroplasticity because of the emergent, self-organizing property of the mind: the way in which energy flows through the nervous system influences subjective experience and also recursively alters the nervous system itself
- Integration is the differentiation and linkage of parts of a system. By intentionally streaming energy through specific neural pathways, these neural pathways become more connected and strengthened, making them more likely to be active in the future

System I vs. System II Processing

- Mindfulness training can help people distinguish two separate pathways of energy flow – a *sensory flow*, which is awareness of sensations from the outside world or from within the body, called interoception, and an *observational flow*, which is awareness of how we make sense of these stimuli through beliefs, feelings, thoughts, and perceptions

Differentiated Streams of Energy
Sensation
Observation
Concept
Knowing

- System I creates a vulnerability to exclude data that contradicts a belief, altering perception, because we want things to make sense and fit in with our mental models
- System II offers more reflective capacities and can influence behavioral choices even if not able to easily modify System I sensations, perceptions, and beliefs directly

Mental Information Processing Systems	
System 1	Automatic; Fast-Acting; Intuitive <ul style="list-style-type: none">• Physiological feeling of intuition
System 2	Deliberate; Time and Energy Consuming; Reflective <ul style="list-style-type: none">• Conscious reasoning to create a story

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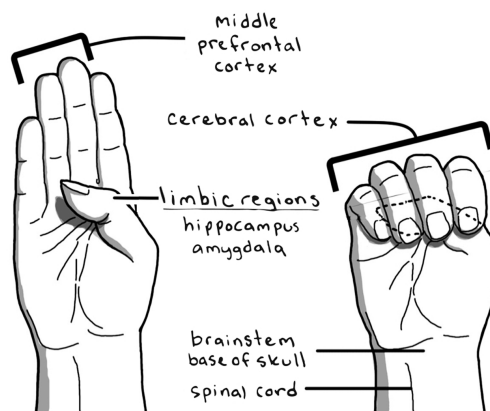
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Lecture 6: The Adolescent Mind and the Journey into Adulthood

The ESSENCE of Adolescence

- Adolescence is a period marked by unique brain remodeling processes known as pruning and myelination, or myelination, which create an ESSENCE that is the basis for well-being both during this important period of growth and change, as well as throughout the lifespan

The ESSENCE of Adolescence		
ES	Emotional Spark	An extremely active processing of emotion that influences cortical reasoning <ul style="list-style-type: none"> Downside: Moodiness, irritability, sensitive emotional states Upside: Passion and energy
SE	Social Engagement	Driven towards peers and away from parents <ul style="list-style-type: none"> Downside: Risk of sacrificing personal values in exchange for peer acceptance; total exclusion of adults Upside: Supportive relationships and development of lifelong relationship skills
N	Novelty	Changes in the dopamine (reward) and limbic (evaluative) systems of the brain <ul style="list-style-type: none"> Downside: Risk of injury and death highest during this time Upside: Courage to explore and leave the familiar and certainty of the home and enter the larger world
CE	Creative Exploration	Mental pushing away from the “status quo;” new perspectives and ways of thinking <ul style="list-style-type: none"> Downside: Potential to feel out of place, disoriented Upside: Innovations, creativity, and the ability to adapt



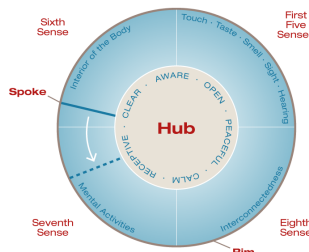
Dr. Daniel J. Siegel's Hand Model of the Brain

Lecture 7: Cultural Evolution and Mindsight

The Wheel of Awareness

- Consciousness: the process or ability of the experience of knowing, which includes a prime of subjective experience
 - *Knowing*: the process or experience of knowing
 - *The known*: the entity that is filling awareness

The Wheel of Awareness



Available for download at:

http://www.drainsiegel.com/resources/wheel_of_awareness/

Cultural Evolution, Genetics, and Epigenetics

- *Cultural evolution* describes the process of how an idea – a meme – shapes the ways people interact over time; it is the unfolding of memes, not the alteration of genes
- *Genetic evolution* is the process of how environmental factors influence gene selection over many reproductive cycles, leading to changes in the general phenotypic expression of a genotype over time
- *Epigenetics* refers to how experience influences the ways non-DNA molecules, called histones and methyl groups, are placed along the genes, changing the shapes of chromosomes, and altering the ways specific genes are activated and expressed (as protein production)
- Epigenetic changes, which are acquired by way of experience, may influence cultural evolution

The Process of Cultural Evolution

- Culture shapes brain development and nervous system function by influencing patterns of neuronal firing, genetic expression (via epigenetic modification), and neural networking changing the *connectome*, or interconnected nature of the nervous system
- There is an important link between a culture's influence on an individual's gene expression and epigenetic regulation and the connection between individual behavior and the patterns of communication found within that culture

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- Cultural evolution includes the idea that a culture is changing over time through changes in ideas that influence change in communication within individuals of a community

Mindsight

- We can inspire intentional cultural evolution to promote well-being in the world, and mindsight is the human potential to create insight, empathy, and integration
- *Eudaimonia* is the meaning found in serving others – a feeling of connection to something larger than individual self

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- The *self* extends beyond the boundaries of the skin, as *me* and *we* integrate to create a sense of *MWe*
- In the context of cultural evolution, integration – honoring and promoting the vulnerabilities and differences between ourselves, peoples, and the planet – promotes health, kindness, and compassion in the ever-changing, at-risk world
- By reflecting on how personal behavior affects the well-being of society and the planet, we can direct and shift cultural evolution towards health, restoration, and balance