

Positive Technology: Using Cyberpsychology and Interactive Technologies to Improve Well-Being

Dr. Albert Liau

In general, I consider myself

1 2 3 4 5 6 7
not a very happy person a very happy person

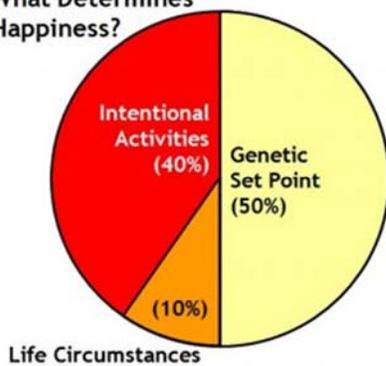
There is scientific evidence from positive psychology that behavioral vaccines can improve well-being.

New media and interactive technologies show promise in helping us improve our well-being

Question

- Which do you think is the main factor influencing one's happiness:
- 1. Genetically determined set point
- 2. Life circumstances
- 3. Daily intentional activities

What Determines Happiness?



Lyubomirsky (2008)

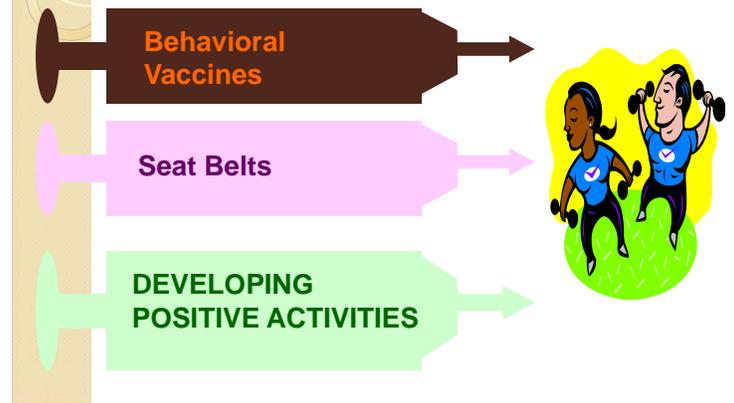


- Lottery winners were not happier than accident victims with spinal injuries
- Hedonic Adaptation

Benefits of Happiness

- College students who were happier had higher salaries 16 years later
 - (Diener et al., 2002)
- Women who expressed more joy in college had more satisfying marriages at age 52
 - (Harker & Keltner, 2001)

Intentional Activities



Why teach behavioral vaccines?

1. prevent depression
2. they are supported by scientific evidence that they reap the benefits of improved well-being and/or lower depressive symptoms

- **The World Health Organization predicts that by 2020 more people will be affected by depression than any other health problem.**
- According to the WHO, depression will be the biggest health burden on society both economically and sociologically.

<http://news.bbc.co.uk/2/hi/8230549.stm>

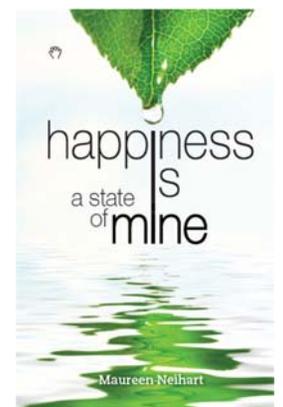
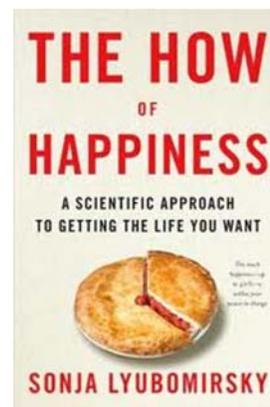
Mental Health in Singapore

- Young people, aged 18 to 29, are at higher risk of having mental health problems than older people
- 6600 in 2010

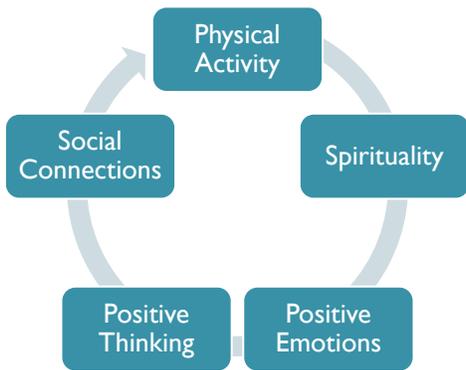
| | 18-29 | > 30 |
|------------|---------|---------|
| Depression | 1 in 14 | 1 in 19 |
| OCD | 1 in 24 | 1 in 37 |
| Alcohol | 1 in 33 | 1 in 32 |

Source: Today, May 3 2012

Scientific Evidence for Behavioral Vaccines



Behavioral Vaccines



JULY 6, 2011, 12:01 AM | 115 Comments

Why Exercise Makes Us Feel Good

By GRETCHEN REYNOLDS



Why does exercise make us happy and calm? Almost everyone agrees that it generally does, a conclusion supported by research. A [survey by Norwegian researchers published this month](#), for instance, found that those who engaged in any exercise, even a small amount, reported improved mental health compared with Norwegians who, despite the tempting nearness of mountains and fjords, never got out and exercised. A [separate study](#).

<http://well.blogs.nytimes.com/2011/07/06/why-exercise-makes-us-feel-good/>

<http://well.blogs.nytimes.com/2012/07/31/exercise-can-ease-depression-in-heart-failure-patients/>

Exercise May Ease Depression in Heart Failure Patients



Goal: 10,000 steps a day

Spirituality, Religion & Meditation

Half an hour's meditation each day is essential, except when you are busy. Then a full hour is needed – St Francis de Sales

Shauna Shapiro

Gratitude Activity (Count your blessings)

“There are many things in our lives, both large and small, that we might be grateful about. Think back over the past week and write down on the lines below up to five things in your life that you are grateful or thankful for.”

Emmons & McCullough (2003)

Gratitude Visit/Letter

- Write a letter of gratitude.
- Arrange to meet the person you wish to thank (but do not give away the surprise).
- Read the letter in person. Enjoy the moment!

Effects of gratitude

- More positive feelings (joyful, enthusiastic, interested, attentive, energetic, excited, determine & strong)
- More satisfaction with life
- More optimism
- Better physical health
- Slept better
- More exercising
- Helping others more



Effective for a variety of people

- Psychology undergraduates (Emmons et al, 2003)
- Neuromuscular Disease (Emmons et al., 2003)
- Online adult sample with mild depression (Seligman et al., 2005)
- Adolescents (Froh et al., 2008)

Research in an Asian Context

- Malaysian psychology undergraduates (Senf & Liau, 2013)
- At-risk adolescents in Singapore (Ng & Liau, 2015)
- Male young offenders in Singapore (Lin & Liau, 2015)

The Theory

- Fredrickson's Broaden & Build Theory:
 - Positive emotions **broadens** an individual's mindset
 - Helps to **build** enduring personal resources.

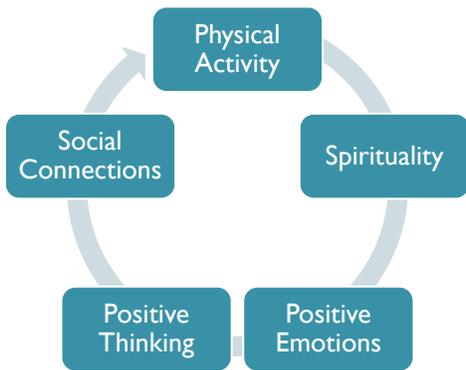
Optimism: Your Best Possible Selves

- Spend 20 minutes writing a description of your "best possible future self". In other words, imagine your future in all its domains and describe what would be the best possible scenario.
- *Variation:* Participants were asked to write about a time when they were at their best and then to reflect on the personal strengths displayed in the story.

Moderating Factors

- Timing and dosage matters
- Count blessings 1x per week for 6 weeks
> Count blessings 3x per week
- Fit and Effort matters
- Culture matters too!

How can we use technology?



Using Facebook makes me:

1 2 3 4 5 6 7
 not a very happy person a very happy person

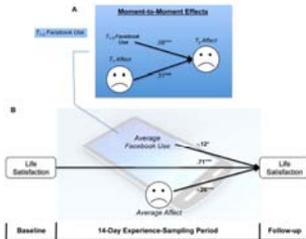
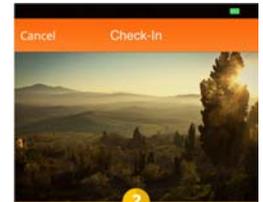


Figure 1. Facebook use predicts declines in affect and life satisfaction over time. Interacting with Facebook during one time period (10min) leads people to feel worse over an during the same day (1), controlling for how they felt already (1,2). Average regression weights from multilevel analyses (Panel A). Average Facebook use over the course of the 14-day experience-sampling period predicts decreases in the affect and life satisfaction over time (beta values are standardized regression weights from OLS regression analysis (Panel B). * $p < .05$, ** $p < .01$, *** $p < .001$).

- The more they used Facebook over two-weeks, the more their life satisfaction levels declined over time.
- Interacting with other people “directly” did not predict these negative outcomes
- Whether interacting with the Internet predicts changes in well-being depends on how you use it (i.e., what sites you visit) and who you interact with (Kross et al., 2013).

Are apps effective?

- A study on weight-loss apps found that they included goal setting but very few other behavioral strategies such as stress reduction, negative thinking, developing regular pattern of eating, etc. (Pagoto et al, 2013).



It's Time For A Happiness Check-In
 Every two weeks you can get your latest happiness score by taking this assessment.
 If you'd like to take the assessment later, just tap cancel and it will be available to you the next day.

What Health/Fitness apps are you using?

- Out of 875,683 active with apps in iTunes, 23,490 were Health and Fitness apps.

Table 1. Statistics of applications on the Google Play platform via AppBrain, and Apple's App Store.

| Search terms | Google Play January 2014 | iOS App Store January 2014 |
|---------------|--------------------------|----------------------------|
| depression | 1615 | 586 |
| anxiety | 1269 | 775 |
| schizophrenia | 67 | 20 |
| bipolar | 151 | 90 |
| psychiatry | 168 | 149 |
| alcoholism | 1911 | 146 |

Why Positive Technology is Promising



Physical Activity

- From a meta-analysis of 26 studies & 2767 participants involved (Bravata et al., 2007), the use of pedometer can significantly increase the amount of physical activity
- Improved both physical and psychological health conditions by decreasing:
 - body mass index (BMI)
 - coronary artery disease (heart disease)
 - blood pressure
 - stroke
 - depression

Fitness Trackers

- Many - Jawbone, Fitbit, Nike FuelBand, Withings
- What are their “secrets” to promote fitness and physical activity? (Lyons et al., 2014)
- Common techniques:
 - Goal-setting - set and adjust behavioral goals
 - Self-monitoring of behavior
 - Feedback - the more personalized the better
 - Emphasize a discrepancy between current behaviors and goal behavior (equivalent to “mental contrasting”)
 - Social comparison and support

Web-based Interventions

- Web-based interventions can promote mental health:
 - (Mak et al., 2015): The mindfulness training performed entirely online for 8 weeks, significantly increased participants’ mental health and emotional well-being
 - (Griffiths et al., 2006): From a review of past internet interventions, a variety of mental health symptoms were effectively reduced:
 - Depression
 - Anxiety
 - Bipolar disorder (manic-depressive)
 - Post-traumatic stress disorder
 - Eating disorder

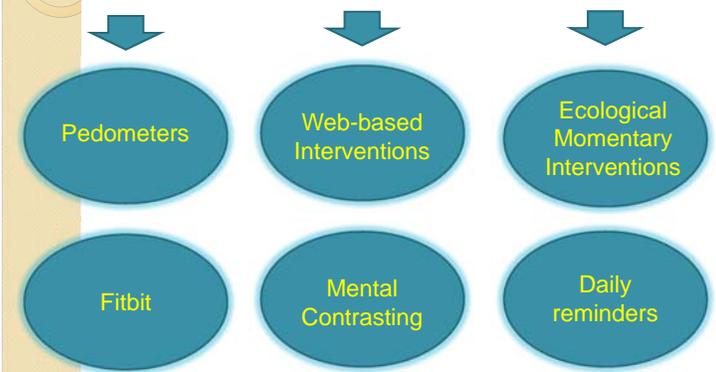
Web-based Interventions

- Web-based interventions can promote physical health
 - Increased physical activity in both young and elderly populations (e.g., King, et al., 2007; Hageman et al., 2005)
 - Alleviated cardiovascular disease in middle-aged and elderly populations, via continuous online modules and guidance for 12 weeks (Cockayne et al., 2011)
- Computer-tailored interventions can change unhealthy dietary behaviors
 - (Campbell, et al., 1999): a computer software programmed personalized feedback regarding participants’ dietary fat intake over time, which subsequently led to their lower fat consumption and healthier food choice.

Ecological Momentary Interventions

- Ecological Momentary Interventions [EMI] are treatments that are provided to people during their everyday lives (i.e., in real time) and in natural settings (i.e., real world).
- Effective at encouraging smoking cessation, improving weight loss in overweight women, and reducing anxiety symptoms

NIE Fitbit Study



Mental Contrasting



- WOOP
- W=Wish
- O=Outcome
- O=Obstacle
- P = Plan

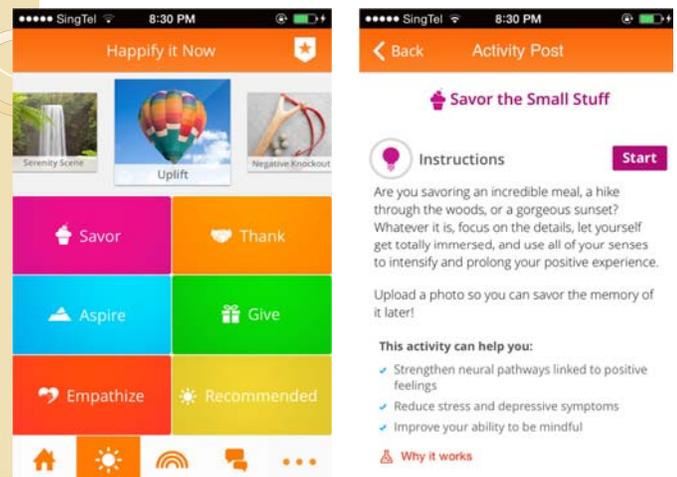
Some Predictions

- Positive technology based on scientific evidence would be generally effective
- Fit matters
- Effort matters
- Culture matters

Interesting Apps and Resources

- Happify
www.happify.com
- Woop
www.woopmylife.org
- Authentic Happiness Website
<https://www.authentichappiness.sas.upenn.edu/>
- e.g., signature strengths

Happify App



Google
"T2
health"



THANK YOU!
Which is your favorite behavioral vaccine?



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