Hope, Social Connectedness, and Mental Health

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Available at: https://works.bepress.com/andrea-walker/25/
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Hope as an Outcome of Social Connectedness
The Study of Psychology

”What is wrong with you?”

The aim of most interventions is the reduction of problems.

Depression, Homelessness, Anger, Acting Out, Financial Insecurity, Truancy, Unemployment, etc.

Growing Awareness of Adverse Childhood Experience has reframed the question to a more trauma informed:

“What Has Happened To You?”
What if, in our attempt to better respond to childhood trauma, we also began to ask:

“What is right with you?”

Is there a psychological strength that allows children, adults, families, and communities to thrive?

Can this strength be easily measured?

Can this strength be nurtured?
Hope is the belief that your future will be better than today and you have the power to make it so.

Hopeful individuals identify one or more pathways toward their goal; and can focus their agency (willpower) toward their goals and the pathways.
The Simplicity of Hope Theory!

**Goals:** Cognitive endpoint of *purposeful* behavior.
- Can be either short- or long-term.
- Must be of sufficient value to motivate behavior

**Pathways (Waypower):** Mental roadmaps to goal attainment.
- Ability to consider potential barriers with workable solutions.
- Ability to identify multiple pathways.

**Agency (Willpower):** Mental energy to your pathway pursuits.
- Ability to self-regulate thoughts, emotions and behaviors.
- Focus your attention and intention on goal pursuits.
HOPE THEORY

Will Power (Agency)

Way Power (Pathways)

Desirable Goal

...agency without pathways is a wish!
THE LOSS OF HOPE
THE LOSS OF HOPE

HOPE

Anger
• Goal is significantly blocked.

DESPAIR
• Unable to adjust goal. Pathways are unavailable.

APATHY (Hopeless)
• Loss of Motivation
Figure 1: Structural Model ($N' = 258$)

Fit Statistics: $\chi^2 = 254.02$; df = ; $p = < .001$; RMSEA = .06 [90% CI: .049, .072]; SRMR = .055; CFI = .927.

*p* = < .01; *ns* = not significant
BEHAVIOR

TRAUMA
(ACES)
Prevalence of ACE

Consider A Few Comparisons

CDC National Data 1.61
Children Exposed to DV 4.04
Juvenile Offenders 4.29
Foster Children 5.68
The Application of Hope

How well can you manage your willpower?

Selected Pathway

Identified Goal

Attention Detractors

Unmitigated trauma is a hope ROBBER!
Besides “rumination”, what are other potential mechanisms that link trauma to lower hope?

Breaking into 2s of 3s, answer the following questions:

1.) What are 2 goals you would like to achieve over the next month?

2.) In detail, articulate your pathways to achieve those 2 goals.
CAMP HOPE and ACE

Prevalence of Adverse Childhood Experiences.

<table>
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<tr>
<th>ACE Score</th>
<th>CDC Study (N=17,337)</th>
<th>Camp HOPE Children (N=180)</th>
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<tr>
<td>0</td>
<td>36.1%</td>
<td>5.6%</td>
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<tr>
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</tr>
<tr>
<td>4+</td>
<td>12.5%</td>
<td>55.6%</td>
</tr>
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</table>

The Average Number of ACE = 4.40*
THE POWER OF HOPE

Changes In High ACE Children Hope

Pretest: 25.38
Posttest: 27.51
30 Day F/U: 28.67
Social Connectedness and Research

NEUROLOGICAL UNDERPINNINGS

HOW TO DEVELOP SOCIAL CONNECTEDNESS

OUTCOME OF SOCIAL CONNECTEDNESS
The striatum is one of the principal components of the basal ganglia, a group of nuclei that have a variety of functions but are best known for their role in facilitating voluntary movement.
Social isolation works through the brain’s reward system to be experienced as actual pain. Why?

- Experimental research (Wurzman, 2018)
- The role of social neuroscience (Cacioppo, 2007)
Developing Social Connectedness

Neuroplasticity = It’s all about practice!

In very difficult cases, such as with trauma, seek appropriate treatment

How do we become vulnerable to loneliness or “disconnection” in the first place?
Core Strengths for Healthy Social Development

attachment – ability to form dyadic relationship

self-regulation – ability to regulate self; built from attachment

affiliation – ability to relate within larger group

attunement – ability to notice that others are different

awareness – ability to learn what others are like

tolerance – ability to see that the world needs diversity

Dr. Bruce Perry: https://www.youtube.com/watch?v=skayWKC6iD4
Social Connectedness in a larger context (macrosystem)

Are we socially connected as a society? A community? Why or why not?

Outcome of Social Connectedness: What research says

- Literature
- Model tested
Figure 1: Empirical Values of the Model of Best Fit (N = 206)

Social Connectedness to a Metro Area → Life Satisfaction

Life Satisfaction → Flourishing

Life Satisfaction → Hope

Flourishing $R^2 = .066$

Hope $R^2 = .333$

Life Satisfaction $R^2 = .145$

Fit Statistics: $\chi^2 = 629.075$; df = 294; $p = < .001$; RMSEA = .075 [90% CI: .067, .083]; SRMR = .065; CFI = .908.

*p = < .01
Social connectedness predicts life satisfaction, which leads to psychological flourishing and greater hope. **Put simply, we need each other to flourish.**
Social Connectedness and Hope

An Example of Addiction
An Example of Addiction

...I hit bottom one morning after five and a half days in that hotel room two miles from my home. The night before I had run out of vodka and it was too late to order more. Morning had come, and there was no morning drink to continue my escape. I looked into the mirror and saw defeat. The strange disease had me, and my efforts to conquer it had only wrapped the web more tightly around me.

(James Nelson, Thirst: God and the Alcoholic Experience, p. 101)
How does the brain change during addictions?

1. Numbs response in the brain’s pleasure center, the nucleus accumbens (NA)
2. Stronger associations and increased cravings
3. Weakens inhibition from prefrontal cortex (PFC)
1. Numbing of the Pleasure Center

- Addictive drugs stimulate the NA much more than everyday activities.
- Tolerance = the brain’s attempt to compensate for repeated overstimulation of the reward circuit, inhibiting stimulation of the (NA), numbing pleasure.
2. Stronger Associations and Increased Craving

- Where do these overwhelming cravings come from?
  - Craving or wanting ≠ liking
  - Craving increases even though pleasure decreases

- Neural basis for wanting or craving = Ventral tegmental area (VTA)
  - Associated with reward prediction (prediction error)
  - Neurons in VTA fire when reward is unexpected
  - Dopamine, central to all addictions, is released
Dopamine = Craving

- Research: Mice with high levels of Dopamine
  - Exhibit high levels of craving
  - Move more quickly toward reward stimuli than other mice
  - Once they get reward, do not seem to enjoy it any more than other mice

- Incentive salience = the incentive or motivation to light up becomes particularly salient or strong.
  - Dopamine signal conveys that strong incentive.
  - (Berridge, 2007; Robinson & Berridge, 2001)

- Associative learning = dopamine release triggers learning, so associations with environmental cues are made
3. Weakened Inhibition from PFC

- The PFC is involved in our ability to consider future consequences and make rational decisions.

- Repeated use of addictive drug leads to abnormalities in the PFC which undermine our ability to exhibit self-control.

**Research**

- Rats: misshapen dendrites in the PFC (Robinson & Kolb, 2008)

- Humans (Goldstein & Volkow, 2002; Goldstein & Volkow, 2011):
  - Reduced activity in PC in chronic users
  - Overall volume of PC is reduced in drug addicts
  - Poor performance on tasks requiring decision-making, working memory, and sustained attention for prefrontal patients
Brain’s Effect on Addiction

1. PFC has hard time overcoming increasingly powerful and salient cravings.

2. Ability to exhibit self-control over impulses gets weaker.

3. Each time the PFC loses the battle in handling impulses, the more likely it is to lose the next battle.

4. All the while, the individual has difficulty feeling pleasure and may feel more and more hopeless with abstinence violations.
As it turns out, the striatum is involved too!

- Neurochemistry of striatum:
  - Oxytocin release
  - Endogenous opioid reception
  - Deeply linked with social processes
What happens during loneliness (social disconnection)?

- Our social neurochemistry gets HUNGRY
- Predisposes individuals to a myriad of mental and physical health problems (Cacioppo, 2014)
- Hypersensitization of the reward system
  - Remember what happens to the reward system during addiction?

If we are dealing with an addiction, and do not have the ability to connect socially, the implications are serious.

- Social isolation has been found to be related to relapse
Social disconnection through opioid receptors, the effects of addictive drugs, and the effects of abnormal neural transmission on involuntary movements and compulsive behavior all converge in the striatum (Wurzman, 2018).
Social Connectedness and Hope

- The hope in addiction is, quite literally, in connecting socially.
  - The cards are stacked against us, and here’s why...

- The striatum is the tool to bring people back into our lives. How?

- Practice, practice, practice!!!
  - Replace compulsive behaviors with connecting behaviors
  - If it feels uncomfortable, you’re probably doing it right.
  - *Neurons that fire together, wire together!*
Today Adam Grant and I met with Actively Moving Forward (AMF), a motivating student group that has been brought together through grief. Actively Moving Forward is a national organization that offers support for young people coping with the illness or death of a loved one. It’s peer-led, and what I really love about this group is that it’s also service-oriented: AMF gives the entire campus opportunities to raise money and awareness for causes they care about – and it gives grieving students in particular an outlet to channel their energy for good.

My thanks to all the students who met with us today. This will always be a club they didn’t want to join – but the way they are making the most of Option B is extraordinary.

Grief recovery and support groups (AMF and HealGrief)

- Yoga recovery group

Running for recovery group
Social Connectedness leads to better mental health and shows the potential of helping to generate more hope. How?
Bringing it all together

- Revisiting Hope Theory
- Transtheoretical Model (TTM): Stages of Change
- Neurobiology of hope
Revisiting Hope Theory!

Goals: Cognitive endpoint of purposeful behavior.
- Can be either short- or long-term in nature.
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Pathways: Mental roadmaps to goal attainment.
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The Stages of Behavior Change

- Contemplation (aware of the problem and of the desired behavior change)
- Preparation (intends to take action)
- Action (practices the desired behavior)
- Maintenance (works to sustain the behavior change)

Stage Cycle:
- Contemplation Stage
- Precontemplation Stage
- Preparation Stage
- Action Stage
- Maintenance Stage
- Relapse Stage
- Precontemplation Stage
Transtheoretical Model (TTM) of Change

- **Processes of Change**
  - **Cognitive**: consciousness raising *(awareness)*
  - **Behavioral**: self-liberation/helping relationships *(openness)*; becoming open to new possibilities and becoming more trusting with caring people

- **Marker of Change**
  - **Self-efficacy** – strong predictor of individuals who are able to sustain the actions needed to instigate and maintain the behavior change over time;
TMM and Hope Theory

Self-Efficacy

- Awareness of and Openness to

Desirable Goal

Will Power (Agency)

Way Power (Pathways)
And so it seems, anything that helps advance propositional thinking (way power or pathways) and self-regulation (will power or self-efficacy) will advance hope.

Where is the seat of propositional and hypothetical thinking, and where also does the ability to self-regulate reside?

- At the center of executive functioning, the **prefrontal cortex (PFC)**

It appears that fostering hope requires strengthening of the PFC!
What activates the prefrontal cortex?

Religious/spiritual activities, activities involving connection with others, CBT interventions, and a few other things such as yoga and Psalms recitation.

The largest base of evidence has found Mindfulness meditation to associate with lasting changes in the PFC.
Evidence of Outcomes of Mindfulness

- Increased empathy, due to activation of insula during mindfulness meditation (Birnie, Speca, & Carlson, 2010; Lazar et al, 2005)
- Staving off of age-related cognitive decline (Gard, Holzel, & Lazar, 2014)
- Tasks assessing attention: Short-term memory, Perceptual speed, Executive functioning, Fluid intelligence
- Increasing alerting and sustained attention (MacLean et al., 2010)
- Increased empathy, due to activation of insula during mindfulness meditation (Birnie, Speca, & Carlson, 2010; Lazar et al, 2005)
Prefrontal cortex activity
- Right prefrontal activity: hypervigilance, depression, anxiety
- Left prefrontal activity: happy, enthusiastic, energized

Experienced meditators had most extreme left prefrontal activity of all!

Experimental study: those in 8 week mindfulness course tipped left, reporting improved moods, greater engagement, and higher immune response to flu vaccines (Davidson et al., 2003)
Experienced meditators had thicker anterior insula, sensory cortex, and prefrontal cortex (Lazar, 2005)
- Difference greater for advancing ages
- Decreased anterior insula associated with PTSD, social anxiety, some phobias, and schizophrenia

Experimental study involving 8 week meditation program - Increases in gray matter in left hippocampus found in treatment group (Holzel et al., 2011)
- Learning and memory process
- Emotion regulation
- Perspective taking
Conclusions

- Stronger social connections + stronger PFC neural connections = better mental health

- It appears the pathway to better mental health is HOPE
  - Hope is generated in the striatum through social connectedness
  - Hope is reinforced and maintained through strong PFC functioning
  - This needs to be tested directly

- Results of recent research seem to suggest this. Remember the results regarding social connectedness and psychological flourishing in Tulsa?