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