Positive Emotions

The Science of Resilience

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Definition

Emotions are defined as the *"urges to act in particular ways, urges that have been called specific action tendencies"* (Fredrickson, 1998, p. 392). Fredrickson and Cohn (2008) describe emotions as "multicomponent response tendencies—incorporating muscle tension, hormone release, cardiovascular changes, facial expression, attention, and cognition, among other changes—that unfold over a relatively short time span" (p. 778). Emotions arise when there are four components available: *a situation,* which an individual *attends* to, *appraises* it as relevant to their needs, goals, or values, and *responds* to it (Quiodbach et al., 2015). Emotions are affective phenomena that occur in short periods. They begin with a person's judgement of the meaning of an event, which triggers response tendencies manifested as facial expressions, subjective experiences, a person's cognitive processing, and physiological changes (Fredrickson, 2001).

Positive emotions urge a person to act or continue acting with the activities and enhance engagements with their environments. They serve "as markers of flourishing, or optimal well-being" (Fredrickson, 2001, p. 218). Different from negative emotions, positive emotions are less distinctive (Fredrickson, 1998, 2001). Most of the time, they are perceived as one state of emotions, in the form of happiness, feeling good, or positive moods (de Rivera et al., 1989). Happiness is "a composite of life satisfaction, coping resources, and positive emotions" (Cohn et al., 2009, p. 361).

De Rivera et al. (1989) differentiate forms of positive emotions: elations, gladness, and joy. Elations happens when a person's unexpected wish involving the self is fulfilled. The feeling is described as an impulse to jump up and down or being lifted off the ground. When a person is elated, they want to tell people about what has happened. Gladness happens when a hope, which has a possibility to be realized, is fulfilled. People experience the feeling as openness and an urge to welcome other people. Joy happens when "there is a mutual meeting between the person and another, in which the other is perceived as being unique" (de Rivera et al., 1989, p. 1016). Joy, amusement, elation, and gladness have similar conceptual space (Fredrickson, 1998).

Below are eleven key positive emotions often experience in daily life (Fredrickson, 2013; Fredrickson, 1998). For a longer typology of positive emotions, see Appendix A (Desmet, 2012).

- Joy: arouses from an unexpected good fortune and an appraisal that something is safe, familiar, requires low efforts. Joy sometimes is related to accomplishment or progress toward some goals. Joy is also related to free activations, the urge to play and be playful (intellectually and artistically), imaginative and unscripted play. It improves one's physical, intellectual, and social skills.

- Gratitude: joy turns into gratitude when a person acknowledges another person's contribution to their unexpected good fortune. Gratitude triggers the need and thoughts of various ways to be kind to self and others. In the long term, gratitude builds a person's skills to care and be kind [See our write up on Gratitude for more on this positive emotion's unique relationship to resilience].

- Serenity: occurs when one's circumstance is right, cherished, or satisfying in the form of ease and comfort. Serenity urges a person to savour the situation and add it to their priorities and values. In the long term, the feeling builds a more refined sense of oneself and one's priorities.

- Interest: is related to curiosity, intrigue, excitement and similar to challenge and intrinsic motivation. It occurs when a person experiences a flow of enjoyment from having their skills match the challenges in a situation. In the long term, interest broadens knowledge. In children, interests trigger a wider range of plays, more variations within a play, and a longer playtime.

- Hope: feels like a chance to make things better when a person is in a dire, unknown situation. In the long term, hope builds optimism and resilience to adversity. [See our write up on Optimism for more on this relationship].

- Pride: occurs when "people take credit from socially valued good outcomes" (Fredrickson, 2013, p. 6), such as accomplishing an important goal. Pride creates bigger goals and accomplishments. In the long term, it builds a person's motivation for achievements.

- Amusement: happens when people perceive their situation as a nonserious social incongruity. The feeling triggers the urge to laugh and find a way to continue the fun. In long term, it builds and strengthens social bonds.

- Inspiration: happens when a person perceives other people's excellence in some manners. The feeling creates inspirations to do good deeds and excel oneself, do better/personal best. In the long term, it builds motivation for personal growth.

- Awe: happens when a person is overwhelmed by something or someone more powerful/larger than life. In the long term, it builds new worldviews.

- Contentment: differs from pleasure (which relates to physical needs), contentment happens when a person attains good fortunes in a high degree of certainty and a low degree of effort. The feeling urges a person to savour the current circumstances and recent successes, which engenders oneness, positive worldview, and self-concept. In long term, it builds personal resources.

- Love: is made up of several positive emotions when a person's acquaintance and figure out new aspects of other people. It creates a sense of familiarity, joy, and contentment.

Positive emotions have not gotten the same attention as negative emotions in research; one reason may be that there are fewer positive emotions, and they are hard to differentiate (Ekman, 1992; Fredrickson, 1998; Larson et al., 2003). While negative emotions convey problems that need to be solved, positive emotions occur only in a few pathologies, such as

bipolar disorders and from abusing psychoactive drugs. They also have a different activation process and signals compare to negative emotions. Therefore, reducing negative emotions will not improve one's positive emotions.

Positive emotions do not fit in the specific action-tendencies model, which means a particular positive-emotion does not trigger the urge to act in a particular way (Fredrickson, 1998). Positive emotions are more likely to occur when a person is facing a trivial stressor, while severe stressor and negative information trigger negative thoughts and negative emotions in people (Larson et al., 2003). The stimulus of positive emotions, which is not always physical, triggers a short-lived event that is meaningful (Fredrickson, 2001).

Fredrickson (2001) analyzes four dimensions of positive emotions based on the comparison of pleasantness to one's expectations and controllability: high arousal-low arousal, and high personal control-low personal control. For example, joy has a similar context with other high arousal emotions, while contentment is a low-arousal positive emotion that shares conceptions with mild-joy and relief.

One defining characteristic of positive emotions is that they share a similar sign, namely the Duchenne smile (the smiling lips and the pulling inwards of the skin surrounding the eyes) (Ekman, 1992). Positive emotions improve across age. Older adults tend to pay more attention to their positive emotions (Ong et al., 2011). Having positive emotions improve one's cognition, which results in more flexibility to see categories, relatedness, and interconnections, extensive cognitive elaboration on ideas and concepts, better memory, and creative thinking (Fredrickson, 1998; Isen, 1999). Fredrickson (1998; 2001) explains the role of positive emotions in building resources in the Broaden-and-Build theory.

The Broaden-and-Build Theory

In the Broaden-and-Build theory, Fredrickson (1998, 2001) explains how positive emotions build and broaden one's physical, intellectual, and social resources. Positive emotions are not triggered by threats and the demand to make quick decisions but are derived from a person's way to adapt and maintain broad-ranging resources to improve their life in the long term (Fredrickson, 1998). These resources are not critical for the individual's safety and survival at the moment. For example, long-term interest in a topic builds one's knowledge and skills in that topic and having love and affection toward significant others provides a person with lifetime social support (Cohn et al., 2009). Positive emotions also do not trigger specific action tendencies and do not always lead to physical actions. They tend towards non-specific action tendencies, or *free activation* and cognitive changes (Fredrickson, 1998).

Positive emotions broaden a person's momentary *thought-action repertoire*. The experience of positive emotions shifts people from their everyday behavioural script and engages them in more creative, novel, and unscripted thoughts and actions (Fredrickson, 1998). The emotions broaden visual attention (shifting and broadening visual focus and attention to a

global level), cognition (improving creativity, flexibility, inclusiveness, and receptivity to new information), and behaviour (adding more variety of actions and potential actions). The positive emotions also build and broaden social cognition, which reduces distinctions between self and others, broadens social group concepts, and increases interpersonal closeness (Fredrickson & Cohn, 2008; Ong et al., 2012).

Over time, repeated experiences will result in broader mindsets and ample opportunities to build one's physical, intellectual, and social resources. These resources help in improving a person's adaptive coping ability, which in turn reduce stress and improve their health and psychological well-being, alleviate negative mindset, and reduce the risk of depression (Fredrickson et al., 2003). The Upward Spiral Model of Lifestyle Change explains how positive emotions affect an individual's wellness (Fredrickson, 2013).

The Upward Spiral Model of Lifestyle Change

The Upward Spiral Model of Lifestyle Change, based on the Broaden-and-Build theory, explains how positive emotions can increase health and psychological behaviours, therefore improving a person's wellness. The main factors in the Upward Spiral Model of Lifestyle Change are motives that came from positive emotions, a range of wellness behaviours, and individual differences in mutable resources. Positive emotions trigger nonconscious motives to perform a range of wellness behaviours and be more active, curious, socially connected, healthier, and more resilient. The changes are influenced by a person's biological (e.g. oxytocin, cardiac vagal tone, inflammation) and psychological (e.g. mindfulness, resilience) factors (Fredrickson, 2013).

Fredrickson (2013) explains that an individual's positive health behaviours are also influenced by the *nonconscious incentive salience* or the desire to re-live the pleasant feeling from previous positive experiences. The nonconscious incentive salience broadens a person's cognition and awareness, which improves their flexibility and creativity to maintain wellness behaviours. These new behaviours then trigger nonconscious motives that shape behavioural decisions and form a cycle (Fredrickson, 2013). Ong et al. (2011) found an effect of positive emotions improving older adults' health and well-being, for example, by regulating their stress hormone levels, improving their physiological systems, and their adaptive sleep patterns. Gloria and Steinhardt (2016) found that the reciprocal relationships between positive emotions and resilience enabled postdocs to cope and adapt more successfully in stressful situations. They reported lower scores on trait anxiety and depressive symptoms when stress levels increased (Gloria and Steinhardt, 2016).

Relationship to Resilience

There are assumptions that positive emotions are more harmful to people facing adversities. In the midst of adversity, the presence of positive emotions is inappropriate and

perceived as a sign that people do not understand the gravity of their situation or are ignorant of their reality. There is also an assumption that the presence of positive emotions is short-lived and trivial in adversities (Aspinwall & MacNamara, 2005). Aspinal and MacNamara (2005) make some arguments to counter these assumptions. They explain that a person cannot experience only positive or negative emotions and that feeling some positive emotions cannot be regarded as a person's way to avoid the situation. Early positive emotions in adversities lead to better adjustment, positive reframing, lower denial and disengagement, and better-perceived self-control. Positive individuals tend to pay more attention to negative information and are more likely to engage and broaden their knowledge to analyze the negative information they receive. They tend to receive bad news more constructively, and they do not downplay the messages. People with positive emotions are better at categorizing problems, tasks, and strategies to deal with the situation. In the long term, positive emotions improve people's problem-solving skills and knowledge, foster their social behaviour, and shift one's focus to things they can change (Aspinal and MacNamara, 2005).

A person's psychological resilience is influenced by their experiences of positive emotions, including interest, joy, hope, sexual desire, pride, and contentment (Fredrickson, 2001; Fredrickson et al., 2003). Individuals with higher positive emotions are more resilient and adaptable to changes. As well, more resilient individuals tend to experience more positive emotions and are capable of shifting their focus away from a threat (Cohn et al., 2009; Tugade & Fredrickson, 2004). A person who has better emotional knowledge can identify their emotions. They also have better emotion regulation strategies and personal resources to prevent psychopathologies after adversities (Tugade & Fredrickson, 2004; Shing et al., 2016).

Positive emotions and one's ability to regulate their emotions improve people's broad-minded coping, which allows them to step back and assess their situation from a broader perspective. In turn, one's broad-minded coping abilities increase their positive emotions (Fredrickson, 2013). Positive emotions build psychological resilience by improving one's adaptive coping ability through flexibility, creativity improvements, broadening one's scope of attention, and improving resource utilization. All these resources contribute to and enhance an individual's resilience in time and improve their emotional well-being (Fredrickson et al., 2003). For example, Vulpe and Dafinoiu (2012) found that positive emotions improve ego-resiliency among workers. People who have better emotional control utilize better coping and problem-solving strategies.

Folkman (2008) argues that positive emotions play key roles in the stress process and adapted the previous stress and coping model (Lazarus & Folkman, 1984). She explains that when a stressful event cannot be resolved through problem- and emotion-focused coping, it triggers another way of coping: meaning-focused coping. Meaning-focused coping then induces positive emotions and their appraisals, which in turn influence the stress process by restoring coping resources and providing motivations. These processes reduce stress and maintain problem-focused coping in the long-term. For example, coping processes generate positive

emotions among bereaved AIDS caregivers. The caregivers who have positive experiences, mostly through social supports, cope better with death. They perceived the experience as positive and meaningful, which improves their psychological well-being (Folkman, 1997). After the El Salvador earthquake in 2001, people who experienced happiness and could find humour in the situation had a lower chance of experiencing PTSD. Leisure activities and playtime improve people's positive emotions and reducing negative feelings. Positive distractions also improve people's problem-solving ability and improve their adaptive coping in high-stress situations (Vazquez et al., 2005).

Gross et al. (2011) examined the effect of positive events, which lead to positive emotions, in increasing both resource-building and resource-depletion processes on workers with after-work fatigue. They found that, in adversities, especially in chronic stress conditions, positive emotions decrease fatigue and help people to cope and building back their resources to speed the recovery process. Positive emotions also improve psychological resilience among online support groups for women with breast cancer. Positive emotions are more profound in women with better coping mechanisms and who view their illness more positively (Han et al., 2008).

Building physical and physiological resources

Positive emotions build and improve a person's physical resources (Fredrickson, 1998). Positive emotions decrease stress-induced cardiovascular reactivity (Tugade & Fredrickson, 2004), release dopamine in the anterior cingulate region of the brain (Isen & Labroo, 2003), and control the fluctuation of diurnal cortisol levels (Ong et al., 2011). Better cardiovascular recovery is one of the signs of better psychological capacity and emotion control. A person with better emotional control is capable of exploring broader coping strategies to bounce back in adversities (Tugade & Fredrickson, 2004).

Flexibility [see our Flexibility write-up] and creativity [See our Creativity write-up] in problem-solving and decision-making processes are crucial resources in facing adversities and building resilience. Isen and Labroo (2003) investigated how positive emotions affect judgement and decision-making processes from the neurophysiological perspective. They found that positive emotions increase dopamine release into the anterior cingulate and frontal areas, the area that regulates effective thinkings, flexible attention, and task switching. The dopamine release improves: "creativity, openness to information, exploration, integration of ideas, effective problem solving, focus on important negative information when that is needed, ability to keep others' perspective as well as one's own in mind seemingly simultaneously, and responsiveness to other's behaviour" (Isen and Labroo, 2003, p. 384). Positive emotions also trigger generosity and the willingness to help by shifting a person's perspective and helping them to see from other people's points of view (Isen & Labroo, 2003).

Ong et al. (2010; 2011) explore the effect of positive emotions in bereaved individuals after a spousal loss. Individuals with positive emotions have lower stress and better-coping

abilities and resources, which all trigger a sense of well-being (Ong et al., 2010). They found that positive emotions lower bereaved individuals' cortisol levels, a marker of stress. Better regulation of cortisol levels links to improvements of neuroendocrine stress response systems and lower stressor reactivity. The process is not dependent on other factors (e.g. age, gender, education, extraversion, negative emotion, and neuroticism). All this shows that positive emotions make people less vulnerable to stress (Ong, 2011). However, couples' prior relationships also influence their positive emotions in bereavement. Bereaved people who had a strained relationship may be less depressed, less distressed, and experience significant mood improvements (Ong et al., 2010).

Cognitive broadening

Positive emotions can improve one's cognition (Fredrickson, 1998; Fredrickson, 2001), which helps people to make decisions and solve problems in difficult situations (Fredrickson, 2009). Positive emotions influence people's judgements and decision-making processes in several ways, such as: influencing people's range of choices, expanding their willingness to accept evidence, improving cognitive organization, cognitive structure utilization, integration material, and the ability to separate information (Isen and Labroo, 2003).

Shing et al. (2016) found that positive emotions prevent people from ego-depletion after man-made and natural disasters, therefore helping them in completing self-regulation tasks. Positive emotions, such as forgiveness (involving empathy and compassion), also restore people's world belief system and broaden their meaning-making experience. Vazquez et al. (2005) explored people's emotional experiences after the 2001 earthquake in El Salvador. They found that people with positive emotions were better at controlling their positive and negatives emotions and had greater self-efficacy. Participants reported learning something positive and acquiring new skills in the crisis, which gave them back their sense of control and provided them with an assurance that they can get through the situation. The information and skills they learned from the experience increased their abilities to face future adversities and broadened their view when analyzing complex situations, which gave meaning to the experience (Vazquez et al., 2005).

Positive emotions also help parents of children with disabilities to keep building their coping skills and resources. Parents with a severely disabled newborn child experience severe physical and emotional stress while taking care of the child. Strong emotions help them to continuously build and improve their resources to face ongoing and unexpected challenges. Sometimes, negative emotions (despair and fear) deplete their resource, causing exhaustion. To cope, these parents keep appraising and reappraising their resources and connections, thus broadening their knowledge and skill, for example, through information seeking and joining training programs (Graungaard et al., 2011).

Daily positive emotions also help patients with chronic pain to cope with their day-to-day situations. Further, positive emotions diminish their negative habitual thinking (e.g. rumination, helplessness), therefore improving their cognitive resilience (Ong et al., 2010).

Building social resources

Positive emotions contribute to resilience by building alliances and strengthening social networks and bonds (Fredrickson, 1998, 2001, 2013). For example, people with positive emotions, reflected in their sense of relief and solidarity, helped each other to face and reduce the risk of future flooding in the Netherlands (Terpstra, 2011). People also paid more attention to their environment after flooding disasters. Positive feelings appear to increase people's risk perception and their trust to risk management authorities and the flood management plan that they built. Positive emotions also helped people to cope with the September 11th terrorist attack. People who experienced positive emotions (e.g. love, interest, gratitude) in the middle of considerable anger, sadness, and fear found the motivation to count blessings and connect with their family and friends. Connecting with other people and expressing their love helped them to cope with negative emotions from the attack (Fredrickson et al., 2003). Shing et al. (2016) found that positive emotions and meanings from daily interpersonal interactions with family members, other survivors, and aid workers help disaster survivors to gain their trust in humanity. In turn, the positive experiences from daily interactions built and strengthened social ties after disasters.

Positive emotions that help parents of disabled newborns to cope also connect them to other families in the same training programs. The experience also bonds them with their partner and their family. These connections provide these parents with a sense of hope, emotional supports, and a belief that they can make a difference (Graungaard et al., 2011).

Improving

Positive emotions can be generated by (Folkman, 2008; Quoidbach et al., 2015; Vazquez et al., 2005; Shin et al., 2016):

- Finding benefits a person can obtain in stressful situations, for example by making a list of positive ways to cope and positive outcomes in a stressful event.
- Remembering possible benefits that came from the stressful experience (e.g. chronic illness patients can write a daily diary to remind themselves what benefits they experience every day).
- Adapting one's goals into more realistic goals; having new, attainable goals reduces stress and conveys a sense of purpose.
- Re-ordering priorities by focusing on things that really matter, for example by thinking *"I decided that the most important thing in my life is to get better, and that is what I am concentrating on"* (Folkman, 2008, p. 11). Reordering priorities can be stressful and

requires acceptance of the current situations, but it provides individuals with a new sense of purpose, which is the key for one's goal setting, problem-solving, and decision-making processes. Re-ordering priorities also helps in increasing coping efficiency by narrowing one's focus.

- Giving a positive meaning to ordinary events, such as by enjoying natural sceneries, good movies, or providing and getting words of gratitude or praises.
- Preparing and imagining the best possible future before starting the day.
- Getting *pumped up,* for example, by listening to music, drinking caffeinated beverages, doing physical exercises and various relaxation strategies (e.g. meditation, yoga).
- Saving the best time for last or breaking up positive events in smaller units.
- Celebrating important events to savour the positive experiences (e.g. birthday party, wedding receptions, anniversary celebration).
- Reminding oneself of one's own role in their life events (e.g. "I work hard for it", "I am good at this", "I will succeed again").
- Physical and verbal modulation, for example, by having more confident body posture, smiling, sitting up straight, lifting one's cheeks upward, and speaking with a more confident tone.
- Listing and writing down positive experiences, for example, by keeping a detailed diary of positive experiences that gave a sense of well-being and grading those experience on a numeric scale based on the importance and what brings happiness.
- Writing a letter from the future to oneself or writing on one's best possible self for 15 minutes per week.
- Counting kindness and keeping a record of good deeds one has performed every day.
- Daily exercise, for example, by taking a 20-min walks while paying attention to the environment or by doing pleasant activities every day for a few minutes.
- Doing aerobic laughter interventions or laughter yoga.
- Providing people in adversities (e.g. disaster survivors, refugees) with leisure activity programs to improve their happiness and provide them with positive distractions.
- The Positive Mental Time Travel Intervention (see below for details).
- Well-being therapy (see below for details).

A regular practice is crucial for turning these possible improvements into habits. Practicing more than one strategy is more effective in triggering positive emotions (Quoidbach et al., 2015). It is important to note that the pursuit of happiness is influenced by culture. People from more individualist cultures are better at pursuing individuals' happiness, while members of collectivist culture find their happiness in more socially engaged ways (Ford et al., 2015).

Fordyce (1983) described happiness as a positive emotional sense of well-being that can also be experienced as contentment, fulfillment, self-satisfaction, joy, peace of mind and other positive emotions. He formulated 14 fundamentals of happy individuals:

- keep busy and be more active;
- spend more time socializing;
- be productive at meaningful work;
- get better organized and plan things out;
- stop worrying;
- lower your expectations and aspirations;
- develop positive, optimistic thinking;
- become present-oriented;
- work on a healthy personality;
- develop an outgoing social personality;
- be yourself;
- eliminate negative feelings and problems;
- close relationships are the number one source of happiness;
- and put happiness as your most important priority. (Fordyce, 1983, p. 484)

Interventions

There are various ways to generate positive emotions through interventions. Quoidbach et al. (2015) define positive interventions as various techniques that aim to directly improve positive emotions, thoughts, and behaviours, with enhanced well-being as a goal. They analyzed previous research regarding positive intervention and proposed five categories of emotional regulation strategies to increase positive emotions: situation selection, situation modification, attentional deployment, cognitive change, and response modulation

The Positive Mental Time Travel Intervention

Quoidbach et al. (2009) exploree the effect of deliberate mental time travel (MMT) on happiness and anxiety. For 15 days, participants imagined four events (positive, negative, or neutral) that could reasonably happen to them tomorrow. The events could be simple everyday pleasures or special events. They were asked to imagine the specifics (the place, people and objects surrounding, sensory details, emotions they feel) and write down a summary of their projections. They rated emotions they would experience if the projections were realized on a 7-point scale (-3=*extremely negative* to +3=*extremely positive*). After 15 days, participants who imagined positive events were significantly happier compared to the ones that imagined negative and neutral events.

Well-being Therapy

Well-being therapy is a psychotherapy model that aims to enhance individuals' well-being using a "multidimensional model of psychological well-being, encompassing environmental mastery, personal growth, purpose in life, autonomy, self-acceptance and

positive relations with others" (Fava, 1999, p. 171). Well-being therapy consists of 8 weekly or bi-weekly sessions (each 30-50 min). The sessions are (Fava, 1999; Fava & Ruini, 2003):

1. Initial sessions: identifying clients' well-being by asking them to write down their well-being experiences in a diary and rated them on a scale (from 0 to 100). This phase lasts over a couple of sessions, depend on the effect of the assignment (whether participants resist or comply).
2. Intermediate sessions: clients identify thoughts and beliefs that cause interruption of well-being. The sessions extend over 2-3 sessions.
3. Final sessions: realizing specific impairments and discussing errors in thinking and alternative interpretations.

The key concepts of well-being therapy are (Fava, 1999; Fava & Ruini, 2003):

- Environmental mastery: changing clients' perspective from "I got lucky" and "I am a failure" to "I can do it" and "I have control over the situation."
- Personal growth: changing the feeling of stagnation and boredom to finding the subject's feeling of continuous development, growth, and openness to new experiences.
- Purpose in life: helping clients to find their life meaning and sense of direction in life.
- Autonomy: assisting clients in finding their independence and learn to resist social pressures.
- Self-acceptance: improving the subject's view about themselves.
- Positive relations with others: helping clients to build healthy relationships and positive relations with other people.

Fava and colleagues developed the well-being therapy for treating the residual phase of affective disorders, preventing recurrent depression, cognitive behavioural treatment, body image disorders, obsessive-compulsive disorders, and psychosomatic medicine. However, evidence of the effectiveness of well-being therapy is still limited (Fava et al., 2017).

Positive Psychotherapy (PPT) Model of Positive Psychology

Seligman et al. (2006) propose the use of positive psychotherapy (PPT) to alleviate depression. They argue that depressive patients can be treated not only by reducing their negative emotions but by building their positive emotions, strengths, and meaning. Positive psychotherapy argues that happiness is composed of three components: "positive emotion (the pleasant life), engagement (the engaged life), and meaning (the meaningful life)" (Seligman et al., 2006, p. 776). The pleasant life consists of skills to enhance the intensity and duration of positive emotions in the past (e.g. satisfaction, fulfillment, pride, contentment, serenity, gratitude, and forgiveness), the present (e.g. satisfaction), and the future (e.g. hope, optimism, faith, trust, confidence). The engaged life theory posits that a person needs to be engaged and involved in work, social relations, and leisure to be happy or engage in the flow, "the psychological state that accompanies highly engaging activities" (Seligman et al., 2006, p. 777).

Enhancing one's life engagement and flow is done by identifying one's talents and strengths and provide opportunities to utilize them. These activities have meanings and finding meanings in one's life gives one satisfaction and happiness.

PPT works by reducing and preventing negative emotions, turning them into positive and hopeful emotions, and employing those emotions, along with one's strengths, to manage negative moods. Below are week-by-week group PPT exercises (Seligman et al., 2006, p. 776; see Appendix B for a Session-by-Session Description).

1. *Using Your Strengths*: Take the VIA-IS strengths questionnaire to assess your top 5 strengths and think of ways to use those strengths more in your daily life.
2. *Three Good Things/Blessings*: Each evening, write down three good things that happened and why you think they happened.
3. *Obituary/Biography*: Imagine that you have passed away after living a fruitful and satisfying life. What would you want your obituary to say? Write a 1–2-page essay summarizing what you would like to be remembered as.
4. *Gratitude Visit:* Think of someone to whom you are very grateful but have never properly thanked. Compose a letter to them describing your gratitude and read the letter to that person by phone or in-person.
5. *Active/Constructive Responding*: An active-constructive response is one where you react in a visibly positive and enthusiastic way to good news from someone else. At least once a day, respond actively and constructively to someone you know.
6. *Savoring*: Once a day, take the time to enjoy something that you usually hurry through (examples: eating a meal, taking a shower, walking to class). When it's over, write down what you did, how you did it differently, and how it felt compared to when you rush through it.

Loving and Kindness Meditation

Loving-Kindness Meditation (LKM; Fredrickson et al., 2008; Cohn and Fredrickson, 2010) is an intervention to evoke positive emotions toward the self and others through meditation practice. LKM is based on Buddhism values (loving-kindness, compassion, sympathetic joy, and equanimity) and the notion that all living beings are connected (Hofmann et al., 2011). It differs from mindfulness meditation in the way a person directs their attention and awareness; mindful meditation direct one's attention in a nonjudgmental way while in LKM, people are encouraged to direct one's emotion toward warm and tender feelings in an open-hearted way (Fredrickson, 2008).

LKM focuses on different stages, including: "(1) focus on self; (2) focus on good friends (i.e., a person who is still alive and who does not invoke sexual desires); (3) focus on a neutral person (i.e., a person who typically does not elicit either particularly positive or negative feelings but who is commonly encountered during a normal day); (4) focus on a "difficult" person (i.e., a person who is typically associated with negative feelings); (5) focus on the self,

good friend, neutral person, and difficult person (with attention being equally divided between them); and eventually (6) focus on the entire universe" (Hofmann et al., 2011, p. 1130).

Fredrickson et al. (2008) began the intervention with orientations, in which participants learned about the procedure and the benefits of meditation. Participants then filled out an initial survey. After the orientations, participants attended LKM Workshops. The workshop involved six 60-minute group sessions with 2-30 participants per group, led by a stress management specialist with LKM experience. In week 1, participants focused the love and kindness on themselves, while in week 2, they extended the feeling to loved ones. The feeling then was extended to acquaintances, strangers, and all living beings. The meditation lengths varied from 15 minutes to 22 minutes. Each workshop also included 20 minutes of discussions and progress checking. Participants practiced at home five days per week.

Zeng et al. (2015) did a meta-analytic review of LKM and found that the intervention improves positive emotions in daily life and provides short-term positive emotions. Hofmann et al. (2011) found that LKM enhances brain areas involved in emotional processing and empathy activation.

Assessment

Positive emotions consist of multiple components and are subjective. Lucas et al. (2009) argue that no measurement is capable of measuring the entirety of emotional phenomena, therefore, multiple-methods investigations are needed when possible. Below is a summary of their review on different methods for the assessment of positive emotions: self-reports and non-self-report methods (Lucas et al., 2009).

Self-reports of Positive Emotions

- Asking respondents to indicate the frequency and intensity of positive emotions they are experiencing or have experienced.
- The format and scales can be varied, such as:
  - Numbers of items:
    - Single, broad positive emotions: asking respondents how they feel using single broad positive emotions. This scale provides some validity but is low in reliability.
    - Multiple-item scales: assessing multiple aspects of a single basic emotion or assessing multiple basic emotions to get a broad range of positive emotions. The scales offer better reliability and coverage.
      - Note: positive emotions are highly correlated, thus a short scale can exhibit strong reliability.

- o Response scale: a simple checklist, a yes-no response scale, Likert response scale, various number of points (usually five to nine points), frequency scale (*never* to *always*) or intensity scale (*not at all* to *very much*).
  - o Time frame: to distinguish between short-lived experiences (emotions) and long-lasting feelings (moods).
  - o On-line vs retrospective reports.
  - o Specific positive emotion measures.

Non-self-report Methods

- Observer reports: asking informants (e.g. family members, friends) to act as observers and rate target participants' emotion and additional information of their emotional experience.
- Facial measures: examining facial expressions to find specific signs of emotions, for example, facial action coding system, the Duchenne Smile (more details below), and electromyography.
- Physiological measures: measuring physiological signs to identify emotional experiences, such as heart rate, heart acceleration, blood pressure, cortisol levels, dopamine levels, electroencephalogram, PET, functional MRI, and many others.
- Emotion-sensitive tasks: using cognitive tasks to measure emotional experience, for example, by asking participants to recall happy experiences in a short amount of time.

Some example of self-report and non-self-report measures

Satisfaction with Life Scale (Diener et al., 1985)

- Measures components of subjective well-being
- Five items rated on a 7-point scale (1=*strongly agree* to 7=*strongly disagree*)
- Cronbach's alpha: .64

Modified Differential Emotions Scale (mDES; Fredrickson et al., 2003; Cohn et al., 2009; see Appendix C)

- 20 emotions: 12 from the original DES and eight additional positive emotions (amusement, awe, contentment, gratitude, hope, love, pride, and sexual desire), and sympathy.
- A 5-point scale (0=*never* to 4=*most of the time*)
- Cronbach's alpha for 9 positive emotions (except awe): .86; Cronbach's alpha for 9 negative emotions (except embarrassment): .82

The Positive and Negative Activation Schedule (PANAS; Watson et al., 1999; see Appendix D)

- Measures everyday life emotions
- Contains 10 items of positive affect and 10 items of negative affect

- PA scale: active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, and strong
- PANAS-expanded form (PANAS-X; Watson & Clark, 1994) put positive affects in four categories: joviality (joyful, excited, and enthusiastic); self-assurance (bold, fearless, and strong), attentiveness (attentive, alert, and concentrating), and serenity (calm and relaxed)
- Measured on a 5-point unipolar response scale (1=*very slightly or not at all*, 2=*a little,* 3=*moderately,* 4=*quite a bit,* and 5=*extremely*)

The Savouring Beliefs Inventory (Bryant, 2003)

- A 24-item scale assessing a person's tendency to enjoy pleasant experiences in the moment (savouring the present), pleasurably anticipate them beforehand (savouring the future), and pleasurably recall them afterward (savouring the past).
- A 7-point scale
- Cronbach's alpha: .88 and .92 for savouring the past, .88 and .89 for savouring the present, and .87 and .91 for savouring the future

The Positive States of Mind Scale (Horowitz et al., 1988)

- Assesses different positive states of minds: focused attention, productivity, responsible caregiving, restful repose, sensuous pleasure, and sharing
- Measured on the range of 0=*unable to have it* to 3=*have it well*

Positive and Negative Affect Scales (Mroczek & Kolarz, 1998; see Appendix E)

- Cronbach's alpha: .87 for negative affect and .91 for positive affect
- Measure the time-frequency participants experience various positive emotions over the past 30 days
- A 5-point scale (1=*none of the time* to 5=*all of the time*)
- The six items in the positive emotion scale are: cheerful, extremely happy, calm, and peaceful, in good spirits, full of life and satisfied

The Duchenne Smile (Ekman et al., 1990)

- Measures happiness behaviorally
- The Duchenne smile is defined as "smiling in which the muscle that orbits the eye is active in addition to the muscle that pulls the lip corners up" (Ekman et al., 1990)

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Appendix A: General typology of 25 positive emotions

Desmet (2012, p. 4)

Empathy	**Sympathy** To experience an urge to identify with someone's feelings of misfortune or distress *Compassion/ empathy/ pity* **Kindness** To experience a tendency to protect or contribute to the well-being of someone *Caring/ friendly/ tenderness/ warm* **Respect** To experience a tendency to regard someone as worthy, good, or valuable *Appreciation/ approval*
Affection	**Love** To experience an urge to be affectionate and care for someone *Affection/ intimacy/ romance/ infatuation* **Admiration** To experience an urge to prize and estimate someone for their worth or achievement *Impressed/ esteem* **Dreaminess** To enjoy a calm state of introspection and thoughtfulness *Pensive/ contemplative*
Aspiration	**Lust** To experience a sexual appeal or appetite *Passion/sensual/horny/sexy* **Desire** To experience a strong attraction to enjoy or own something *Attraction/yearn/crave* **Worship** To experience an urge to idolize, honour, and be devoted to someone *Adore/devotion/reverence*
Enjoyment	**Euphoria** To be carried away by an overwhelming experience of intense joy *Ecstasy/ elation/ exhilaration/ jubilation* **Joy** To be pleased about (or taking pleasure in) something or some desirable event *Happy/pleasure/delight/cheerful* **Amusement**

	To enjoy a playful state of humour or entertainment *Entertained/gaiety/humorous/glee*
Optimism	**Hope** To experience the belief that something good or whished for can possibly happen *Optimistic/encouraged/wishful* **Anticipation** To eagerly await in an anticipated desirable event that is expected to happen *Eager/ expectant*
Animation	**Surprise** To be pleased by something that happened suddenly, and was unexpected or unusual *Amazement/astonished/startled/dazzled* **Energized** To enjoy a high-spirited state of being energized or vitalized *Exuberant/zest/excitement/stimulation*
Assurance	**Courage** To experience mental or moral strength to persevere and withstand danger or difficulties *Brave/ heartened* **Pride** To experience an enjoyable sense of self-worth or achievement *Triumphant/self-satisfaction/smug* **Confidence** To experience faith in oneself or one's abilities to achieve or to act right *Assurance/secure/trust*
Interest	**Inspiration** To experience a sudden and overwhelming feeling of creative impulse *Enthusiasm/determination/challenged/zeal* **Enchantment** To be captivated by something that is experienced as delightful or extraordinary *Awe/charmed/moved/touched* **Fascination** To experience an urge to explore, investigate, or to understand something *Curious/ attentive/ interest/ engrossed*
Gratification	**Relief** To enjoy the recent removal of stress or discomfort *Reassured/soothed/gratitude* **Relaxation** To enjoy a calm state of being free from mental or physical tension or concern *Comfortable/carefree/serene/tranquility*

	Satisfaction To enjoy the recent fulfilment of a need or desire *Gratified/pleased/contentment/fulfilment*

Appendix B: Session-by-session description of positive psychotherapy

Seligman (2006, p. 782)

Session-by-session description of positive psychotherapy for depressive patients:

Session and theme	Description
1: Orientation	***Lack of Positive Resources Maintains Depression*** The role of absence or lack of positive emotions, character strengths and meaning in maintaining depression and empty life is discussed. The framework of PPT, therapist's role and client's responsibilities are discussed. *Homework*: Clients write a one-page (roughly 300-word) positive introduction, in which they tell a concrete story illustrating their character strengths.
2: Engagement	***Identifying Signature Strengths*** Clients identify their signature strengths from the positive introduction and discuss situations in which these signature strengths have helped previously. Three pathways to happiness (pleasure, engagement, and meaning) are discussed in light of PPTI results. *Homework*: Clients complete VIA-IS questionnaire online, which identifies clients' signature strengths.
3: Engagement/pleasure	***Cultivation of Signature Strength and Positive Emotions*** Deployment of signature strengths is discussed. Clients are coached to formulate specific, concrete and achievable behaviors regarding cultivation of signature strengths. Role of positive emotion in well-being is discussed. *Homework* (ongoing): Clients start a Blessings Journal in which three good things (big or small) that happened during the day are written.
4: Pleasure	***Good Versus Bad Memories*** Role of good and bad memories is discussed in terms of maintenance of symptoms of depression. Clients are encouraged to express feelings of anger and bitterness.

	Effects of holding onto anger and bitterness on depression and well-being are discussed. *Homework*: Clients write about three bad memories, anger associated with them, and their impact in maintaining depression.
5: Pleasure/engagement	***Forgiveness*** Forgiveness is introduced as a powerful tool that can transform anger and bitterness into feelings of neutrality or even, for some, into positive emotions. *Homework*: Clients write a forgiveness letter describing transgression, related emotions, and pledge to forgive transgressor (if appropriate) but may not deliver the letter.
6: Pleasure/engagement	***Gratitude*** Gratitude is discussed as enduring thankfulness, and the role of good and bad memories is highlighted again with emphasis on gratitude. *Homework*: Clients write and present a letter of gratitude to someone they have never properly thanked.
7: Pleasure/engagement	***Mid-therapy Check*** Both Forgiveness and Gratitude homework are followed up. This typically takes more than one session. Importance of cultivation of positive emotions is discussed. Clients are encouraged to bring and discuss the effects of the Blessing Journal. Goals regarding using signature strengths are reviewed. The process and progress are discussed in detail. Clients' feedback toward therapeutic gains is elicited and discussed.
8: Meaning/engagement	***Satisficing Instead of Maximizing*** Satisficing (good enough) instead of maximizing in the context of the hedonic treadmill is discussed. Satisficing through engagement is encouraged instead of maximizing. *Homework:* Clients write ways to increase satisficing and devise a personal satisficing plan.
9: Pleasure	***Optimism and Hope*** Clients are guided to think of times when they lost out at something important, when a big plan collapsed, and when they were rejected by someone. Then clients are asked

	to consider that when one door closes, another one almost always opens. *Homework*: Clients identify three doors that closed and three doors that then opened.
10: Engagement/meaning	***Love and Attachment*** Active-constructive responding is discussed. Clients are invited to recognize signature strengths of a significant other. *Homework 1* (on-going): Active-constructive feedback—clients are coached on how to respond actively and constructively to positive events reported by others. *Homework 2*: Clients arrange a date that celebrates their signature strengths and those of their significant other.
11: Meaning	***Family Tree of Strengths*** Significance of recognizing the signature strengths of family members is discussed. *Homework*: Clients ask family members to take VIA-IS online and then draw a tree that includes signature strengths of all members of their family including children. A family gathering is to be arranged to discuss everyone's signature strengths.
12: Pleasure	***Savoring*** Savoring is introduced as awareness of pleasure and a deliberate attempt to make it last. The hedonic treadmill is reiterated as a possible threat to savoring and how to safeguard against it. *Homework*: Clients plan pleasurable activities and carry them out as planned. Specific savoring techniques are provided.
13: Meaning	***Gift of Time*** Regardless of their financial circumstances, clients have the power to give one of the greatest gifts of all, the gift of time. Ways of using signature strengths to offer the gift of time in serving something much larger than the self are discussed. *Homework*: Clients are to give the gift of time by doing something that requires a fair amount of time and whose creation calls on signature strengths—such as mentoring a child or doing community service.
14: Integration	***The Full Life***

	The concept of a full life that integrates pleasure, engagement, and meaning is discussed. Clients complete PPTI and other depression measures before the final session. Progress is reviewed, and gains and maintenance are discussed.

PPT: positive psychotherapy; PPTI: positive psychotherapy inventory; VIA-IS: values in action inventory of strengths

Appendix C: The Modified Differential Emotions Scale (mDES)

Fredrickson et al. (2003)

Instructions: please think back to how you have felt during the past 24 hours. Using the 0-4 scale below, indicate the greatest amount that you've experienced each of the following feelings.

	1 *Not at all*	2 *A little*	3 *Moderately*	4 *Quite a bit*	5 *Extremely*
What is the most **amused, fun-loving, or silly** you felt?					
What is the most **angry, irritated, or annoyed** you felt?					
What is the most **ashamed, humiliated, or disgraced** you felt?					
What is the most **awe, wonder, or amazement** you felt?					
What is the most **contemptuous, scornful, or disdainful** you felt?					
What is the most **disgust, distaste, or revulsion** you get?					
What is the most **embarrassed, self-conscious, or blushing** you felt?					
What is the most **grateful, appreciative, or thankful** you felt?					
What is the most **guilty, repentant, or blameworthy** you felt?					
What is the most **hate, distrust, or suspicion** you felt?					
What is the most **inspired, uplifted, or elevated** you felt?					
What is the most **interested, alert, or curious** you felt?					
What is the most **joyful, glad, or happy** you felt?					
What is the most **love, closeness, or trust** you felt?					
What is the most **proud, confident, or self-assured** you felt?					
What is the most **sad, downhearted, or unhappy** you felt?					
What is the most **scared, fearful, or afraid** you felt?					
What is the most **serene, content, or peaceful** you felt?					

What is the most **stressed, nervous, or overwhelmed** you felt?					
What is the most **hopeful, optimistic, or encouraged** you felt?					

Appendix D: The Positive Affect Negative Affect Schedule (the PANAS scale)

Watson et al. (1988)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent [INSERT APPROPRIATE TIME INSTRUCTIONS HERE]. Use the following scale to record your answers.

	1 *Very slightly or not at all*	2 *A little*	3 *Moderately*	4 *Quite a bit*	5 *Extremely*
Interested					
Distressed					
Excited					
Upset					
Strong					
Guilty					
Scared					
Hostile					
Enthusiastic					
Proud					
Irritable					
Alert					
Ashamed					
Inspired					
Nervous					
Determined					
Attentive					
Jittery					
Active					
Afraid					

Time instructions

Moment: you feel this way right now, that is, at the present moment
Today: you have felt this way today
Past few days: you have felt this way during the past few days
Week: you have felt this way during the past week
Past few weeks: you have felt this way during the past few weeks
Year: you have felt this way during the past year
General: you generally feel this way, that is, how you feel on the average

Appendix E: Positive and Negative Affect Scales

Mroczek and Kolarz (1998)

Directions: "During the past 30 days, how much of the time did you feel…"

	1 *None of the time*	2 *A little of the time*	3 *Some of the time*	4 *Most of the time*	5 *All of the time*
So sad nothing could cheer you up?					
Nervous?					
Restless or fidgety?					
Hopeless?					
That everything was an effort?					
Worthless?					
Cheerful?					
In good spirits?					
Calm and peaceful?					
Extremely happy?					
Satisfied?					
Full of life?					

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