Positive Psychology/Gratefulness

Fredrickson 2001: The Role of Positive Emotions in Positive Psychology

* Overview of the theory behind how positive emotions affect positive psychology
* Posits ‘Broaden-and-Build’ theory
  + Positive emotions broaden people’s momentary ‘thought-action repertoires’
  + This leads to building up personal resources.
    - Physical resources
    - Intellectual resources
    - Social and Psychological resources
  + Results in greater subjective well-being
* Proposes that capacity to experience positive emotions is a FUNDAMENTAL human strength central to how humans can flourish!

How do positive emotions help individuals/communities/societies to flourish?

* Lvl 1: Positive emotions mark successful flourishing/optimal well-being
  + If there’s positive emotions happening, there is NOT negative emotions happening!
  + The balance of positive and negative emotions has been shown to be indicative of individual judgements of subjective well being.
    - Kahneman (1999) posits that ‘objective happiness’ can be measured by tracking and aggregating momentary experiences of good and bad feelings (also see Fredrickson 2000c)
* Lvl 2: Positive emotions don’t just SIGNAL flourishing, but directly help PRODUCE flourishing!
  + And not just in the present moment of pleasant feeling, but over the long term as well!
  + Thus, positive emotion is worth cultivating, not just as an ‘end state’ but as a means of achieving growth and improved SWB over time.

Perspectives on emotions and affect

* Emotion is a SUBSET of affective phenomena as a whole
* Emotion is a ‘multicomponent response tendency’ that unfolds over a relatively short period of time
  + Generally beginning with subject assessment of the meaning of an event (either good or bad). This appraisal can be conscious or unconscious.
  + This then results in a series of responses, such as subjective experience, facial expression, cognitive processes, and physical changes.
* Affect is a more ‘general’ concept, referring to consciously accessible feelings
  + Affect is WITHIN emotions, sure, but also within other phenomena, suich as sensations, attitudes, moods, and even traits!
* Differences b/w emotion and affect include
  + Emotions are typically about a personally meaningful circumstance while Affect can be free-floating or have no objective focus.
  + Emotions are seen as brief and engage the multiple-systems described above while affect is more ‘long-lasting’
  + Emotions fit into categories like fear, anger, joy, etc. , in contrast, affect is either positive or negative.

Functions of Affect and Emotions

* Positive affect facilitates approach behavior and continued action
  + Thus, positive affect leads individuals to engage with environments and activities, which generally is good for the individual, the group, or BOTH!
    - This can explain the ‘positivity offset’ – the tendency to experience mild positive affect frequently, even in neutral contexts.
  + Leads to individuals engaging with the space around them, and there is a bias towards approaching and exploring novel objects/people/situations.
* Positive emotion also helps motivate people to approach/continue behavior.
  + Similar to sensory pleasure (another positive affective state)
  + Unrelated positive moods can motivate people to CONTINUE whatever line of thinking or action they have already begun!
* Note that some emotions are directly linked to ‘specific action tendencies’
  + Fear is linked to escape, anger linked to attack, disgust linked to expel, etc.
    - These specific action tendencies are supposed to be what makes an emotion ‘evolutionarily adaptive’, the actions that helped best in surviving life.
    - Also some of the feelings are linked to the biological correlates (ex. fear linked to autonomic nervous system to get ready to run)

Broaden-and-Build Theory of Positive Emotion

* Certain discrete positive emotions (inc. joy, interest, pride, love, etc.) while distinct, are similar in that they all share the ability to broaden people’s ‘momentary thought-action repertoires’ and ‘build’ their resources.
  + Contrast against ‘specific action tendency’ theory, used to describe the function of negative emotions. Essentially, the outcome of a psychological process that NARROWS a person’s thought-action repertoire by increasing saliency of specific actions (escape, attack, expel, etc.).
    - This is beneficial in emergency situations, a narrowed scope of allowable action improves quick/decisive decision making. This is great for negative emotion that requires immediate responses/attention.
* Positive emotion usually doesn’t require such immediate action, and it may even be counterproductive.
  + By engaging in the opposite, broadening the thought-action repertoires, we can widen what thoughts and actions are plausible to accomplish and come to mind.
  + E.g. Joy improves urge to play, push limits, and be creative, Contentment creates urge to savor current circumstances and integrate them into new views of self and world.
* This specific broadness is useful in different ways compared to the enforced narrow actions caused by negative emotions, by building resources.
  + Play builds physical resources, social bonds and attachments.
    - These resources are seen as ‘durable’ that outlast any transient emotional state that can lead to their acquisition.
    - Also, the ‘mind-state’ needed to engage in such useful and resource building behavior is possible due to the broadened array of possible actions engendered by the positive emotion!

Evidence for Broaden-and-Build Theory

Since this is a new theory, in this paper, the evidence is primarily indirect support of the model and no direct-tests of hypothesis.

Positive emotions broaden thought-action repertoires

* Isen et al., shows that positive affect leads to improved flexibility, creativity, ability to integrate, openness to information, and efficiency of thought.
  + Negative emotions have been known to narrow people’s attention. Anxiety, depression, etc. predict biases consistent with narrowed attention.
* Fredrickson & Branigan found that showing short film clips (positive, negative, neutral) lead to differing types of responses of ‘actions I would like to do’
  + Positive emotions identified more #’s of things than the neutral, which identified more # of things than in the negative! Shows clear hierarchy of broadened thought-action repertoires in a self-defined measure.

Positive emotions undo lingering negative emotions

* Positive emotions can in some cases be incompatible with negative emotions
  + Theorized that the broadness of thought counteracts the narrowing of thought, dismantling preparation for a specific (negative) action.
* Fredrickson & Levenson found in a time-pressured speech prep task, that generated anxiety and increases in physical blood pressure/other measures, that after viewing films of positive, neutral, or negative emotion, the two positive videos lead to faster cardiovascular recovery than the neutral, and the neutral was faster than the negative (sadness)!
  + In a neutral baseline situation, none of the four videos had any affect on physical state/blood pressure. The positive emotion worked strongest as a response.

Positive Emotions Fuel Psychological Resiliency

* Resilience is seen as ability to bounce back quickly from stressful experiences, bending but not breaking under strain.
  + Fredrickson and Tugade found that in the time-pressured speech task (same as earlier) resilience did not predict how much anxiety during the task or physical effects, but resilient people reported higher levels of pre-existing positive affect.
    - Due to this, the resilient people reported higher levels of happiness and interest in the activity
    - Also resilient people had faster recovery from the anxiety/stress.

Positive Emotions Build Psychological Resiliency and Trigger Upward Spirals Toward Improved Emotional Well-Being

* Positive emotion can build resiliency
  + Feeling positive emotions predicts greater psychological health 12 months postbereavement.
  + Those feeling positive emotions can find meaning in ordinary events and within the adversity itself.
* Creates an upwards spiral where positive emotions and broad thinking work on each-other reciprocally.
  + Upward spiral exists when showing that positive emotions can be linked with broad-minded coping with problems (a form of resilience)

Conclusion

* Positive emotions, though fleeting, can have concrete and long-lasting consequences/effects.
* Multiple discrete positive emotions are needed for optimal functioning.
  + Broader thought-action repertoires
  + Undoing negative emotions/thoughts
  + Improving psychological resilience
  + Upwards spiral towards greater emotional well-being.

Cappellen 2018: Positive Affective Processes Underlie Positive Health Behavior Change

* Positive healthy behaviors can help heal many chronic illnesses
  + Most people are NOT good at doing these things regularly
* Theory of ‘Upward spiral theory of lifestyle change’ indicates how positive affect can lead to long-term adherence to good health behaviors.
* Nonconscious motives linked to central mechanisms of behavior maintence
* Positive affect felt during good health behavior improves salience for cues leading to those behaviors
  + This loops and leads attention and everyday choices to repeat those good health behaviors.

Significance of Positive Affect During Health Behaviors

* In general, when people associate enjoyment w/ engaging in a health behavior, they are more likely to intend to, and actually engage in, that behavior.
  + Including physical activity, eating fruits/veggies, etc.
* The perception that a behavior is seen as enjoyable (positive affective attitude) has an even STRONGER effect than the perception that the behavior is seen as beneficial (positive cognitive attitude)
  + Found medium/large effect size between positive affective judgements about physical activity, and overall physical activity, exceeding effect sizes for other predictors (self-efficacy, environment, etc.) in 82 study meta-analysis (Rhodes, Fiala, & Conner, 2009)
  + Affect is also not manipulated by persuasive information, or self-regulation tasks; personally experienced pleasure is the KEY
    - When it’s experienced is also important, having it DURING physical activity predicts future physical activity, and having it after physical activity does NOT.
  + Same with meditation, those that have positive affective response are over 4x more likely to continue 15 months later, compared to those that do not have the responses, in fact it was the only predictor that was statistically significant!

Upward Spiral Theory of Lifestyle Change

* Association b/w pleasantness and cues predictive of it, endow those cues with incentive salience, improving their ability to capture attention in the future.
  + When these cues are seen later, the higher salience triggers wanting and seeking behavior (through dopamine!)
  + In a word task w/ positive, negative, or neutrally affective words, positive words were perceived as larger font than neutral or negative, showing how positive affect directly improves perceptibility and salience.
* Broaden-and-Build theory of emotion is also part of this framework, showing how positive affect can facilitate long-term adherence to good health behaviors.
  + When positive affect is felt during a good health behavior, this creates nonconscious motivation for that activity, that grow stronger as personal resources (biological, cognitive, social, etc.) continues to build.
  + Just as certain risk factors (obesity, pessimism, loneliness, etc.) deter health, some vantage resources (gained through positive behavior, cardiac health, broad-minded coping, social integration) support health.
    - They do so by interacting (moderating) the positive AFFECT felt during good health behaviors.
    - This positive affect then in turn strengthens the nonconscious motives, leading to building even MORE of the vantage resources!

Evidence for Upward Spiral’s Inner Loop: Positive Affect and Nonconscious Motive

* Many behavior choices are NOT due to conscious deliberations, but nonconscious motives instead.
* Positive affect is shown to be influential for nonconscious motives.
  + Handgrip force is greatest w/ positive affect, for example.
  + Generally, priming goal behaviors w/ positive affect increases desire to pursue the goals and motivation to complete them, without the participants being conscious of it!
  + Even outwardly inducing positive affect can activate physical goals.
    - Priming w/ positive affect lead to greater variety of physical activities tried and more openness to trying new physical activities.
  + Positive spontaneous thoughts are moderately correlated with incentive salience, as is conscious perception of one’s own thoughts

Evidence for the Upward Spiral Theory's Outer Loop: Modifiable Vantage Resources for Health Decision-Making

* Some limiting factors exist that can reduce the amount of pleasant affect from good health behaviors, e.g. lack of social support, physical limitations, unaccommodating environments, lack of time, being tired or stressed, or low socioeconomic status, can all affect how positive affect impacts health behaviors.
* Adding vantage resources, regardless of origin, further augments the experience of positive affect.
  + Cardiac vagal tone, a physical vantage resource, is a component of parasympathetic nervous system, and is an index of autonomic and emotional flexibility, and physical health.
    - This can be improved with health behaviors, but also moderates the emotional reactions to health behaviors!
    - Vagal tone was shown to improve after a six week mediation workshop, that also amplified the affect received from meditation!
  + Oxytocin system is similar, as greater exogenous oxytocin increases positive affective reaction, and also can be built/grown over time.
  + Flourishing mental health is a psychological vantage resource, it’s the lack of mental illness and presence of positive functioning.
    - This was found to increase positive affect during a range of behaviors contributing to well-being.
    - These reactions in turn forecasted increases in flourishing months later!
  + Prioritizing positivity is a vantage resource, by structuring life to include pleasant experiences.
    - People who score higher on self-reported positivity prioritization report greater positive affect in response to good health behaviors.
    - Positive prioritization can also lead to greater positive affect over time!

Upward Spiral Theory compared to other theories of health behavior change

* Complements other theories of health behavior change
  + Positive affect during good health behaviors
  + Nonconscious motives on incentive salience
  + Modifiable vantage resources that support increasing and nonconscious motives for positive good health behavior change.
* Other theories center on behavioral initiations.
  + Upward spiral focuses on long-term behavioral maintenance that defines lifestyle changes.
* State of Change theory (Transtheoretical model TTM) proposes people can be at different stages of readiness to adopt good health behaviors
  + Upward spiral theory concerns the later stages of change only, action/maintenance/termination, once a new behavior is enacted w/ concurrent positive affect, the implicit processes that change lifestyle ensue.
* Goal-setting theory: Holds that hard and specific goals for health change perform better than those with easy or abstract goals (as long as goals are not conflicting and truly reachable).
  + Upward spiral specifies an additional condition needed to render goals likely to be sustained in the long-term. Individuals that work towards hard and specific goals that evoke positive emotions will be more likely to sustain behavior.
* In general, these theories rely on behavioral intentions, which don’t always overlap with their actual behavioral engagement
  + Moreover, these are conscious intentions.
  + Thus, self-efficacy, the belief that one can do something, is a key component of upward spiral theory as well!
    - Central to individual ability to identify/enact good health behaviors that spark positive affect.
  + Theory of planned behavior unpacks conscious intent as a function of attitude towards behavior, norms, and behavioral control.
    - Day to day behaviors often defy willpower, and are instead shaped by implicit emotions and nonconscious motives.
  + The upward spiral theory shows that positive affect, even if nonconscious, as the source of motivation towards good health behavior, and the accrual of vantage resources (resilience, flexibility, passion, etc.) that can impact behavioral control.
* Affective processes: Clearly affective processes, not just cognitive, affect behavior, over and above cognitive attitudes!
  + Additionally, it is possible to change people’s affective attitudes towards behavior, using evaluative conditioning.
  + Thus, affective attitudes towards any behavior can indeed subsequently motivate further behavior.

Upward spiral theory goes beyond just affective attitudes and evaluative conditioning, by understanding the scientific mechanisms (nonconscious processes and vantage resources) through which these affective constructs operate! Upward spirals are essentially evaluative condition as it unfolds in real life, not just an artificial lab setting.

Future Directions?

* Pursue positivity with normal standards in mind
* Prioritize positivity at various stages of goal setting
  + Choosing more enjoyable good health behaviors for example.
  + Scheduling pleasant events in daily life.
  + When engaging with activities, nurture positive affective experiences as they occur by leveraging mindfulness.
  + Evaluate the activity afterwards and see if there is something you might find more fun!
* Limits are very clear
  + It applies more to increasing positive health behaviors than reducing negative health behaviors (smoking, excessing drinking, etc.)
  + Really difficult to directly test it by looking at people’s actual lifestyle choices.

Dickens 2017: Using Gratitude to Promote Positive Change: A Series of Meta-Analyses Investigating the Effectiveness of Gratitude Interventions

* Meta-analysis of gratitude interventions, that have been proposed as beneficial practices for improving positive outcomes.
  + 38 studies, 282 effect sizes, with 56 separate meta-analyses
    - gratitude vs neutral mindset @ post-intervention and delayed follow up
    - gratitude vs negative mindset at post and follow-up.
    - Gratitude vs positive mindset at post and follow-up
* Results show that gratitude can lead to improvements for many outcomes, including happiness, but don’t influence others.
  + May be overemphasized in the literature.

One common practice people intervene on themselves with is regular gratefulness interventions.

* Counting blessings in a journal
* Writing a thank you-letter
* Making a ‘gratitude visit’

These are desirable because they can be done on your own and cheaply, seen as an easy way to make large life improvements. However, there have been some mixed findings on the success and actual impact of the research itself.

Previous Reviews

* Sin and Lyubomirsky found in previous meta-analysis: that positive psych interventions worked well overall, but not gratitude specifically
* Boiler et al., found that positive intervention/expressive therapies as a whole were useful, but gain not specifically gratitude.
* Davis et al., (2016) was more focused looking at gratitude interventions and outcomes for gratitude, anxiety, and psychological well-being
  + Looking at measurement-only control and alternative-activity conditions, but alternative activities were not split-up by valence.

Current work

* Examines comparing gratitude against neutral and negative comparators
  + Does gratitude improve the individual?
  + How should we interpret these effects?
  + Is there only post-measurement or a delayed follow-up effect?
* Studies were selected when they had random or quasi-random assignment, with a gratefulness intervention and a nongratitude comparison condition.
  + At least 1 week long, anything that was one time or shorter was excluded.
  + Anything with daily gratitude was left out, considered temporary and time-sensitive in the outcomes.
  + Only a single time of intervention or training, multiple interventions was not allowed (especially switching between several)
  + Excluded any studies with gratefulness surrounding a specific or particular negative event.
* All outcome variables related to self-improvement or positive outcomes due to gratitude were included.
* Generally, gratitude comparisons fell into three types based on the comparison group:
  + Neutral conditions
  + Negative intervention conditions
  + Positive intervention conditions

Characteristic Summaries: Out of 71 studies

* Published from 2003-2016
  + 38 studies had significant effect sizes
  + 5,223 participants total
  + Samples ranged from 35-458
  + 9 MA thesis/Dr dissertations included with 29 other studies.
  + 3 tested children (elementary to high-school)
  + 16 studied college-age
  + 19 used wider range of ages
  + 71% average female, ranging from 24-100%
  + 26 from US/Canada, 5 from Asia, 4 from EU, 2 from Australia, 1 is both US/Asia
  + 17 studies were 1-2 weeks, 11 were 3-5 weeks, 10 were 6-12 weeks
* Common Moderators
  + Age, generally as children up to 17, college, and mostly adults
  + Gender
  + Neutral comparison conditions (no treatment vs active comparison)
  + Duration of follow-up period (1 week to 6 months)

Results

* Comparing gratitude to neutral
  + Postintervention: Greater well-being, happiness, life satisfaction, grateful moods, grateful disposition, positive attitude, less depression, more optimism, greater quality of relationships.
  + Delayed follow-up: Greater well-being, happiness, less depression.
    - Negligible differences in life satisfaction, physical health, optimism, grateful mood, disposition, and relationship quality
* Comparing gratitude to negative
  + Postintervention: Greater life satisfaction, Positive affect, less negative affect and depression, optimism, grateful mood, and less stress.
    - Nonsignificant differences in physical health and prosocial behavior
  + Delayed follow-up: Grateful mood, no other significant differences.
* Gratitude vs positive interventions:
  + Postintervention: Greater well-being and that’s it!
    - No differences in happiness, life satisfaction, PA, NA, grateful mood, physical health, sleep, depression, optimism, stress, relationships, or self-esteem!
  + Delayed follow-up: Small improvement in well-being, smaller than postintervention, THAT’S IT!
* Overall effects:
  + Some effects were only significant when the comparison group was negative, smaller when it’s neutral, and nonexistent when positive
  + Stress compared against negative group, for example, was the largest we’ve ever seen in meta-analysis, but small when neutral, and nonexistent when positive!
  + Physical health effect was not significant in any of the 3 comparisons
    - Same with sleep, prosocial behavior, exercise, and self-esteem.
    - Could be that self-esteem is influenced by gratitude, but no more so than other positive interventions.
  + It is much too easy to state benefits of gratitude when compared against a negative intervention!
* Moderators:
  + Age was significant, as adults showed the largest effect of gratitude interventions, college age had some effect, and no effect for children
    - For life satisfaction and for grateful mood only
  + Gender did not seem to have an effect on results
  + NO effect of ‘type’ of neutral comparison group (no-treatment vs sham-treatment)
  + Duration of follow-up time had no effect on results.

Conclusions:

Gratitude is generally useful, but has been looked at too often compared against negative interventions. Most effects were small to medium by Cohen’s D. Overall, gratitude seems useful for well-being, happiness, life satisfaction, grateful mood, grateful disposition, and positive affect. It also decreases depression! However, no significant improvements in physical health, sleep, exercise, prosocial behavior, and self-esteem. Gratitude doesn’t seem particularly more useful compared to other positive intervention conditions!

* Some people may be better suited for other positive interventions, such as on kindness and optimism
  + Tailoring and figuring out what people respond well to is vital here
* Individual differences likely exist, but have not been measured.
* Unlikely for there to be a ‘one size fits all’ method for gratitude interventions, or positive interventions more generally.

Emmons 2003: Counting Blessings Versus Burdens: An Experimental Investigation of Gratitude and Subjective Well-Being in Daily Life

* The effect of a grateful outlook on psychological and physiological well-being
* Participants assigned to one of 3 conditions (hassles, gratitude, or neutral life/social comparisons)
  + Kept weekly (1st study) or daily (2nd study) records of moods, coping behaviors, health behaviors, physique, and overall life appraisal.
* In a third study, people w/ neuromuscular disease were assigned to either gratitude condition, or a control condition.
* Across all groups, gratitude-outlook groups had better positive outcomes, especially on positive affect.

Meaning of Gratitude:

* Defined as other-directed, as well as to nature or nonhuman sources
* As an emotion, it is an attribution-dependent state, resulting from a 2 step process.
  + (A): Recognizing that one has obtained a positive outcome
  + (B): Recognizing that there is an external source for this positive outcome
    - Is this necessary? Could one be grateful to oneself?

Association between Gratitude, Happiness, and Well-Being:

* Gratitude is a moderately pleasant and activating emotion
  + Thus, linked with other positive emotions including contentment, happiness, pride, and hope.
* McCullough finds that gratitude is related to, but distinct from, trait measures of positive affect, vitality, optimism, envy, depression, or anxiety.
  + It is unique from happiness
* Perhaps gratefulness is an adaptive response which shapes positive interpretation of everyday experiences.
  + Noticing, savoring, and appreciating the good things in life is crucial to well-being
  + Adaptation to satisfaction can be counteracted by being constantly awareness of how fortunate one’s condition is, and how bad it could be otherwise (or was before!)
* Still, need more additional research, the purpose of this study is to unambiguously determine whether gratitude exerts a causal effect on happiness and well-being in an experimental study with gratitude manipulated and positive outcomes observed.

Study 1

* N = 201, undergraduates, 75%~ women.
* 10 weekly reports, with 3 different experimental conditions
  + Gratitude condition: thinking of 5 things per week that were grateful/thankful for in the past week
  + Hassles condition: thinking of 5 things per week that annoyed you.
  + Events condition: thinking of 5 things in the last week that happened and impacted you.
* Rated subjective well-being
  + Affective states (sad, irritable, tired, upset, attentive, proud, etc.)
  + Physical symptoms
  + Reactions to aid (how well a person could appreciate or receive help)
  + Global appraisal of subjective well-being

Results

* Grateful, Thankfulness, and appreciative, were all highly correlated (Cronbahcs alpha of .86 - .92)
* Measures of positive and negative affect accounted for some of the variance of the subjective well-being
* The gratitude condition was significantly different from the hassles, but the neutral condition had no significant difference compared to both.
* Main effect of rating life favorably on global appraisal of SWB and health measures.
  + Significantly more time exercising in the gratitude condition (1.5 hrs extra)
* More open/positive evaluations of help-giving, correlated to gratitude
  + Gratitude condition did not appear to influence global positive/negative affect, however, and only 1 report was finished per week!

Study 2

* N=166, mostly women
* 16 daily experience rating forms, with first 3 ignored as ‘practice’
  + Ask for rating and appraisal of day as a whole
* Wording for questions was very similar as in Study 1
  + Same gratitude and hassles, but with different 3rd condition
  + Downward social comparison “Think about ways in which you are better off than others”
* Primarily same study, done daily for 13 days instead.
  + Additionally measured prosocial behaviors in aggregate (help people Y/N)

Results

* Relative to social comparison condition, gratitude and hassles had nearly equal and opposite effects on daily levels of gratitude.
  + The daily tasks of gratefulness were more potent in facilitating gratitude than that done on an infrequent weekly basis.
* There was a mediated effect of the intervention on positive affect, impacting the unique association through gratitude as a measured state.
* There were no differences in physical symptoms or health behaviors.
* More prosocial behaviors were reported in the gratitude condition.

Study 3

* N = 65, 2/3rds women, with Neuromuscular Diseases, mean age 49 years.
* 21 daily experience forms, with first 3 thrown out for analysis, with forms that indicate them to rate how their day went.
* Two conditions, Gratitude condition, and control condition.
  + Both measured affect, SWB, and global appraisals each day, but gratitude condition ALSO had a gratefulness reflection.
* Measured daily affect, SWB, Health behaviors, activities of daily living, and observer reports of SWB (asked of spouses/partners)

Results

* Gratitude fostered positive daily affect, and reduced negative daily affect
  + Gratitude was a complete mediator of the intervention’s effect on positive affect.
* Subjective well-being appraisals improved in gratitude condition
  + Observers also rated well-being higher in their partners.
* Those in gratitude condition also had more hours of sleep per night, but no other differences in physical health symptoms.

Conclusions

* Not all the results replicated in all 3 studies, but generally gratitude leads to improvements in SWB, prosocial behavior, and reduced negative affect.
* Social comparison group wasn’t as different from gratefulness as expected
  + Slightly less measured gratefulness, but similar results otherwise.
* Possible that the result is due to ‘overall positive thinking’, but since it is heavily mediated by specific feelings of gratitude, this is unlikely.
* This is considered more evidence towards ‘Broaden and Build’ Theory

Pietrowsky 2012: Effects of Positive Psychology Interventions in Depressive Patients—A Randomized Control Study

* Study wherein depressed patients were given positive psychology interventions for three weeks
* N = 17, for a short period of time, using PP alone alleviates depressive symptoms and increases well-being

Positive Psychology is focused on ‘building what’s strong’ instead of ‘fixing what’s wrong’. The main goal is happiness, which is ‘subjective well being’. Which is mainly comprised of the ratio of positive and negative affect.

This present study has PP interventions that are used, such as ‘best positive self’ – intent to think positively about future goals and that they can be reached, and ‘three good things’ or ‘counting one’s blessings’ as an exercise that can improve gratefulness.

Present Study

* Participants were Germans at an outpatient clinic for depression. Half received control and half were given intervention.
* 3 Sessions, one with pretesting and the first task, the second a week later, and the third two weeks after the second.
* PP Treatment
  + Given “Best Positive Self” task, asked to think about best possible self and write down thoughts and feelings about that.
    - ‘Imagine the future where whatever happened was as good as possible’
    - Then describe the best possible way how things should happen in life to guide them to make decisions in the present
  + 30 minutes tasks, and then 30 min next day to think about the BPS and reflect their thoughts on paper
  + In 2nd and 3rd week, given 3GT task. Asking them to take 10 minutes of time each evening for 2 weeks, and write down 3 things that went well that day and why.
* Control group
  + Writing about the future of mankind in the first week
  + 2nd and 3rd week were asked to think about future of mankind for 30 min and write their thoughts, assuming that things have gone well and will go well for mankind.
  + Asked to think about early memories, and then write about them for 10 minutes each evening for 2 weeks, and reflect.
* Measures
  + Beck depressions inventory
  + Satisfaction with Life Scales (how satisfied with life)
  + Positive and Negative Affect Schedule (for measuring affect)
  + Life Orientation Test Revised (optimism/pessimism)
  + Resilience Scale

Results

* Depression in both groups were the same, and declined more in the PP than the CG over time
* No effect on satisfaction with life
* Positive affect was higher in PP than CG
  + Also increased over time
* Negative affect decreased over time
* Optimism was not affected, Pessimism was significantly higher in CG than PP by the end of the study
* Resilience was higher in PP than CG, and increased further over time

Conclusion

* PP was superior to control, especially in depressed patients.
  + Focus on gratefulness seemed specifically to improve resilience.

Sheldon 2006: How to increase and sustain positive emotion: The effects of expressing gratitude and visualizing best possible selves

* 4 week study (N=67) on effects of gratitude and visualizing best possible selves, and which motivational predictors or positive emotions come out.
* Single exercise at session 1, and then continued performing it for 2 weeks until session 2, and again for 2 more weeks until session 3 (1 month total)
  + Continuing effortful performance of these exercises seem necessary to maintain changes
* Initial self-concordant motivation predicted actual performance, and moderated improved mood

Generally, people want to be happier. How can we improve mood? Perhaps trying to improve fundamentals, such as increasing positive emotions and decreasing negative ones?

There is some person-strategy fit required, but general evidence indicates that working on personal goals, activities that fit the person’s interest, and when performed neither too frequently or too rarely. Sustainable happiness model by Lyubomirsky, Sheldon, and Schkade 2005a has characterized this process.

* Requires effortful and habitual commitment
* Needs to achieve the personal goals set to boost well-being
* Needs to ‘fit’, which can be measured with self-concordant motivation.
  + True value and interests, not those that have been external and internal pressures that have not been assimilated into the self.
  + Both measures fit, and predicts total future effort into the intervention.
* We tried gratitude, best possible selves, and a control activity ‘focusing on daily details’.

Gratitude

* Likely to elevate positive affect for several reasons
  + Improves savoring of good life experiences/situations, allowing for maximum possible extraction of satisfaction and enjoyment from those circumstances
  + ‘Directly counters the effect of hedonic adaptation’ by preventing people from taking good things in life for granted.
* Positive reinterpretation of negative life experiences, thus it is adaptive coping
* Regular practicing of gratefulness enhances positive affect and other measures of SWB
* Emmons and McCullough (2003) had either count your blessings or control activity for 10 weeks weekly, or daily for 2-3 weeks, and controls had focus on hassles or normal life events instead.
  + Gratitude group had higher positive affect and greater physical wellbeing!
* Lyubomirsky, Tkach, et al. (2005c) found gratitude expressed once a week (but not 3x) had short-term increases in well-being.

Visualizing Best Possible Selves

* Chosen b/c disclosive writing has numerous benefits for SWB, health, and emotional adjustment.
* BPS is seen as idiographic representation of goals, encompassing futures that people imagine for themselves (cherished ‘self wishes’)
  + Allows for illumination and understanding of oneself
* Can reduce goal conflict and improve awareness/clarity to priorities, emotions, and values.

Present Study

* 4 week longitudinal study, performing gratitude or BPS should boost positive affect relative to neutral control.
  + Gratitude and BPS participants were expected to be more motivated to do the exercises, according to self-concordant motivation
  + Does SCM predict whether participants continue to perform the exercise or not?
  + Does continuing the exercise (vs not) determine whether the initial mood boost can be sustained?
  + Does SCM moderate the effect of performing the exercise on sustained positive emotion? A.k.a. ‘Doing an exercise should be most beneficial if it fits within a person’s interests, traits, and values’
* N=67, 17 men, 50 women, mostly white, 10 black/hispanic/Asian
* Assigned to 1 of three exercises
  + Gratitude Exercise: Cultivate a sense of gratitude by thinking about things that deserve gratefulness, what sacrifices or costs others have made for you, things that are advantages/opportunities, etc. and to be thankful for them
  + Best Possible Selves: Asked to think about BPS, imagining working hard and achieving all the goals set, and then what could happen now to achieve those goals. Writing about ‘ideal life in future’ and outline it with as much detail as possible.
  + Life details: Neutral control condition where people ask to write done some details about various ordinary things that happened in their life. Writing about the ‘typical day’ and the kinds of things that happen, in as much detail as possible.
* Measures
  + Positive and Negative Affect
  + Self Concordant Motivation (Deci and Ryan Motivational internalization continuum)
  + Exercise Performance (did people keep doing it 2 weeks after the lab session?)

Results

* Mean affect change existed for those in gratitude and BPS conditions, increased PA, but were otherwise similar to each other.
* Negative affect declined equally in both gratitude and BPS, and less so in control, but all three still decreased negative mood!
* Gratitude and BPS exercises had greater SCM than the control participants, BPS and control condition were even more significantly different, but not gratitude and control, thus BPS had larger effect on SCM.
* Initial SCM was strongly associated with exercise performance in gratitude and BPS condition, not the control condition.
* Exercise performance was significant, continuing to perform the BPS exercise had a stronger effect on increases in PA than the other 2 exercises, gratitude was not significant interaction with performance.
  + Negative affect was significant, the interaction between BPS and exercise performance was negative but not significant. BPS exercise may have stronger sustained dampening effect on negative mood than other 2 exercises.
* SCM was not associated with changes in positive affect a priori
  + SCM was not associated with changes in negative affect either

Discussion

* All 3 exercises reduced negative affect, but only the BPS exercise produced a significant increase in immediate positive affect.
  + Gratitude exercise was midway between control and BPS in boosting PA.
* BPS exercise had largest amount of SCM, and influenced people to keep doing the exercises!
* Long term emotional benefits require sustained effort, and are easier if the ‘fit’ of the exercise with the individual goals are matched.
  + However, no lasting effect of condition assignment alone on PA and NA, only when exercise performance was taken into account!
* Why was BPS greater? It is perhaps because greater SCM for BPS, if SCM was greater for gratitude, perhaps there would be a greater effect
  + Thinking about ideal futures is inherently self-relevant, and in being so, motivating.
  + Perhaps thinking about the future good things is less challenging than reflecting on present and past things worth being grateful for.

Watkins 2014: Grateful recounting enhances subjective well-being: The Importance of grateful processing

* RCT on a gratitude ‘3 blessings’ intervention on improving SWB.
  + Strength is using adequate control conditions, and given placebo, pride 3 blessings, or gratitude 3 blessings
* Gratitude significantly outperformed the competition regarding SWB, which continued to increase even AFTER the treatment phase.
  + Theory is that these exercises train cognitive biases that are healthy for improved SWB

Gratitude is well researched, but historically many experiments lack proper control conditions. Some studies don’t have significant effects, and one of the controls has historically even been a ‘negative mindset’ instead of a neutral one. Which is superior to a no-treatment control, the placebo effect could be significant!

Study

* N = 129, roughly 1/3rd per condition, 3/4th female, psych undergraduates
  + Required to complete outcome assessment and at least 4/7th of the daily treatments
* Measures:
  + SWB: Satisfaction with Life Scale, AND positive/negative affect scales of PANAS scale. All 3 measures aggregated into single measure of SWB
  + Depression: CES-D test
  + Gratitude Resentment and Appreciation Test (GRAT-S) used to measure trait gratitude.
    - As well as ‘novel’ positive memory accessibility task.
  + Directly measured motivation/interest of subjects in improving happiness
* All participants were told that the intervention was ‘designed to improve your happiness’
  + Placebo: Told that focused memory retrieval is good for happiness, describing a personal semantic memory each evening (e.g. typical route to campus)
  + Pride: List the three things that went well during the last 2 days, and write about how this experience made you feel better than most/better than average (positive recall without gratefulness)
  + Gratitude: Same as pride, but write about how the experience or event made you feel ‘grateful’

Results

* 3x3 (time of assessment x treatment group) analysis of covariance
  + Significant treatment condition effect on SWB
  + Gratitude had better outcomes than pride or placebo.
* SWB of those in gratitude condition continued to improve AFTER treatment.
  + Including at the 5-week follow-up!
* Depression was significantly lower in gratitude treatment at the 5 week follow-up
* Positive memory recall was significantly greater for gratitude than placebo or pride.
* Men gained significantly more from the gratitude treatment than women, but no effect in the other comparison treatment condition.
* The gratitude treatment was more effective in enhancing SWB for those low than those high in trait gratitude (ceiling effect?)
* Continued practice of gratefulness did NOT seem to contribute to improved outcome

Discussion

* Significant improvements in SWB! Additionally, the placebo had some effect, and our control condition did not produce DECREMENTS in well-being.
  + The continued increase after treatment phase was important to see!
* Gratitude is much lower in men than women as a trait, so men can indeed gain more from gratitude than women (since low trait gratitude means more room for improvement)
* Gratitude does indeed improve the ‘good in memory’, as it is easier to recall more positive memories.
* Theory that the long-lasting effect is due to ‘training’ of cognitive biases conducive to high SWB. Greater awareness of benefits in life can train individuals to ‘look’ and be ‘primed’ for positive events and gain benefits.
* Still more research should be done on what ‘types’ of gratefulness (large benefits, specific examples, etc.) works best for people.

2001 Emmons & Shelton: Gratitude and the Science of Positive Psychology

From: Snyder and Lopez Handbook of Positive Psychology

* Single chapter overview on the concepts and ideas supporting gratitude.
* Gratitude is difficult to empirically test!
  + Lots of speculation at this point and time.

Gratitude as an Emotional Response to Life

* As a psychological state a “felt sense of wonder, thankfulness, and appreciation for life, expressed towards others, nature, or nonhuman sources’
  + Gratitude is one of the most common emotions that religions seek to provoke and sustain, at the core of spiritual and religious experience!
* According to Maslow, Self-Actualizers have the ‘capacity to appreciate again and again, freshly and naively, the basic goods of life with awe, pleasure, wonder, and even ecstasy, no matter how stale these things might be to others’
* Fritz Heider believes 2 things are needed for gratitude
  + Interpersonal context (preclude from being directed towards oneself)
    - Not sure that I personally agree with this?
  + Second, is recipients ‘theory of mind’ from which they infer another’s well-meaning intention
  + Essentially, a person feeling grateful might be more inclined to feel loved and cared for by others!

Gratitude in Emotion Theory

* Part of two sets of emotions, outcome dependent and attribution dependent.
  + General affective reactions of happy/unhappy are outcome dependent
  + Secondary emotional reactions (pride, anger, gratitude) follow specific patterns of CAUSAL attribution!
* Ortony et al., have ‘goal based model of appraisal’, wherein the consequences of events are appraised for relevance to one’s ongoing goal pursuits.
  + Here, gratitude is compound of admiration and joy, admiration for others and joy at the desirability of the outcome.
  + Degree of judged praisworthiness, deviation of action from expectations, and desirability of event, all affect intensity of felt gratitude.
* Lazarus and Lazarus consider gratitude an ‘empathic emotion’.
  + Because it depends on the capacity to empathize with others.

Gratitude as Virtue: Insights from Moral Philosophy

* Gratitude is generally seen as a good thing! A greater attainment towards completeness and wholeness, needed to live well.
* Gratitude is expressed during thankfulness that is sustained across situations and time.
  + An attitude towards the giver, and an attitude towards the gift!
  + Considered a response to perceived, intentional benevolence.
* Ingratitude is seen as a vice!
  + Seen as a characterological defect
  + Personality structure ‘crippled’ by narcissism, including self-importance, arrogance, vanity, etc.
  + Likewise, narcissistic people are seen as incapable of experiencing and expressing sincere gratitude.

Interpersonal Consequences of Gratitude:

* Gratitude typically results from and stimulates moral behavior (motivated out of concern for others).
  + Thus, gratitude can be seen as moral affect!
* McCullough posits that gratitude has 3 moral functions
  + Moral barometer: Readout showing how change in a relationship is occurring
  + Moral motive: Prompts grateful people to behave prosocially
  + Moral reinforcer: Increases the likelihood of future benevolent actions.
* Gratitude is theorized by Oatley and Jenkins that ‘gratitude is the prototype of exchanges that are universal in human society, perhaps the basis for modern economic relations’

Cultivating Gratitude

* Can it be cultivated? YES!
* Miller offers 4 step program
  + Identify non grateful thoughts
  + Formulate gratitude-supporting thoughts
  + Substitute these thoughts
  + Translate inner feeling into outward action
* Shelton as well!
  + Gratitude functions as a ‘buffer’ that allays embarrassment, shame, or other negative thoughts
* Emmons & Crumpler show that gratitude in students had greater SWB and more optimism, compared to students focusing on hassles/stressors. This includes better physical symptomatology, more exercise and better sleep.

Gratitude in All Circumstances?

* What about when it’s hard to feel grateful?
  + Discerning blessings in the face of tragedy is a great strength
  + A degree of deprivation/contrast helps, as in spring after winter, meals after fasts, and sex after abstinence.
* People feeling an overwhelming sense of gratitude for what they didn’t lose in a disaster were happier than those otherwise.
* This sequence of success after failure is seen as ‘redemptive’ and a transformation from an unpleasant circumstance into a positive outcome.
  + Alcoholism followed by sobriety
  + Job failure followed by promotion

Sirosis & Wood 2017: Gratitude Uniquely Predicts Lower Depression in Chronic Illness Populations: A Longitudinal Study of Inflammatory Bowel Disease and Arthritis

* Chronic illness is a good category to analyze because there is regular symptom fluctuations, with life-long and far reaching effects.
* Gratitude specifically in medical populations (e.g. not those a-priori being analyzed for mental health reasons) is understudied. Longitudinal study instead of cross-sectional, which is more common.
* Arthritis N = 423 and Inflammatory Bowel Disease (IBD) N = 427, did online surveys, around 150 of each completed the 6 month follow-up.
  + Depression, gratitude, illness, perception of stress, social support, and disease variables were assessed at beginning and at follow-up.
* A significant amount of individuals in both chronic illness groups suffered from significant depression.
  + Gratitude was a significant and unique predictor of lower depression, after controlling for covariates.

Study

* Measures
  + Gratitude: Gratitude Questionnaire-6
  + Depression: 10-item Center for Epidemiological Studies Depression Scale
  + Self-Rated Health: Medical Outcomes Survey 36 Item short form (SF-36)
  + Pain: Arthritis Impact Measurement Scales OR 10-item Bowel Symptoms subscale
  + Perception of Stress: Perceived Stress Scale
  + Social Support: Duke-UNC Functional Social Support Questionnaire
  + Illness cognitions (thoughts on illness): Illness Cognition Questionnaire
  + Thriving: 3-item thriving scale (Carver 1998)
* Results
  + 20-30% were diagnosed with mental health issues in both groups
  + Gratitude was associated with less stress, less helplessness, more positive associations with self-rated health, benefit finding, and illness acceptance.
    - Correlated with thriving in each sample!
    - Modestly associated with pain at t1 for IBD, but not for either time in the arthritis sample
  + Depression was significantly associated with demographic, disease, and health related covariates.
  + Gratitude was significantly associated with lower depression at follow-up for both samples, and explained significant additional variance.

Discussion

* Provides additional evidence for strength of gratefulness association with SWB in a clinical group, measured longitudinally (with good N as well ~ 300 ish)
* Managing mental health can have positive feedback effect on physical correlates of illness.

Lomas 2014: Gratitude Interventions – A Review and Future Agenda

From: The Wiley Blackwell Handbook of Positive Psychological Interventions

What is Gratitude and How Is It Measured?

* ‘Feeling that occurs in exchange based relationships when one person acknowledges receiving a valuable benefit from another.’
* Stems from 2 stage information processing
  + Affirmation of good things in one’s life
  + Recognition that source of goodness lie at least partly outside the self
* General popular measures are
  + 6-item Gratitude Questionnaire (GQ-6) by McCullough
    - Measures dispositional gratitude
  + 44-item Gratitude, Resentment, and Appreciation Test (GRAT) by Watkins
    - 3 dimensions of trait gratitude, resentment, simple appreciation, and social appreciation.
    - Answer questions on these issues by responding to 5 point likert scales
  + Both conceptualize gratitude as a trait/disposition (a general tendency to recognize and emotionally respond with thankfulness)
* When measuring as a trait, it’s examined as an ‘affective trait’ or the innate tendency towards grateful experience.
  + When measuring as a STATE, it is experienced after a positive event has occurred and usually promotes further prosocial behavior reciprocally. State gratitude is measured through interventions where individuals engage in exercises and then reflect.
  + State and Trait gratefulness are correlated however.

Findings from the Science of Gratitude

* Dispositional gratitude unique increases SWB
  + Beyond and above general positive affect
* High dispositional gratitude leads to more positive social interactions
  + This makes people better adjusted and accepted
  + Which leads to improved SWB!
* Also associated with prosocial traits
  + Empathy, forgiveness, willingness to help others
* Better/Longer sleep and improved sleep quality, and more time spent exercising!

Interventions to Increase Gratitude in Adults

* Counting Blessings
  + Regularly keeping gratitude journals and reflecting on positive things that happened.
    - Leads to better physical health, more optimism, and greater SWB
    - Higher alertness, enthusiasm, determination, attentiveness, and energy
    - Spouses of individuals going through gratitude can confirm these results.
  + Individuals recounting gratitude report higher instances of prosocial behavior.
  + Greater impact than both hassles and ‘no-treatment’ control.
* 3 Good Things
  + Instructed to write down 3 good things that happened and attribute causes, per week.
  + Lead to an increase in happiness and decrease in depression (3 and 6 months later)
* Grateful Self-Reflection
  + ‘Self-improvement project’ wherein recorded 3 good things per week, for 8 weeks, and then reflected using ‘naikan mediation inspired questions’
    - Focuses not on the self, but also others. E.g. “What did I receive?”, “What did I give?”, “What more could I do?”
    - Lead individuals to think both more gratefully, but also prosocially.
  + Greater gratefulness lead to more gratitude, less burnout, and had valued meaning in life more.
  + Another study w/ foreign born Asian American and Anglo Americans had practicing optimism, expressing gratitude, and listing experiences (control).
    - Optimism = best possible selves
    - Gratitude = letters of appreciation to those whom they were grateful
  + Asian Americans had most benefit from gratitude (not optimism), but Anglo Americans had great benefits from both!
* The “Gratitude Visit”
  + Writing a letter to someone who you feel gratefulness towards and then delivering this letter in person.
  + Reported large gains in happiness and reductions in depression up to 1 month later. The magnitude was enormous compared to all other interventions.
    - The MOST powerful positive psychology intervention in terms of degree of change.
  + Another study, participants self selected into happiness intervention (high motivation) or cognitive exercises (low motivation).
    - Assigned to one of 3 conditions, gratitude, optimism, or control.
    - Participants in the gratitude condition were asked to write gratitude letters but not send them, and optimism condition wrote about best possible selves.
  + Positive benefits immediately observed, w/ high motivation reporting greater increases in SWB than low motivation.
    - No lasting effect however, at the 6 month follow-up.

Interventions to Increase Gratitude in Children/Adolescents

* Counting Blessings
  + Works for ages 11-14 as well! Counted up to 5 things they were grateful for, vs 5 things that were irritating.
  + Related to more gratitude, optimism, life satisfaction, and less negative affect.
  + Critically, this lasted even more strongly after the intervention ended, and there was more reported satisfaction with the school experience itself!
* Gratitude Visit
  + Teens were asked to write letter to those who never were properly thanked, and to read the letter in person, and then share the experience.
    - Controls were asked to record and think about normal events in life.
  + Found significant increase in gratitude and positive affect than control.
* Learning Schematic Help Appraisals
  + Increasing gratitude by training individual’s benefit appraisals.
  + Classrooms of children (8-11 years) randomly assigned to gratitude or attention-control.
  + Children were taught the socio-cognitive determinants of gratitude via structured lesson plans in 5 steps.
    - Introduction
    - Benefactors intentions when being a beneficiary
    - Understanding cost taken when benefactors give something
    - Benefits of receiving a gift from a benefactor
    - Review and summary
  + Control condition were given similar activities, but were focused on ‘neutral topics’ such as daily events.
  + Across 2 different studies, found that children taught socio-cognitive underpinnings of gratitude were more grateful and increased SWB. Expressed gratitude more (wrote 80% more Thank You cards to PTA) and that teachers observed them to be happier compared to those in control condition.

Next Steps for Gratitude Interventions

* Use of Gratitude Interventions in Clinical Therapy
  + Has been shown to work well in improving mental health and SWB in control groups that have hassles or complaints, but we need more clinical relevancy.
* Rigor needs to increase in experimental studies.
* Need to determine which gratitude interventions are better than ‘gold standard’ treatments already extant for mental disorders.
* Gratitude can be detrimental to certain personality types
  + Needy individuals experienced negative effects when participating in music and gratitude exercises, decreases in happiness and increases in physical symptoms, compared to self-critical individuals (who benefited from both).
* “Booster sessions” to strengthen interventions.
  + Gratitude interventions are most effective when distributed regularly over time, and when individuals intentionally and willfully engage in these activities
  + Leads to people continuing to put gratitude exercises in practice for their daily lives
    - Encourages to apply gratefulness exercises to new situations and people in their lives.
* Moderators in Interventions
  + Gratitude seems to benefit boys more than girls
  + Individuals prefer exercises tailored to their gender, increasing likelihood of people ‘owning and committing’ to the interventions.
  + Different amounts of gratitude for help or gifts is experienced based on the amount of help/size of gifts they are used to getting.
  + Gratitude is not experienced in some achievement contexts unless the individual believes that they are responsible for the success, even when acknowledging the help they received.

Kerr 2015: Can Gratitude and Kindness Interventions Enhance Well-Being in a Clinical Sample?

* Efficacy of 2-week self-administered gratitude and kindness interventions within a clinical sample of waiting-list outpatient psychological treatment subjects.
* Can reliably cultivate emotional experience of gratitude, but not kindness.
* Gratitude and kindness interventions built sense of connectedness, enhanced satisfaction w/ daily life, optimism, and reduced anxiety compared to placebo control.
  + Did not have impact on overarching constructs, such as general psychological functioning and meaning in life.
* Works well at potential attenuation of negative results from being on a wait-list for psychological help if therapy is needed.

Long wait times can make people suffering or waiting for help feel even worse, and can lead to clinical drop out, or reduce likelihood of seeking help. Thus, self-administered therapy that can be provided on the wait-list could have value!

The broaden and build theory posits that gratefulness can address some of these negative consequences. This is by broadening awareness of choices that can be made, and building up valence resources with which to have greater success moving forward.

Study

* Efficacy of gratitude intervention, kindness intervention, and mood-monitoring placebo
* N = 48, 3/4th female, 19-67 years age, mean 43, seeking psychological treatment in Queensland, Australia.
  + Self reported problems include depression, anxiety, relationship issues, PTSD, substance use problems, and eating disorders.
* Measures
  + Gratitude: measured with composite of daily situations and actual experienced gratitude
  + Kindness: Similar to above, measured by kind acts committed and kindness intensity
  + Hedonic Well Being: PANAS scale for overall positive and negative affect
  + Eudaimonic well being: Purpose in Life Test
  + General Psychological Functioning: Outcome Questionnaire-45 and Depression Anxiety and Stress Scale (DASS-21)
  + Interpersonal functioning: Self-reported likert scale.
* Randomly assigned to gratitude, kindness, or placebo
  + Gratitude: Asked to think about the past day, and write 5 things in life that you are grateful/thankful for, for 14 days in a diary
  + Kindness: Asked to describe up to 5 kind acts that you did for someone else today, that includes at least 1 kind thing done intentionally, for 14 days in a diary
  + Placebo: Asked to monitor their positive and negative affect in daily mood and overall life appraisals, all 3 conditions did this, but the placebo condition ONLY did this.
* Results
  + Average # of gratitude events in grat condition was 2.7, mean intensity was 5.46/10
    - Gratitude intervention did indeed enhance degree of gratitude experienced, no diff b/w kindness and control condition here.
  + Average # of kind acts was 2.58, mean intensity of 4.5/10.
    - No significant differences between groups in ratings of average kindness.
  + Hedonic Well-Being
    - Gratitude condition rated satisfaction with life higher than control
    - Gratitude condition had higher optimism than control
  + Eudaimonic Well-being: No differences in meaning in life for all times and conditions.
  + General Psychology Functioning:
    - All participants had greater functioning over the course of the 2 weeks
    - All groups had a reduction in stress levels, but only gratitude/kindness groups reported reduction in anxiety levels.
  + Relational functioning:
    - Both gratitude and kindness group reported greater connectedness with others, than the control group.

Discussion

* We can reliably cultivate gratitude, which leads to enhanced life satisfaction and connectedness with others, higher optimism, and less anxiety.
* Kindness cannot be cultivated in the same way.
* Based on broaden and build, demonstration that both gratitude and kindness can improve functioning and greater resources.
  + Even from a baseline of distress and negative emotion!
* Overall, the predicted directions were seen for many of the constructs examined.
  + Dose-effect relationship, where greater distress, the larger intervention needed to get the same effect.
* Unsure how long it takes to build the over-arching construct, and that the ‘build’ may take some time to appear, which is currently unknown, would require a longer experimental protocol, and greater time allowed for follow-up.