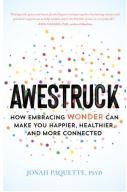
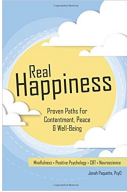
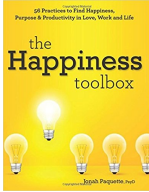


Understanding and Practicing Positive Psychology

The Science of Happiness and Well-Being

Jonah Paquette, Psy.D.
Author of *Real Happiness*, *The Happiness Toolbox*, and *Awestruck*

1

About Me

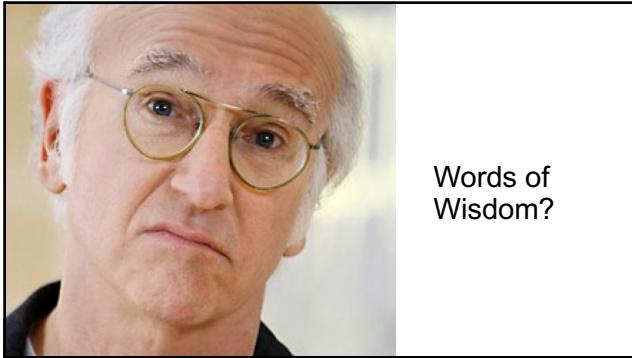
- Author of *Real Happiness*, *The Happiness Toolbox*, and *Awestruck* (coming June 2020)
- International speaker and workshop trainer
- Assistant Director of Mental Health Training at Kaiser Permanente in Northern California

2

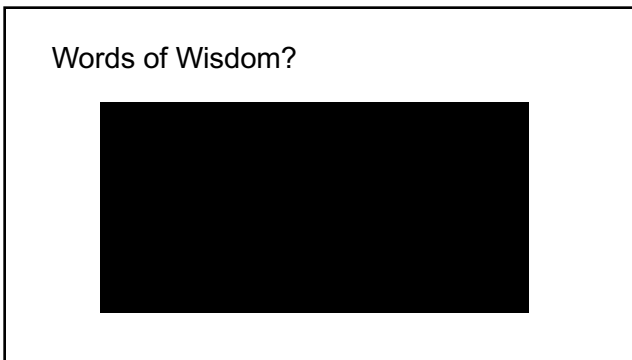
What we'll cover

What is happiness?	Why happiness?	Can we <u>increase</u> happiness?
Key brain regions and systems	How to become happier	Tools for clinical change <ul style="list-style-type: none"> • Practical, Evidence-Based, Easy to Integrate

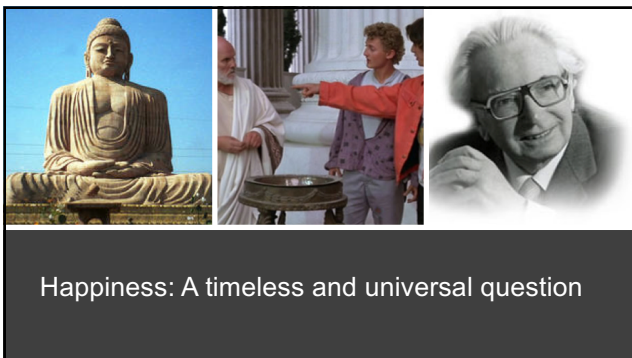
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6




Happiness: A new “problem”

7

What is Happiness?

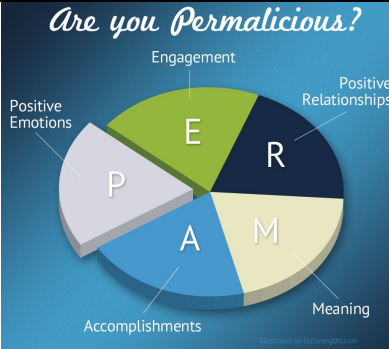
“The experience of joy, contentment, or positive well-being, combined with a sense that one’s life is good, meaningful, and worthwhile.”

– Sonja Lyubomirsky, Ph.D.

8

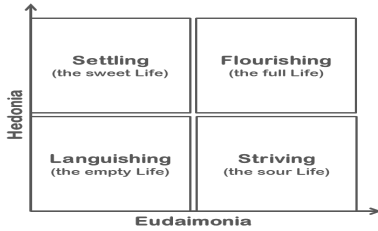
PERMA Model of Well-Being (Seligman, 2012)

Are you Permalicious?



9

The Best of Both Worlds



10

Measuring Happiness

- Authentic Happiness Inventory
- General Happiness Scale
- Satisfaction with Life Scale
- Subjective Happiness Scale
- Optimism Scale
- Gratitude Survey
- Grit Scale
- Grit Scale
- VIA Strengths Test, Brief Strengths Test
- PERMA Questionnaire
- Meaning in Life Questionnaire
- Compassionate Love Survey

*Free through
www.authentichappiness.org

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Subjective Happiness Scale (Lyubomirsky)

- In general, I consider myself:

1	2	3	4	5	6	7
not a very happy person						a very happy person
- Compared to most of my peers, I consider myself:

1	2	3	4	5	6	7
less happy						more happy
- Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all						a great deal
- Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all						a great deal

12

Satisfaction with Life Scale (Diener)

The Statements

Rate your agreement with each statement using the scale 1 – 7.

- _____ In most ways my life is close to my ideal.
- _____ The conditions of my life are excellent.
- _____ I am satisfied with my life.
- _____ So far I have gotten the important things I want in life.
- _____ If I could live my life over, I would change almost nothing.

Add your ratings to produce the total score.

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Why Happiness?

What do **nuns, baseball players, and yearbook photos** have in common?

14

The Nun Study (Danner, 2001)

"God started my life off well by bestowing me grace of inestimable value... The past year which I spent as a candidate studying at Notre Dame has been a very happy one. Now I look forward with eager joy to receiving the Holy Habit of our Lady and to a life of union with Love Divine."

—Cecilia O'Payne

"I was born on September 26, 1909, the eldest of 7 children, 5 girls and 2 boys. My candidate year was spent in the motherhouse, teaching chemistry and 2nd year Latin at Notre Dame Institute. With God's grace, I intend to do my best for our Order, for the spread of religion and for my personal sanctification."

—Marguerite Donnelly

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The Yearbook Study (Harker & Keltner, 2001)



17

The Baseball Card Study (Abel & Kruger, 2010)



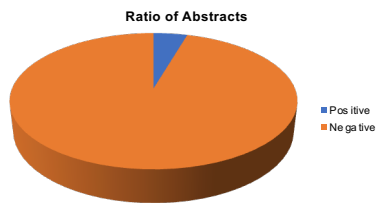
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It's Good to be Happy

- **Psychological:** Increased life satisfaction, lower rates of depression and anxiety, increased frequency of positive emotional states, increased resiliency, openness to new experiences
- **Physical:** Increased longevity, improved physical health, stronger immune system, decreased inflammation, improved coping with chronic illness
- **Life:** Higher income, stronger marriages, closer relationships, improved job performance

19

Mental Health Abstracts, 1968-2000



20

Happiness: Can we *really* increase it?

"I don't have one minute's regret. It was a glorious experience." – Moreese Bickham

"It was the worst thing that ever happened to me." – Billy Bob Harrell, Jr.



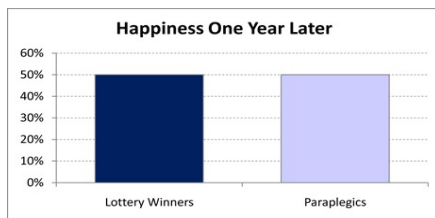
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Happiness Forecasting



22

12 months later (Gilbert, 2006)



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Dead Ends to Happiness

- Money/Income
- Marriage
- Children
- Living in California
- Getting a Promotion
- Sports team winning
- Physical Attractiveness
- Years of Education
- Passing/Failing an Exam

24



25

Barriers to Happiness



26



Barrier #1:
Hedonic
Adaptation

27

"People are exposed to many messages that encourage them to believe that a change of weight, scent, hair color (or coverage), car, clothes, or many other aspects will produce a marked improvement in their happiness. Our research suggests a moral, and a warning: Nothing that you focus on will make as much difference as you think."

– Daniel Kahneman, Ph.D.

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Barrier #2: Genetics

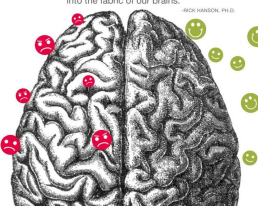


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"Our brain has a negativity bias, making it like
VELCRO FOR THE BAD and
TEFLON FOR THE GOOD.
We have to learn to weave the positive
into the fabric of our brains."



Barrier #3:
A "Negative"
Brain


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The "Negativity Bias"

- Greater focus on negative experiences
- Learn faster from pain than pleasure
- Hard to "undo" these effects
- Negative experiences stored longer in memory
- Great for survival, but...

"Most good experiences are wasted on the brain."
– Rick Hanson

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The Brain
Science of
Positive Change

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A long time coming...

"We must recollect that all of our provisional ideas in psychology will presumably one day be based on an organic substructure."

— Sigmund Freud



"The act of will activates neural circuits."

—William James



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Why focus on the brain?

Helps us as clinicians to:

- Tailor interventions that impact specific brain regions and systems
- Understand the neuroscience of well-being
- Frame our interventions as they relate to key brain regions

Helps our clients to:

- Understand why practicing certain skills is important
- Feel empowered that what they do matters
- Feel more "buy-in" for the approaches we might take

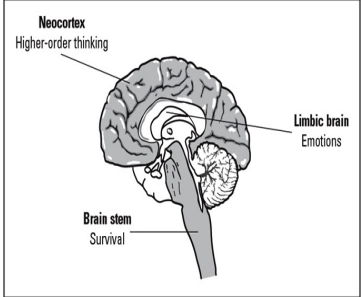
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Nervous System Overview

- Comprised of 2 kinds of cells:
 - Neurons: 90-100 billion, each connected to thousands more
 - Glia: roughly one trillion glial cells, providing support/scaffolding to neurons
- Together, these comprise our nervous system, which consists of 2 parts
 - Central Nervous System: Brain & Spinal Cord
 - Peripheral Nervous System: Somatic and Autonomic Nervous System
 - ANS: consists of Sympathetic and Parasympathetic Branches

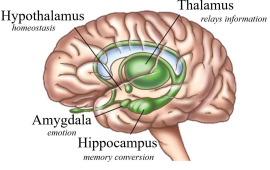
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Review of Key Regions and Systems



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The Limbic System

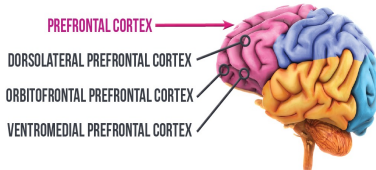


- Primarily associated with emotions and memory
- Deeper set of structures within the brain
- Sometimes called the "mammalian" brain

The Limbic System

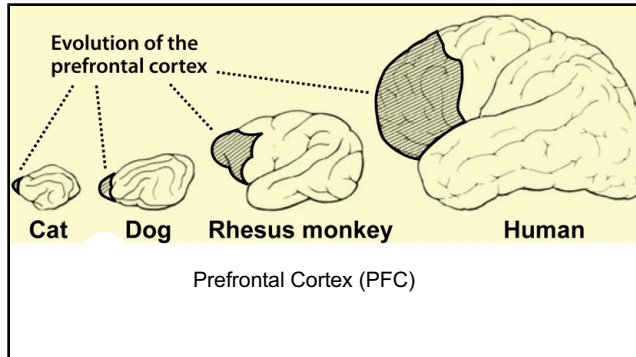
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Prefrontal
Cortex
(PFC)



- Thinking, planning, cooperation, impulse control, emotional control
- The "CEO" of the brain
- Most evolutionarily advanced regions of the brain
- DLPFC: working memory, present-moment awareness
- OFC: social brain, emotion regulation

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Affect Asymmetry	Evolution of the prefrontal cortex	
	Left PFC	Right PFC
	<ul style="list-style-type: none"> • Positive Emotions • Approach Behaviors • Identifying/labeling thoughts and feelings • Development of new narratives 	<ul style="list-style-type: none"> • Negative Emotional States • Withdrawal behaviors • Behavioral inhibition • Emotional overwhelm

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Key Neurotransmitter Systems
Serotonin: mood regulation, motivation, sleep, emotionality
Dopamine: reward, pleasure
GABA: calming
Endorphins: pleasure, pain relief, euphoria
Norepinephrine: focus/concentration, alertness, stress response
Glutamate: stimulation of brain cells, memory systems
Oxytocin: bonding, social connection

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Peripheral Nervous System

Sympathetic Nervous System (SNS)

- "Fight or Flight"
- Marked by over 1000 biochemical and physiological changes in the body
- Deactivates functioning in cortical areas of brain
- Chronic activation linked to a host of negative outcomes

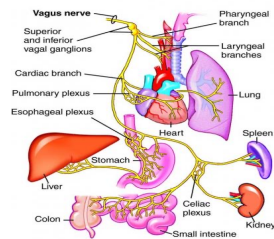
Parasympathetic Nervous System (PNS)

- "Rest and Digest," or "Feed and Breed"
- Relaxation response
- Returns us to homeostasis
- Marked by decreased blood pressure and heart rate, slowed breathing, and other aspects of relaxation

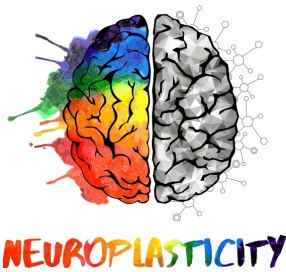
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Vagus Nerve

- 10th cranial nerve
- Feelings of safety, belonging, connection, attachment
- High vagal tone
 - Ability to self-soothe, attach, self-regulate
- Low vagal tone
 - Anxiety, irritability, poor impulse control



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Using the
Mind to
Change
the Brain

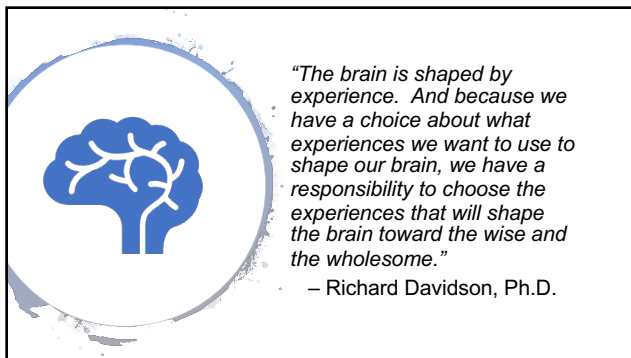
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Positive Neuroplasticity

- Habits, Skills, Behaviors lead to *state* changes in the brain
- Repeated over time, short-term *states* become long-term *traits*
- A bidirectional process
 - Experiences change our brain, which in turn make those positive experience more accessible and likely to be repeated
- A “superpower” that can be used towards health or misery

Take-home point for clients: “Positive actions (thoughts and behaviors) repeated over time changes your brain. This, in turn, makes us more likely to experience them again.”

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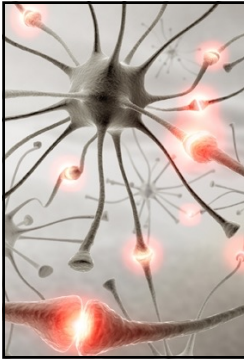


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Neuroplasticity in Action

- The Brain changes through experience – this occurs automatically
- The more we repeat a thought/behavior/action, the stronger the associated neuronal connections become
- Our brain is *soft-wired*, not hard-wired: conscious actions can change our brain for the better
- The key is practice...and then more practice
- Brain changes can appear on fMRI scans in as little as 2-3 months

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Creating Brain-Based Changes

- *Strengthening (LTP) or weakening* of synaptic connections
- *New* synaptic connections
- Increased *thickening* of glial cells
- *Dendritogenesis*: growth of new dendrites
- *Neurogenesis*: growth of new neurons
- Increased synaptic efficacy
- Increased blood cell density

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Brain-Derived Neurotrophic Factor (BDNF)

- Protein that plays a crucial role in neurogenesis and neuroplasticity
- Consolidates connections between neurons
- Promotes myelin growth to help neurons fire efficiently
- Facilitates new neuronal growth in the PFC and hippocampus
- Factors that *decrease* BDNF:
 - Aging
 - Stress
 - Depression
 - Obesity
 - Substance abuse
- Factors that *increase* BDNF:
 - Exercise
 - Decreased caloric intake
 - Intermittent fasting
 - Healthy fats (e.g. Omega-3's)

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Examples of Neuroplasticity

- **Cab Drivers** (McGuire, 2000)
 - Hippocampus
- **Meditating Monks**
 - Left PFC (positive emotions)
 - Anterior Cingulate Gyrus (attention)
 - Insula (peace & safety)
- **Pianists**
 - Motor Cortex
 - Posterior Precentral Gyrus
- **Jugglers** (Draginski, 2003)
 - Increased gray matter in mid-temporal lobes
- **String instrument musicians**
 - Enlarged areas of specific somatosensory strips
- **Trauma Survivors**
 - Amygdala
 - Hippocampus (decreased volume)

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Psychotherapy and Neuroplasticity

- Decreased amygdala response and sensitivity after undergoing treatment for panic disorder, social phobia, and specific phobia (Straube, 2006; Prasco, 2004)
- Increased ACC activation after treatment for PTSD (Felmington, 2007)
- Treatment for depression increased activation and volume in the hippocampus (Goldapple, 2004)
- Decreased caudate activity for OCD patients (Baxter, 1992)

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Core Habits of Well-Being

- | | |
|-------------------------|---------------------|
| ❖ Gratitude | ❖ Awe |
| ❖ Compassion | ❖ Self-Compassion |
| ❖ Cultivating Strengths | ❖ Health & Wellness |
| ❖ Meaning | ❖ Forgiveness |
| ❖ Connection | ❖ Mindfulness |
| ❖ Optimism | ❖ Savoring |
| ❖ Fostering Resilience | |

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Awe



54

What do you feel when you...

Gaze up at the Milky Way?

See a beautiful sunrise or sunset?

Witness an act of great compassion or courage?

Watch a child learn to walk?

See a mind-blowing work of art?

Attend an incredible performance?

55



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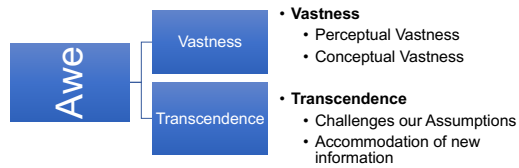
What is Awe?

The feeling we get in the presence of something vast that challenges our understanding of the world.



57

Defining Awe



58

Who Experiences Awe?

- **Personality factors**
 - Extraversion, Openness to New Experiences
- **Character Traits**
 - Optimism, Gratitude, Creativity, Love of Learning, Appreciation of Beauty
- **Spirituality and Religion**
 - No differences found overall, though sources of awe may differ
- **Social Class**
 - Slight link to lower-SES individuals
- **Differences in frequency of experiencing awe (Razavi, 2016)**
 - Comparison of US, Poland, Malaysia, Iran
- **Differences in sources of awe (Bai, 2017)**
 - US/Europe: more likely to experience awe through nature or through themselves
 - East Asia: more likely to experience awe through another person

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Challenges to Awe

- Technology
- Rise of Urban Living
- Increasing length of workday
- Rising levels of stress
- Constant worry and rumination
- Increased materialism
- Changing attention spans
- Decreased attendance for concerts, museums, and live performances



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Why do we experience awe?

61



The Benefits of Awe

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Psychological Benefits of Awe

- Enhances Positive Emotions (Joye, 2015)
- Increases Life Satisfaction (Rudd, 2012)
- Lastingly Boosts our Mood (Stellar, 2017)
- The "Small Self" Effect (Bai, 2017)
- Decreases Materialism (Jiang, 2018; Rudd, 2012)
- Lowers Stress (Anderson, 2018)
- Decreases PTSD symptoms (Anderson, 2018)
- Expands our sense of time (Rudd, 2012)
- Increases Humility (Stellar, 2018)

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Our Brain and Body on Awe



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Awe and Inflammation (Stellar et al., 2015)

Short-Term/Acute

- Fights disease and infection
- Restores us to homeostasis
- Signals immune system to spring to action
- Heals and repairs damaged tissue
- Localized

Chronic

- Persistent, low-grade
- Widespread (rather than localized)
- Linked to heart disease, stroke, Alzheimers, depression, and much more

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Awe and Inflammation

DPES Subscale	IL-6	IL-6
Awe	-0.33***	-0.33**
Amusement	-0.02	0.16
Compassion	-0.09	0.05
Contentment	-0.20*	0.04
Joy	-0.23*	-0.11
Love	-0.10	-0.07
Pride	-0.21*	-0.009

Note. β values for positive emotions predicting IL-6 and controlling for participant's BMI. In column 1, emotions are separately entered into regressions and in column 2 they are simultaneously entered.

* $p < .05$. ** $p < .01$. *** $p < .001$.

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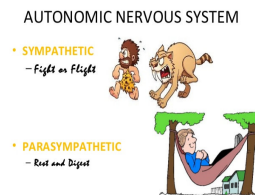
Your Brain on Awe (Newberg, 2016)

- Activation in areas linked to interpersonal bonding and release of oxytocin
- Decreased activation of Default Mode Network (DMN)
- Decreased activation in the parietal lobe
 - Contributes to sense of self, orients us to world around us
 - May explain the "out of body" experience many report during moments of awe
- Decreased activation of subgenual prefrontal cortex
 - Linked to anxious rumination
- Distinct "signatures" found on EEG readings during moments of awe

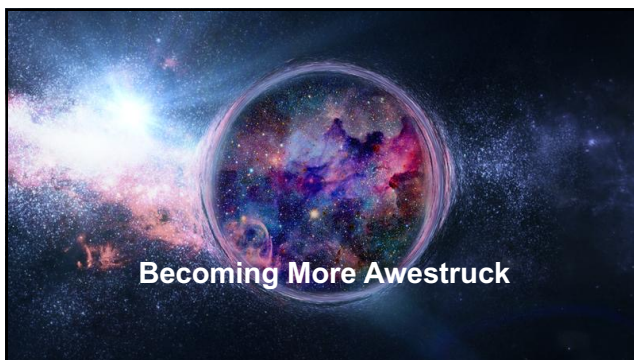
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Awe and our Nervous System

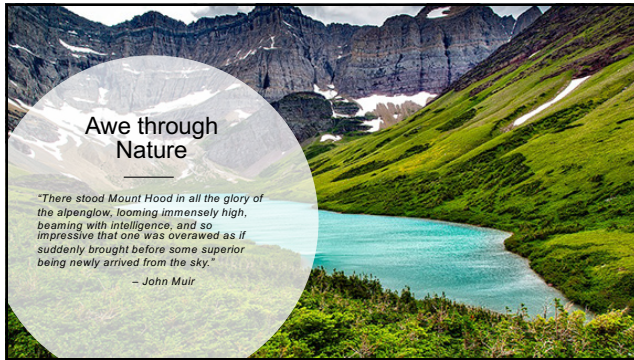
- Typically work in reverse of each other (like a hot and cold faucet)
- Awe appears to be a rare state in which both branches are activated simultaneously



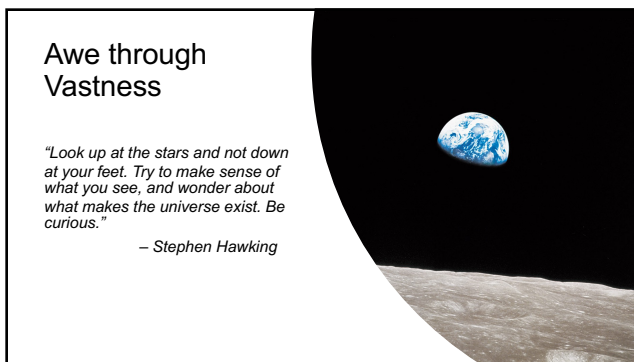
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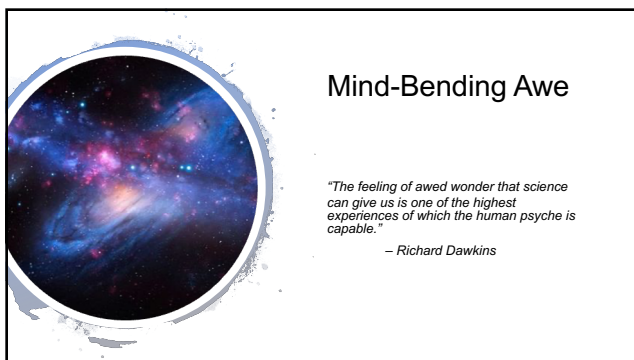
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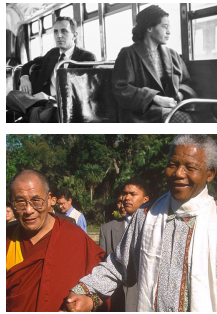
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Awe through Courage & Inspiration

"Awe is the best of man."
— Goethe



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"If spring came but once a century instead of once a year, or burst forth with the sound of an earthquake and not in silence, what wonder and expectation there would be in all hearts to behold the miraculous change."
— Henry Wadsworth Longfellow

Awe through Timelessness

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Awe through Creativity & The Arts

"Beauty will save the world."
— Fyodor Dostoevsky

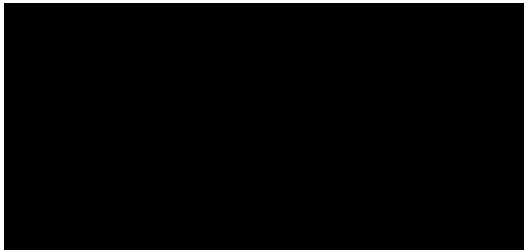
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Gratitude

"He is a wise man who does not grieve for the things which he has not, but rejoices for that which he has." –Epictetus



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A Reflection on Gratitude



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Gratitude

"A sense of wonder, thankfulness, and appreciation for life."
– Robert Emmons

"An antidote to negative emotions, a neutralizer of envy, avarice, hostility, worry, and irritation."
– Sonya Lyubomirsky

"Gratitude is an attitude, but it is much more. Gratitude has also been depicted as an emotion, a mood, a moral virtue, a habit, a motive, a personality trait, a coping response, and even a way of life."
– Robert Emmons

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Benefits of Gratitude

Psychological

Lower Depression, Anxiety, Stress (Seligman, 2005)

Joy, enthusiasm, happiness, love, optimism (Emmons, 2007)

Increased well-being, life satisfaction (Wood, 2010)

Recovery from PTSD (Kashdan, 2005)

More able to forgive (Luskin, 2010)

Improved perception of social support

Other Benefits

Overall health improved (Emmons, 2007)

Better sleep (Wood, 2009)

Increased immune system functioning

Exercise (Emmons, 2007)

Decreased physical pain

Romantic relationships (Algoe, 2010)

Social Bonds (McCullough, 2002)

More forgiving (Rye, 2012)

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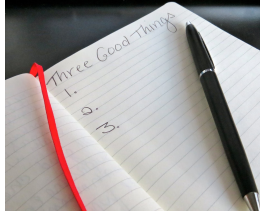
The Grateful Brain

- Left Prefrontal Cortex (Zahn, 2009)
- Anterior Cingulate Cortex (Fox, 2015)
 - Interpersonal bonding
- Pregenual Anterior Cingulate Cortex (pgACC) (Wong, 2016)
 - Links emotional and cognitive centers of brain
 - Lasting differences months later
- Hypothalamus
 - Sleep, Stress, Metabolism
- Increased gray matter functioning
- Ventromedial Prefrontal Cortex (reward circuitry)
- Serotonin, Dopamine (Zahn, 2008)

81

Three Good Things (Seligman, 2005)

- 3 things that went well today
- Why they happened/your contribution
- Different every day; never repeat an item
- Every day for at least 2 weeks



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Gratitude Letter/Visit (Seligman, 2005)

- Identify someone who has helped you, but never properly thanked
- Write and deliver a detailed letter expressing thanks



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Gratitude for those who support us

(Graham, 2013)

"A hundred times every day, I remind myself that my inner and outer life depends on the labors of other people, and that I must exert myself in order to give in the same measure as I have received and am still receiving." – Albert Einstein

84

Give it up (Coidbach, 2013)

- Identify a source of joy or pleasure in your life (one that you can easily access)
- First, allow yourself to indulge/enjoy it as you normally would
- Then, spend a week completely avoiding it altogether
- After a week, allow yourself to enjoy it once more – notice how it feels different from before

85

Remembering the Bad (Emmons, 2007)

“Think of your worst moments, your sorrows, your losses and your sadness. Focus on how you got through the worst day of your life, the trauma, the trial. You endured the temptation, you survived the bad relationship. You made your way out of the dark. Remember this, and then look to see where you are now.”

– Robert Emmons

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Grateful Reminiscence

- Reflect back on an experience you've had that brings up feelings of gratitude
- Journal 1x per week reminiscing on a past experience of gratitude
- Savoring happy memories shown to increase serotonin production (Perreau-Linck, 2007)
- Thinking back on sad or painful memories shown to decrease serotonin production

87

Mental Subtraction of Positive Events

(Koo et al, 2008)

- Mental Subtraction of positive aspect in life
- Can be person, relationship, opportunity, career, or other source of goodness
- Reflect on how easily this could NOT be a part of your life

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Psychological Richness (Oishi, 2020)

- An alternative to the hedonic vs. eudaimonic model
 - Psychometrically distinct from these as well
- 9-country cross-cultural study found that 17% (and even higher in some countries) preferred the psychological rich life over the hedonic or eudaimonic life
- Characterized by variety, novelty, and interest
- Linked with individuals high in Openness on Big-5

90

Reflection

What are some experiences or activity that have made you feel alive, pushed your comfort zones, or sparked your passion?

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Strategies to Enhance Psychological Richness

- Learning a new skill
- Seek activities that yield flow states
- Stretch beyond your comfort zone
- Become a lifelong learner
- Seek adventure
- Foster curiosity
- Lean into things that scare or intimidate you

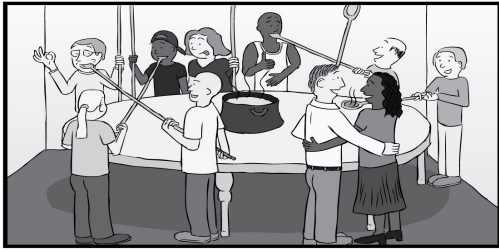
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Kindness and Compassion

"If you want to be happy, practice compassion." –The Dalai Lama



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Reflections on Kindness



95

Benefits of Kindness

<u>Psychological</u>	<u>Other</u>
Depression (Musick, 2003)	Increased longevity (Oman, 1999)
Anxiety (Post, 2008)	44% reduced mortality
Addiction (Pagano, 2009)	Improved physical health (Post, 2008; Borgonovi, 2008)
Meaning/Purpose (Schwartz, 2003)	Helps with multiple sclerosis, HIV (Post, 2008)
<u>Causal</u> factor (Lyubomirsky, 2007)	Work place success (Grant, 2013)
	Blue Zone Findings (Buettner, 2011)
	Closer relationships (Lyubomirsky, 2007)
	Romantic Relationships (Buss, 1989)

96

Your Brain and Body on Compassion

- Activation of pleasure centers in brain (Moll, 2006)
- Inferior Parietal Cortex (Weng, 2013)
- Anterior cingulate cortex
- Dorsolateral prefrontal cortex (Weng, 2013)
- Medial orbitofrontal cortex and ventral tegmental region (Klimecki, 2013)
- Vagus nerve stimulation (Keltner, 2010)
- Release of endorphins, dopamine, oxytocin
- 23% cortisol decrease
- Decreased stress hormones, strengthened immune response (Pace, 2009)
- Increased vagal tone (Kok, 2010)

97

5 Acts of Kindness (Lyubomirsky, 2008)

- 5 kind acts on a single day (bunch up)
- Repeat for 4 weeks
- Write about impressions/experience



98

Recalling Kindness (Ortaka, 2006)

- Acknowledging and Savoring kindness we've already given
- Reflect on 5 from past week
- Repeat for 4 weeks

99

Feeling Connection (Pavey, 2011)

- Reflect on a specific time when you felt a strong bond or connection to someone in your life
- Spend a few minutes writing and reflecting on this experience
- Repeat 1x/week

100

Self-Compassion

"If your compassion does not include yourself, it is incomplete."
—Jack Kornfield



101

Self-Compassion

Key Concepts:

- 3 components (Neff, 2011)
 - Self-Kindness
 - Mindfulness
 - Shared Humanity
- Self-Compassion vs. Self-Esteem
 - "Contingent self-worth"
 - Unstable concept

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Barriers to Self-Compassion

- "It will make me weak"
- "It's selfish"
- "I won't achieve my goals"
- "A pity party"
- Others?

103

Benefits of Self-Compassion

<u>Psychological</u>	<u>Other</u>
Lower rates of depression & anxiety (Neff, 2011)	Alleviates chronic pain
Recovery from PTSD (Thompson & Waltz, 2008)	Improved lower back pain (Carson, 2005)
Eating Disorders (Leary & Adams, 2007)	Chronic Acne (Kelly, 2009)
Cigarette Smoking (Kelly, 2010)	Closer relationships (Germer, 2009)
Greater compassion towards others	Increased altruism (Crocker & Canavello, 2008)
	Romantic Relationships (Neff, 2011)
	School & Work (Neff, 2011)

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The Physiology of Self-Compassion

Self-Criticism

- Increased amygdala response
- R Prefrontal Cortex
- Cortisol increases
- Adrenaline released

Self-Compassion

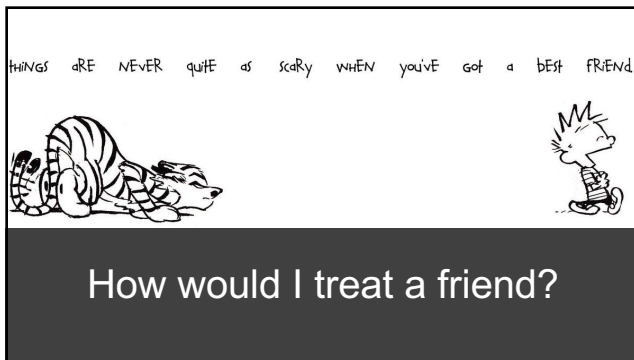
- L Prefrontal Cortex
- Increased PNS activation
- Breathing slows
- Insula activation
- Decreased cortisol
- Increased oxytocin

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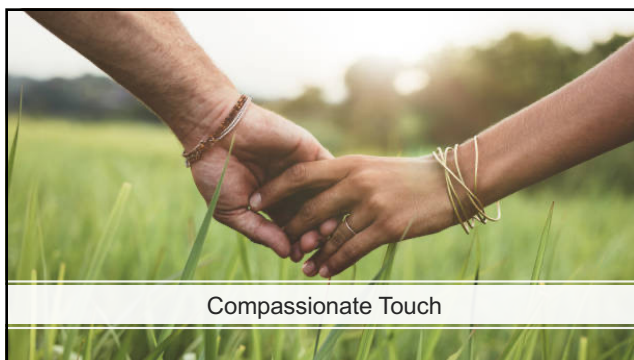
Self-Compassion Break

- Reflect on something causing you stress
- Feel the feelings, call it to mind
- In the moment, saying to yourself:
 1. This is a moment of suffering
 2. Suffering is a part of life
 3. May I be kind to myself

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A Letter of Self-Compassion

- Envision receiving kindness from a trusted loved one
- Identify perceived problem/ flaw
- Letter written to yourself from this perspective
- Allow the feelings to sink in

“ The curious paradox is that when I accept myself just as I am, then I can change.” – Carl Rogers

109

Self-Compassion Journal

- 1x/day for 1 week
- Writing about one event from the day that caused you pain, that created negative self-judgment, or that you felt bad about.
- For each event or situation, use the 3 pillars of self-compassion to reframe the experience

110

Self-Appreciation

- Recognizing and savoring the positive aspects of ourselves
- The importance of recognizing the whole picture
- 5 aspects of self you are proud of
- Savoring the experience

111

Loving-Kindness Meditation



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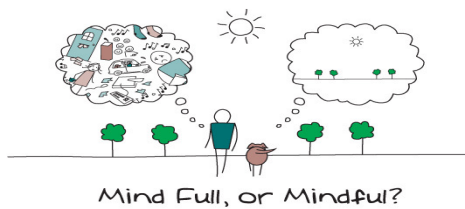
Benefits of Loving-Kindness

- Increased positive emotions (Frederickson, 2008)
- Increased Vagal Tone (Kok, 2013)
- Reduced Migraines (Tonelli, 2014)
- Improves lower-back pain (Carson, 2005)
- PTSD symptoms (Kearney, 2013)
- Increased gray matter (Leung, 2013)
- Prosocial behaviors increased (Leiberg, 2011)
- Increased empathy (Klimecki, 2013)

113

Mindful Awareness

"The present moment is filled with joy and happiness. If you are attentive, you will see it." –Thich Nhat Hanh



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115

What is
Mindfulness?

“Mindfulness means
paying attention
in a particular way;
On purpose, in
the present moment,
and non-judgmentally.”

Jon Kabat-Zinn

116

- Mindfulness vs. Mindlessness
- The toll of a wandering mind
(Killington & Gilbert, 2010)
- Barriers to Mindfulness
 - Modern Culture
 - What mindfulness is not
- A way of being in the world



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Benefits of Mindfulness

Psychological

- Depression (Keng, 2011)
- Reduced stress & anxiety (Hofmann et al., 2010; Bowden, 2010)
- Buffers against future depressive episodes (Williams & Penman, 2011)
- Happiness, Well-Being (Shapiro, 2008)
- Problem-solving, attention & focus (Moore, 2012)
- Enhanced cognitive ability (Xion & Doraiswamy, 2009)
- Disordered Eating
- Decreased negative emotions (Erisman, 2010)

Physical

- Fewer doctor's visits, fewer hospital days (Williams & Penman, 2011)
- Immune system (Davidson & Kabat-Zinn, 2003)
- HIV (Creswell, 2009)
- Chronic Pain
- Reduced insomnia (Bowden, 2012)
- Improved heart rate variability (Miu, 2009)

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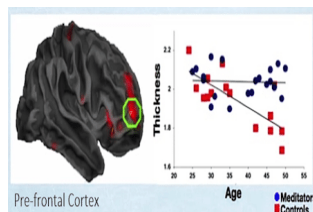


Benefits of Mindfulness

Life/Relationships

- Improved job performance & retention (Dane, 2013)
- Less aggression, improved behavior in schools for students
- Lower BP for teachers (Flook, 2013)
- Increased altruism (Condon, 2013)
- Increased empathy (Fulton, 2005; Shapiro & Izett, 2008)
- Increased compassion for others' suffering (Weng, 2013)

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Pre-frontal Cortex

Age

Meditators
Controls

Mindfulness and the Brain

- Left PFC (Davidson, 2003)
- Activation of memory and learning centers (Holzel, 2011)
- Decreased amygdala response (Davis, 2008; Lieberman, 2007)
- Increased left hippocampal volume
- Offsets cortical thinning (Lazar, 2005)
- Structural changes can occur in as little as 12-16 weeks

120

Mindfulness of the Breath



- Find a comfortable and relaxed position
- Tune into the breath – the rise and fall of your abdomen, the sensations, one breath at a time
- Notice when mind wanders, and redirect to the breath
- 5-7 minutes

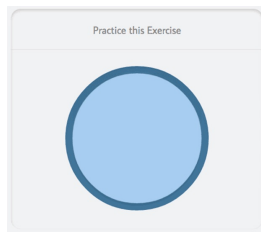
121

Everyday Mindfulness

- Choose 1 “autopilot” activity per day
- Cultivate present moment, nonjudgmental awareness
- Examples include:
 - Eating
 - Walking
 - Showering
 - Cleaning Dishes
 - Gardening
 - Others?

122

Slow Exhale Breathing



- Activates the vagus nerve, helping to activate our PNS
- Aim for 5-6 breaths per minute (versus 10-15)
- Elongate the exhale
- Breathe through nose

123

Mindfulness of our Senses




124

Awareness of Emotions



125

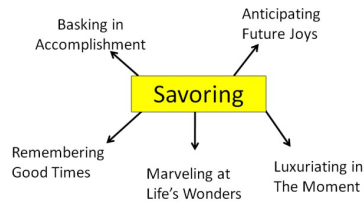
Savoring



How The Simple Act
of Savoring Can Make You Happier

126

5 Paths to Savoring



127

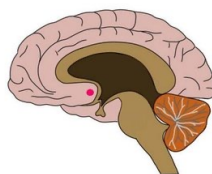
Savoring

- | <u>Why</u> | <u>How</u> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Negativity Bias • Positive experiences come and go • Using the mind to change the brain <ul style="list-style-type: none"> • Increased neural firing • Long-term changes | <ul style="list-style-type: none"> • 3 A's <ul style="list-style-type: none"> • Attend <ul style="list-style-type: none"> • Notice or Create • Amplify* <ul style="list-style-type: none"> • Enrich the experience • 5-10 seconds or more • Absorb <ul style="list-style-type: none"> • Let it sink in |

128

Savoring and the Brain

- Ventral Striatum
 - Linked to sustaining positive emotions and reward
- Left Prefrontal Cortex
- Dorsolateral Prefrontal Cortex
- Decreased Cortisol
- Increased serotonin, dopamine



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Tips for Savoring (Fred Bryant)

- Share the Experience with others ("Capitalizing")
- Memory Building
 - Mental Notes, Photos/Souvenirs
- Self-Congratulate
- Pay attention to our senses
- Avoid multitasking
- Absorption
- Ruminant on the Good

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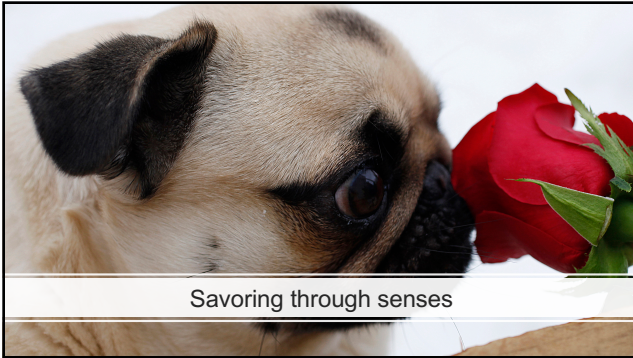


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Savoring Walk



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Savoring through senses

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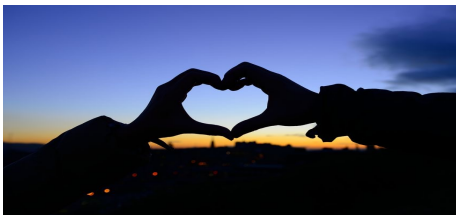
Savoring the everyday

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Connection

"Happiness is love. Full stop." –George Vaillant



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Connection

- "Wired" to connect (Lieberman, 2013)
 - "As basic of a need as food or shelter"
- "Social Brain" Hypothesis (Dunbar, 2003)
 - Brain size predicted by group size
- Born to Connect (Christakis & Fowler, 2013)
- Quality > Quantity

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Alarming Trends

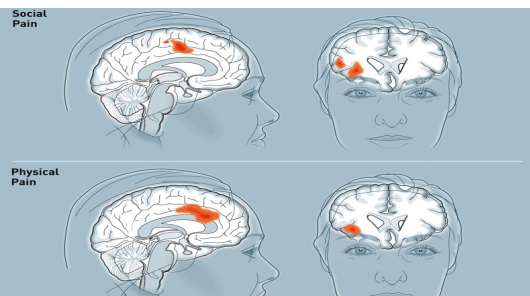
- Increased loneliness (McPherson, 2006)
- Influence of technology
- Decreased volunteerism
- Fewer and fewer close friends
- College Student Surveys:
 - 1965: Helping others > \$
 - 2012: Top goal (81%)=earning \$\$\$

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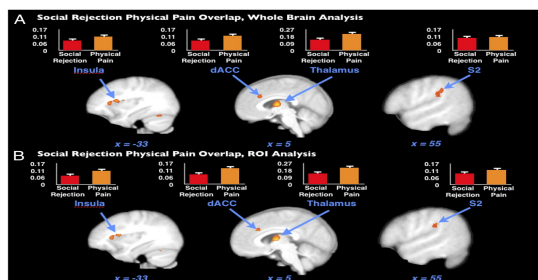
Lessons from "Cyberball"



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141

Benefits of Connection

Psychological

- Happiness and Well-Being (King & Diener, 2005)
- Bi-directional relationship
- Lower levels of depression and anxiety (Lyubomirsky, 2007)
- Decreased anxiety (Cohen, 2004)
- Improved sleep (Cohen, 2004)

Physical

- Improved physical health/immune systems (Pressman, 2005)
- Longevity (House, 1988)
 - On par with smoking, substance, exercise
- "Blue Zone" findings (Beutner, 2010)
 - Sardinia, Okinawa, Loma Linda, Icaria, Nicoya

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Our Brain and Body on Connection

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Poor Social Support linked to: <ul style="list-style-type: none"> • Activation of the pain centers of our brain • Cingulate gyrus activation in social pain experiences • Increased activation of amygdala • Telomere shrinkage (Epel, 2009) • Cortisol dysregulation • Seeing others' pain activates our own pain centers (Botvinick, 2005) | <ul style="list-style-type: none"> • Good Social Support linked to: <ul style="list-style-type: none"> • Decreased cardiovascular reactivity (Lepore, 1993) • Decreased blood pressure (Spitzer, 1992) • Decreased cortisol (Kiecolt-Glaser, 1984) • Improved immune system functioning (Cohen, 2003) • Slows cognitive decline (Bassuk, 1999) • Vagus nerve stimulation • Increased release of oxytocin |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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Gratitude Letter and Visit



144

Loving-Kindness Meditation

May you be happy.
May you be well.
May you be safe.
May you be peaceful
and at ease.

gingerbluestudios.com

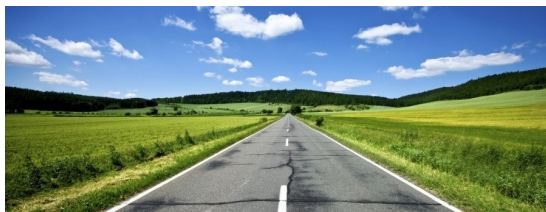
145

Active-Constructive Responding (Gable, 2004)

- 4 types of communication styles
 - Active-Constructive
 - Passive-Constructive
 - Active-Destructive
 - Passive-Destructive
- Only A-C responding associated with positive relationships

146

Best Possible Self for Relationships



147

Strengths and Flow



148

Signature Strengths

- 24 Signature Strengths, 6 core virtues (Seligman & Peterson)
 - Character Strengths and Virtues – Classification Handbook (Peterson & Seligman)
 - Assessing/Testing strengths
 - VSI (Values and Strengths Inventory)
 - BST (Brief Strengths Test)
 - Utilizing strengths in new ways
- www.viacharacter.org
www.authentic happiness.com

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Examples of Items

- Love of Learning
 - Do you feel an adrenaline rush from learning new things?
- Kindness
 - Have you done good deeds for strangers on a regular basis?
- Appreciation of Beauty
 - Does a sense of awe sweep over you as you contemplate the vastness of nature?
- Creativity
 - Is your mind constantly challenging the status quo and looking for a better way?

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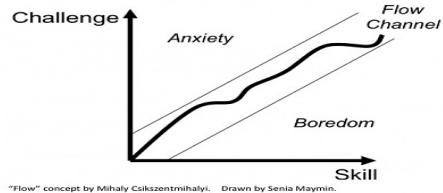
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Identifying and Using Signature Strengths

- Take the VSI or BST to identify core strengths
 - Ensure that identified strengths resonate with the individual
- Identify 3-5 core "signature" strengths that are both resonant and high scoring
- Choose 1 signature strength per day
- Use it in a way that is outside your normal routine

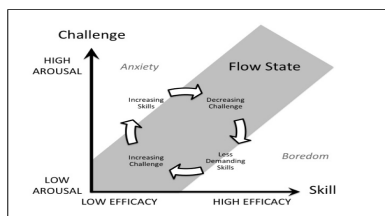
153

Flow (Csikszentmihalyi)



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Flow (Csikszentmihalyi)



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Flow

- A state of complete absorption in what one does
- Moments of peak performance
- Matching skills to challenge
- How to Increase Flow
 - Activities that engage our skills and strengths
 - Using Signature Strengths in new ways

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Flow and the Brain

Neuroanatomical changes

- transient hypo-frontality
- temporary deactivation of the prefrontal cortex

• Neurochemical Changes

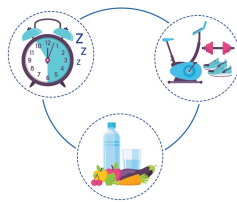
- Large quantities of norepinephrine, dopamine, serotonin, endorphins, anandamide

• Neuroelectrical Changes

- Increased alpha waves to enhance focus & concentration

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Lifestyle Factors



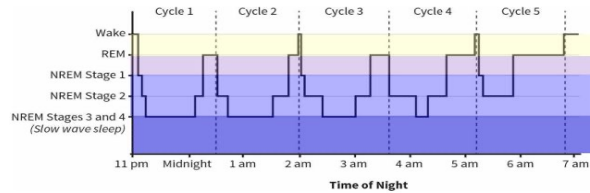
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Sleep

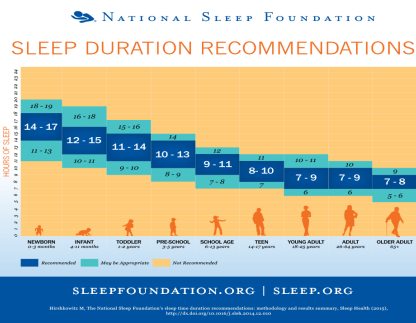


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Sleep Architecture



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How much
do I need?

161

The Importance of Good Sleep

- **Poor Sleep Quality:**
 - Linked to depression, anxiety, stress, and risk of mania/hypomania
 - Decreases impulse control and affect regulation
 - Increases risk of numerous health conditions
 - Decreases cognitive function
 - Greater sensitivity to pain
 - Decreases prefrontal activity (Altena, 2008)
- **Good Sleep Quality:**
 - Cleans away metabolic waste via cerebrospinal fluid (Xie, 2013)
 - Improves cognitive functioning
 - Decreases depression and anxiety
 - Reduces reward response to unhealthy behaviors
 - Reduces feelings of loneliness
 - Increases empathy
 - Improves emotion regulation

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Healthy Sleep Tips

Do's

Keep a regular schedule
Exercise regularly—but not within 3 hours of bedtime
Keep a comfortable sleep environment—consider temperature, bedding, lighting, etc.
Shut off all bright screens—including phones and televisions—at least 1 hour before bedtime
Establish a relaxing pre-bedtime routine—this can include things like taking a warm bath, listening to soft music, or drinking chamomile tea
Use your bed only for sleep or sex

Don'ts

Take daytime naps—these can interfere with your ability to sleep well at night
Use stimulants such as caffeine or nicotine (especially within 6 hours of bedtime)
Go to bed too hungry or too full
Exercise vigorously within 3 hours of bedtime
Drink alcohol—especially within 3 hours of bedtime
Stay in bed when you can't sleep—if you cannot fall asleep within 30 minutes, get out of bed and try a low-stimulation activity
Watch TV in bed, eat in bed, talk on the phone in bed—these can make it harder to sleep at night
Watch the clock

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Exercise & Movement

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Exercise

- Mood benefits after 20 minutes can last 12 hours
- Reduces cortisol and adrenaline
- Improves sleep quality and quantity
- Increases blood flow to PFC
- Improved memory, concentration, and focus
- Release of BDNF
 - Low levels linked to depression, memory and learning impairment
 - Critical for brain health
- Increases Serotonin, Norepinephrine, Dopamine, and endocannabinoids
- Similar effect sizes as medication and psychotherapy for low/moderate depression
- Countless benefits for physical and mental health

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Exercise Keys & Tips

- Make it aerobic: 55-90% max heart-rate
 - Max HR=220 minus your age
- Make it sustainable
 - Choose activities that fit with your lifestyle and that you enjoy
- It's OK to keep it short
 - 20 minutes can go a long way
- Make it a habit

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First the bad news...

- Excess belly fat:
 - Increases chronic inflammation
 - Decreases BDNF
 - Increases risk of dementia
 - Increases risk of depression
- Excess glucose:
 - Slows neural communication
 - Interferes with synaptic transmission
 - Increases chronic inflammation
- Trans fats:
 - Increases inflammation
 - Decreases blood supply to brain
 - Increases LDL and decreases HDL

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Nutrients
for Mental
Wellness

- **Omega 3's**
Combats Depression, fatigue, mood swings
Salmon, Spinach, Herring
- **Magnesium**
Improves fatigue, stress, irritability, TRD
Spinach, Edamame, Cashews, Almonds
- **Vitamin D**
Improves depression, enhances cell generation
Eggs, Salmon, Swordfish, Milk

- **Zinc**
Low levels linked to depression
Beef, Pumpkin seeds, Peanuts, Kidney Beans
- **Chromium**
Increased serotonin & norepinephrine
Broccoli, Grapefruit, Turkey
- **Folate**
Serotonin regulation & brain cell regeneration
Spinach, Avocado, Brussels sprouts

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Forgiveness

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“Resentment is like drinking poison and then hoping it will kill your enemies.”

—Nelson Mandela

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Forgiveness

- The toll of resentment
 - The second arrow
- Defining Forgiveness
- What forgiveness is not:
 - Forgetting
 - For the other person's sake
 - Condoning or Minimizing
 - Reconciliation
 - A quick fix

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Benefits of Forgiveness

Psychological

- Lower rates of depression & stress (Worthington, 2007)
- Well-Being (Luskin, 2002)

Physical

- Impact of anger/resentment
 - Stress-related illness
 - Heart disease
 - Recovery from cancer (Luskin, 2002)

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Benefits of Forgiveness

Life/Relationships

- Improved relationships
- More likely to volunteer, donate to charity (Karremans, 2005)

Brain/Body

- fMRI findings (Ricciardi, 2013)
 - Inferior parietal cortex
 - Precuneus
- Calming of the Amygdala
- L>R prefrontal activation

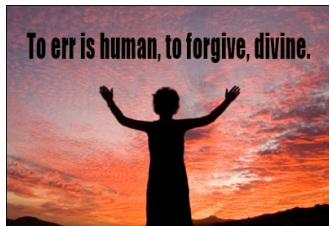
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Forgiveness Letter



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Recalling Forgiveness



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Forgiveness Meditation



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Drawing Strength from Adversity

- (Gently) explore the benefits that occurred from the setback
- Journal about the ways in which you grew, changed, or learned from the experience

181

Cultivating Empathy

- Exploring alternative perspectives
 - Perspective of the transgressor
 - Perspective of a neutral party
- Visualizing remorse

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Tips for Practice

- Remember it's a process
- Recognize small milestones
- Timing is everything
- Get support
- Feel the Feelings
- No shortcuts

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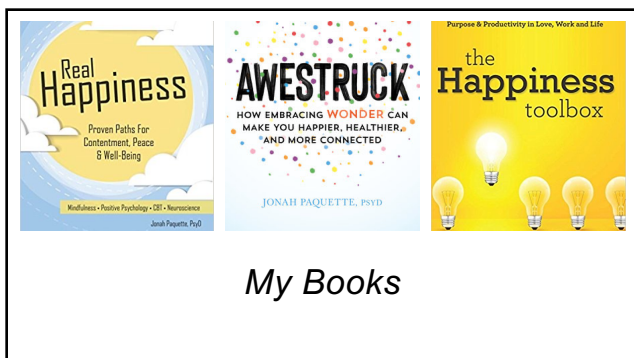


The wolf we
feed

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My Books

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