How Hedonic and Contra-Hedonic Motivations to Experience Positive and Negative Emotions Predict Dysfunctional Emotion Regulation and Depressive Symptoms

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Statement of Authorship

The three studies within this PhD thesis document have been written and submitted for publication. For all three I am the primary author as I took the lead in formulating ideas, data collection, cleaning and analysing the data, and writing the final reports. Study 1 (Bloore, Jose, & Joshanloo, 2020) has been published by the *Open Journal of Depression*. Study 2 (Bloore, Jose, & Roseman, 2020) has been published by the *Personality and Individual Differences*. Study 3 has been submitted for review to *Journal of Social and Clinical Psychology*.

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Abstract

The ways in which people regulate their emotions is central to achieving wellbeing in our everyday lives. Typically it is assumed that everyone tries to experience the positive and avoid the negative, however research conducted over the last decade has demonstrated that not everyone is motivated to experience valenced emotions in this normative 'hedonic' fashion all of the time. Sometimes people hold and seek to satisfy 'contra-hedonic' motives, i.e., trying to experience negative emotions. To investigate the implications of holding one or the other type of motive, this thesis is composed of three studies that investigate the implications of holding these types of motives for emotions: 1) the first paper determined whether the motive to avoid happiness predicts depressive symptoms through the mechanism of lessened hope, 2) the second paper featured the development of a new measure designed to assess a broad range of motives for emotions, and 3) the third paper described the associations between this new measure with a commonly used emotion regulation measure.

The first research paper addresses the phenomenon that some individuals do not approach and seek to experience happiness in a normative fashion. Research on this so-called 'fear of happiness' or 'happiness aversion' tendency has identified about 10-15% of community samples as composed of individuals who report not wanting to experience happy mood states. Importantly these individuals repeatedly also report elevated levels of depressive symptoms. In this study, I sought to investigate the associations among happiness aversion, hope (a protective factor against negative mood states), and depressive symptoms. Evidence was found that hope functioned both as a mediator as well as a buffer between happiness aversion and resultant depressive symptoms in a concurrent sample of 588 undergraduate psychology students. Follow-up exploratory analysis with a small longitudinal sample suggested that the concurrent findings were replicated across time. Overall findings within

Study 1 suggested that interventions which promote hope can be effective in disrupting the relationship between happiness aversion and depressive symptoms.

Happiness aversion research, similar to Study 1 described above, has documented that some individuals are motivated to avoid experiencing happiness (this non-conventional approach is termed 'contra-hedonic'). I then asked: what about other emotions? Would it be feasible and interesting to assess how individuals try to experience and try to avoid experiencing a range of positive AND negative emotions? The second paper of this thesis describes the development of a new self-report measure, termed the General Emotion Regulation Measure (GERM), that assesses how people are motivated to experience or avoid experiencing clusters of positive and negative emotions in their everyday lives. This paper describes the literature concerning positive and negative emotion regulation motivations (both hedonic and contra-hedonic types) and shows how the new measure provides new information about people's emotion motives. Latent profile analysis (LPA) was implemented to explore individual differences in general emotion motives, and three different profiles of individuals were identified. In a sample of 833 undergraduate students, a LPA identified these distinct profiles: 1) a normative group in which people tried to experience positive emotions and tried to avoid experiencing negative emotions; 2) a non-normative group which exhibited an aversion to positive emotions and an attraction to negative emotions; and 3) another non-normative group which displayed an unwillingness or inability to regulate either positive or negative emotions. Comparisons of psychological wellbeing were computed among the three profiles using a MANOVA: it identified that the normative group reported higher levels of wellbeing (e.g., optimism) and lower levels of illbeing (e.g., depressive symptoms) compared to the other two groups. The new GERM measure highlights the general utility of these general emotion regulation motives, which, arguably, can be used to inform research on wellbeing across a wide range of psychological fields.

The final and concluding paper within this thesis examined whether the GERM is effective in predicting facets of the commonly used emotion dysregulation scale, the Difficulties in Emotion Regulation Scale (DERS). Further, emotion dysregulation was predicted to mediate the relationship between emotion motives identified by the GERM measure and depressive symptoms. Based on previous research, it was expected that the two contra-hedonic motives' relationships (trying to experience negative emotions and trying to avoid experiencing positive emotions) with depressive symptoms would be mediated by facets of emotion dysregulation. Findings demonstrated that two facets of emotion dysregulation, namely, lack of impulse control and lack of access to strategies, fully mediated the relationship between both contra-hedonic ER motives and depressive symptoms. The third paper demonstrated that contra-hedonic motives predict depressive outcomes through the use and instantiation of several different facets of emotion regulation difficulties. These results show that emotion motives are important in regards to setting the stage for maladaptive emotion regulation strategies and depressive symptoms.

The three studies' findings show that the ways in which we manage our emotions in our daily lives are guided and constrained by how individuals are motivated to experience positive and negative emotions. These studies highlight the importance that motivation has in directing individuals to choose particular ways to regulate their emotions, and these, in turn, have important effects for emotional wellbeing.

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‘Success is not final, failure is not fatal, it’s the courage to continue that counts’.

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General Introduction

How and why do people experience positive and negative emotions?

The motivations to try to experience positive emotions and to try to avoid experiencing negative emotions are innate, as these tendencies are observed in most animal species (Kringleback & Berridge, 2010) and they serve evolutionary goals. Consequently, it is a common assumption and widely accepted that humans generally and universally seek out pleasure and try to avoid pain. Trying to experience the positive and trying to avoid experiencing the negative have been prominent characteristics of the human species for millenia. The pursuit of pleasure and the avoidance of pain were referred to as the primary guide for all human conduct by the ancient Greek philosophers (Democritus, 460-370 B.C.; Aristippus 430-360 B.C.). Much later, at the dawn of psychology, James (1890) theorised about the reinforcement function pleasure has on behaviour and how pain conversely inhibits behaviour, making the approach-avoidance theory of emotion one of the earliest theories within psychological literature. The approach-avoidance distinction has been grounded in the observation of critical behavioural decisions, which are deemed to have conferred functional adaptiveness and promoted survival in our evolutionary history. This theory speculates that appetitive-searching and distress-avoiding behaviours are vital for all free-moving species to survive and reproduce. For instance, humans access food, seek comfort, and seek potential mating partners while avoiding danger, pain, and discomfort in order to enhance survivability (Baumeister, 2005; Grinde, 2016; Kringelbach & Berridge, 2010; Loonen & Ivanova, 2017).

Hedonic motivation states that an individual is motivated to avoid experiences of pain and motivated to experience pleasure. Thus, the classical motivational principle of all animals is that pleasure is approached and pain is avoided, and an animal's actions and behaviours reflect motivations to try to experience or avoid situations or agents in the environment that will likely cause pain or pleasure (e.g., hate, love, fear, jealousy, etc.). Prominent early work

in psychology, such as Thorndike's (1898) Law of Effect, reflects this view and laid the foundations for reinforcement theory in that it dictates that 'pleasure reinforces, whereas pain discourages behaviour'. His work involved a series of experiments on cats. A cat would be placed in a puzzle box and encouraged to escape in order to catch a scrap of fish outside the box. Eventually the cat would accidently press a lever which opened the cage. In successive trials, pressing the lever would consistently result in getting access to the fish, resulting in the cat adopting this behaviour. Consequently, the law of effect averred that "responses that produce a satisfying effect in a particular situation become more likely to occur again in that situation, and responses that produce a discomforting effect become less likely to occur again in that situation" (Gray, 2011, pp. 108-109).

Subsequent theories of motivation have influenced research on cognition, emotion, and behaviour for decades (Cacioppo & Berntson, 1994; Tooby & Cosmides, 1990). As conceptualized by Elliot (1999), approach motivation behaviour is instigated or influenced by a desire for a desirable event or outcome, whereas avoidance motivation behaviour is guided by an avoidance of an undesirable event or outcome. From an evolutionary psychology perspective, it is advantageous to the individual (and the human species broadly) to try to experience the positive and to try to avoid the negative (Grinde, 2016; Loonen & Ivanova, 2018). Indeed, since pleasure is often indicative of evolutionary advantageous behaviour (i.e., feeling satiated after a good meal) and pain is often indicative of evolutionary disadvantageous behaviour (e.g., suffering bruises and cuts in a fall), it makes evolutionary sense that individuals would engage in behaviours that enhance their survival and avoid those which do not.

The importance of happiness

Within Western society today there has been an increasing amount of research on the topic of how much one can improve one's own subjective happiness (Ray, 2020). Over the last few years, in particular, with youth suicide rates rising rapidly, identifying methods to improve mental health has been of paramount importance (WHO, 2020). Happiness and positive emotions predict a range of desirable life outcomes for individuals. For instance, Fredrickson's (2004) 'broaden and build theory' postulates that positive emotions enable individuals to build lasting personal resources (i.e., patience) and skills (i.e., mindfulness), which, in turn, enable the individuals to be happy and successful. It suggests that positive emotions, for instance positive emotions such as joy, encourage a range of adaptive behaviours, such as a desire to explore. Not only do positive emotions broaden the thought-action repertoire, they additionally promote the discovery of innovative actions, ideas and social bonds which can be drawn upon to improve the odds of adaptive coping and survival.

It is perhaps no surprise, then, that many individuals regard positive emotions as one of the most, if not the most, important goal in their lives (Joshanloo & Weijers, 2013). In addition, various forms of wellbeing, such as self-realization and happiness, have an impact not only on our mental health but our overall physical health as well (Ryff, Singer, & Love, 2004). Indeed, those individuals who have demonstrated an ability to savour (i.e., enhance and amplify) positive emotions and experience more happiness report better overall mood than those who do not (Jose, Lim, & Bryant, 2012).

Happiness and Happiness aversion

Striving for individual happiness during everyday experience, as aforementioned, is a well-documented and normative aspiration in modern day Western life (Rubin & Rubin, 2009). However, in recent years, investigation into the ways that individuals experience positive emotions has brought to light important and vital individual differences, and the findings have raised questions surrounding the assumption that all humans try to seek out and

maximise the positive emotion of happiness. Bloore, Jose, and Joshanloo (2020) and others have identified an individual difference in that, in fact, some individuals do not seem to perceive happiness as the most important or paramount goal and may actually try to avoid experiencing happy states.

Although defined recently as 'the fear of happiness' (Joshanloo, 2013) or 'happiness aversion', previous evidence of aversion to positive emotions has been recorded. For instance, Pflug (2009) found in a qualitative study that some German students tended to report that extreme levels of happiness would eventually result in sadness, when responding to open-ended questions about positive emotions. Furthermore it has been highlighted that some individuals express concerns about an inability to control positive emotions and are therefore frightened to experience them, or proactively just feel more comfortable avoiding happiness (Melka, Lancaster, Bryant, Rodriguez, & Weston, 2011). This counterintuitive way of viewing positive emotions suggests that there are important individual differences that concern how people regulate and manage positive emotions in their daily lives, which needs to be understood when studying the human mind in regards to positive wellbeing.

Other research that is of direct relevance to happiness aversion is found within the literature on emotion regulation. As previously mentioned, research shows that an individual who savours positive experiences is likely to prosper by living a happier and more satisfying life (Bryant, 2003). Wood et al. (2003) have argued that there are two distinct opposing types of savouring in which an individual engages. These are labelled 'amplifying' and 'dampening' savouring responses (Wood et al., 2003; Jose et al., 2012). Dampening savouring cognitions include a savouring response identified as 'kill-joy thinking' which involves limiting or inhibiting the effect of positive emotions and directing the focus away from positive experience (Goodhall, 2014; Jose, Lim, & Bryant, 2012; Quoidbach et al., 2010). These individuals actively inhibit positive experiences, and it could be argued that

these people neutralise enjoyment because they are afraid of letting themselves feel happiness. Similarly, items within the fear of happiness scale seem to endorse kill-joy thinking as they capture beliefs such as, 'I prefer not to be too joyful, because usually joy is followed by sadness' (Joshanloo, 2013).

Happiness aversion may be grounded in the yin-and-yang world-view that subsequent misfortune and experiencing unhappiness after a happy event is necessary in order to achieve equilibrium in the world (Joshanloo, 2014). Consequently a key explanation for why individuals may be adverse to happiness is the way in which different attitudes to happiness have been taught and inculcated within different cultural settings. It has been observed that, in an East Asian cultural context, individuals tend to adopt a dialectical thinking style (Joshanloo et al., 2013), a style that embodies the following three principles (Peng & Nesbett, 1999): 1) Reality is constantly changing and is never static, suggesting that happiness and increased positive emotion is a temporary state and elevated levels of happiness cannot be sustained for long periods of time; 2) The principle of contradiction which posits that reality is replete with simultaneously occurring contradictions, for instance, negative events may coincide with positive emotions; and 3) The final principle is that of holism, which is that everything is interconnected and there are no isolated entities, therefore positive emotions may be connected to later negative emotions (Spencer, Rogers et al., 2010). Joshanloo and Wejiers (2014) considered the dynamic of happiness aversion, and the reasons why individuals may be 'afraid of happiness', in an extensive literature review. They noted that the pursuit of individual happiness in non-Western cultures is not as prioritised as collective happiness, i.e., trying to enhance the collective happiness of the social groups within which we live and work. Seeking happiness for oneself could conflict with internalised cultural beliefs that being happy alone is sinful (Joshanloo et al., 2014; Mesquita & Albert, 2007).

As a consequence of these observations, Joshanloo (2013) created a 5-item self-report questionnaire to measure happiness aversion and it has been tested across both Western and non-Western cultures for comparison. Fourteen different nationalities were included within the dataset and psychometric examinations of the scores were made across cultures (Joshanloo et al., 2013). Although happiness aversion was more prevalent in non-Western cultures, a relatively high amount of happiness aversion was noted amongst participants from a Western society (i.e., a New Zealand sample). This interesting result indicates that happiness aversion is not restricted to individuals from non-Western populations. Indeed, a similar happiness aversion scale created by Gilbert et al. (2012) and tested in the U.K. yielded empirical evidence fears or aversive attitudes to experiencing positive emotion were not rare in this other Western setting.

Gilbert et al.'s (2012) data also identified an important correlate of happiness aversion, namely depressive symptoms. Their finding suggests that those individuals who harbour happiness aversion beliefs (namely trying to avoid experiencing positive emotions) may have difficulties in regulating mood states. Although limited studies by Joshanloo (2014; 2013) demonstrated that happiness aversion is associated with lower life satisfaction and subjective wellbeing. Moreover, a link has been found between the fear of happiness and neuroticism, a personality trait that is strongly related to anxiety and depression (Royner & Casten, 2001; Yildirim & Belem, 2018). Due to the association that happiness aversion has with a number of maladaptive traits, investigations into how happiness aversion predicts maladaptive mood outcomes are important in order to understand the bigger picture concerning normative and non-normative emotional motives in trying to experience positive emotions. It is also important to consider what psychological factors may contribute to a reduction in happiness aversion and whether there are protective factors that can explain the

relationship between happiness aversion and maladaptive occurrences like depressive symptoms (Gilbert et al., 2012).

Is approach and avoidance exclusive to happiness? How individuals experience a range of both positive and negative emotions

As noted above, research has documented that individuals can be adverse to experiencing positive emotions like happiness. However, what about negative emotions? In a theoretically related vein, a recent meta-analytic review of research (Winer & Salem, 2016) involving the dot-probe paradigm (a method used to assess selective attention to threatening stimuli in depressed and anxious individuals) concluded that the avoidance of positive information by some depressed individuals is a robust effect and must be explored and considered in future empirical research. Similarly, research has demonstrated that depressed people show greater attention to images of a sad face (Fu et al., 2004), highlighting that depressed individuals tend to be more fixated on displays of negative emotion rather than positive emotion. In particular, when presenting sad faces to diagnosed depressed patients compared to normal controls, depressed individuals took longer to disengage from negative stimuli (sad faces) and faster to disengage from positive stimuli (happy faces). Conversely, non-depressed individuals took more time to disengage from positive stimuli than from either neutral or sad stimuli, indicating individual differences exist with regard to quick (and likely unconscious) regulation of negative affect (Sloan, Strauss, & Winser, 2001). These findings provide support for the view that significant and interesting individual differences in the ways in which individuals approach and avoid positive and negative emotions deserve more attention and study. Emerging research has unearthed intriguing evidence that some individuals seem to regulate positive and negative emotions in a normative fashion, whereas some other individuals seem to regulate positive and negative emotions in a counter-intuitive

and non-normative fashion. Research is needed on these motivations and what impact they have on emotion regulation strategies and general mental wellbeing, and the present suite of studies included in this thesis were conducted in order to directly meet that need.

Emotion motivation and wellbeing

Emotions are central to our social reasoning and subsequent social behaviour in everyday life (Damasio, 1994; Ekman & Davidson, 1994). Emotional responses are based on subjective appraisals (interpretations of the meaning and personal significance of an event), and emotion-specific goals (such as trying to get out of danger when feeling fear or seeking recognition when feeling pride) are suggested to significantly guide behaviour when feeling an emotion (Roseman, 2013), i.e., 'emotion motives'. However, humans do not mindlessly act on the basis of their emotions, rather, their awareness of their emotional states in conjunction with enduring goals provides guidelines or parameters within which the person acts. Emotion is motivated (Tamir et al., 2020), but little is known about how individuals are motivated to experience positive and negative emotions. Research has demonstrated that some individuals hold adverse beliefs to being happy, and these beliefs, for these people, seem to be positively related to negative outcomes such as low life satisfaction and depression. The question that occurred to me was 'what about other positive emotions such as optimism and hope?' Further, given that research has demonstrated that some individuals are drawn to negative stimuli, which tend to elicit negative emotions (Fu et al., 2004), what about emotion motivations to try to experience negative emotions? To date, there is little research on this set of broad questions. In order to investigate both hedonic (approaching positive emotions and avoiding negative emotions) and contra-hedonic motives (approaching negative emotions and avoiding positive emotions) towards large numbers of positive and negative emotions, a measure needed to be created. This thesis describes in Study 2 the creation and development of what we called the 'General Emotion Regulation Measure' (GERM), a self-

report measure that aims to assess these four basic emotion motives so that we can begin to understand how an individual's emotion motives influence behaviour and psychological wellbeing.

One of the constructs that we were interested in using the GERM measure to predict was emotion regulation (ER) strategy choice. Emotion regulation is defined as a process by which individuals try to control what emotions they experience and how they express them. Emotion regulation results in changes of speed, dynamics, and duration of emotion experiences and expressions as well as the behavioural, physiological and experiential consequences of an emotion (Gross, 2014, 2015a, 2015b). However, various ER strategies turn out to be more or less adaptive in the real world. Difficulties in emotion regulation have over the last decade been demonstrated to show a strong link with maladaptive outcomes (Aldao et al., 2014; Gross & Munoz, 1995; Hofmann et al., 2012; Visted et al., 2018). On the other side, adaptive ER strategies (e.g., acceptance and positive refocusing) accrue benefits for individuals who use them (Van Beveran, Harding, Beyers & Braet, 2018). It is likely that GERM motivations to avoid experiencing or to try to experience positive and negative emotions would predict how people choose to regulate their emotions. This topic has not drawn much theoretical or research attention, so work needs to be conducted to explore how emotion motivations predict specific emotion regulation strategies. In this thesis I report a study (Study 3) which focused on the ability of the GERM to predict use of a range of dysfunctional ER strategies tapped by the DERS scale (Dysfunctional Emotion Regulation Scale).

List of the three studies

Below are short synopses of the three studies that constitute the body of the thesis. They address, in turn, the following questions:

1) Does happiness aversion predict increased depressive symptoms, and is this relationship at least partially explained by the mediator of loss of hope?

2) Are there significant individual differences in people's profiles of emotion motives (trying to experience and trying to avoid experiencing positive and negative emotions)? Do these profiles predict mood outcomes (e.g., depressive symptoms) in expected ways?

3) Do emotion motives predict selection and use of dysfunctional emotion regulation strategies in expected ways?

Study 1

In this study I investigated how a particular emotion motive, namely happiness aversion, predicts depressive symptoms. Based on the framework provided by Joshanloo (2014), this paper contributes additional illumination to the happiness aversion literature. Specifically we sought to first document whether happiness aversion is a significant positive predictor of depressive symptoms, and second, we sought to examine whether the potential protective buffer of hope plays a role in this relationship (Gilbert et al., 2012). We examined this relationship initially with a concurrent dataset, and then we attempted to replicate those results with a small longitudinal sample. Hope was found to not only moderate but also to mediate the relationship between happiness aversion and depressive symptoms, both concurrently and over time, suggesting that this protective factor is worth considering in future therapy. Implications of these findings are discussed.

Study 2

The results of Study 1 and theoretical accounts of emotion regulation (Tamir et al., 2020) led us to consider whether it would be feasible to broaden the idea of happiness aversion to clusters of both positive and negative emotions. Study 1 suggested that the contra-hedonic emotion motive of happiness aversion is predictive of negative mood outcomes, e.g., depressive symptoms. Presumably people might hold emotion motives (both approaching and

avoiding) for the broad cluster of positive emotions, including emotion items such as pride, love, and contentment. Further, it is possible that similar motives might be held for the broad cluster of negative emotions, including emotion items such as disappointment, anger, and frustration. The second study reports the developmental process of creating the GERM scale as a measure that could be used to investigate these hedonic and contra-hedonic motives towards positive and negative emotions. The Study 2 report encompasses the development, administration, and scoring of the measure, including how emotion items were selected based on theory (Roseman, 2010). Following this phase, a latent profile analysis was conducted in order to assess latent groupings and observed patterns of scores, which would be indicative of individual differences. MANOVA analysis revealed that those individuals holding motivations to experience negative emotions and to avoid experiencing positive emotions were significantly more likely to report maladaptive outcomes such as anxiety and depressive symptoms.

Study 3

The ways in which people are motivated to experience emotions are likely to have an impact on which emotion regulation strategies they select and use (Tamir, 2020). Based on the previous findings of the first two studies, it made theoretical sense to determine whether the GERM would predict scores on measures of emotion regulation. The Difficulties in Emotion Regulation Questionnaire (DERS, Gratz and Roemer, 2004) is a well-established and widely implemented measure that assesses several facets of emotion regulation dysfunction. As emotion regulation difficulties have been shown to be predictive of depressive symptoms, and contra-hedonic motives are also associated with maladaptive outcomes including depressive symptoms, it was deemed likely that emotion regulation strategies would mediate the relationship between the contra-hedonic GERM motives and depressive symptoms. Study 3 reports our investigation of these relationships, further

contributing to the fear of happiness, GERM, and emotion regulation literature. It was found that difficulties in impulsivity, lack of clarity and lack of access to effective emotion regulation strategies mediated the relationship between the two contra-hedonic GERM motives and depressive symptoms.

STUDY 1. Does hope mediate and moderate the relationship between happiness aversion and depressive symptoms? [Published in the Open Journal of Depression]

Abstract

The literature is beginning to document how and for whom ‘fear of happiness’ (happiness aversion, i.e., the expectation that being happy can have negative consequences) is predictive of psychological outcomes. We sought to determine whether hope, an important protective factor against depressive symptoms, might mediate and moderate the relationship between happiness aversion and depression. In a dataset of 588 undergraduate psychology students, evidence was found that hope functioned as a mediator as well as a buffer in the relationship between happiness aversion and depression. In addition, exploratory analysis of a small longitudinal dataset (N = 74) suggested that hope also played the same roles in the relationship between fear of happiness and depression over time. These findings suggest that interventions that create hope can be effective in disrupting the relationship between happiness aversion and depressive symptoms.

Keywords: hope, depression, happiness aversion, depressive symptoms, mediation, moderation.

Does Hope Mediate and Moderate the Relationship between Happiness Aversion and Depressive Symptoms?

The search for happiness seems to be a fundamental goal of human beings, with Aristotle arguing in 350 BC that happiness is a central component in the meaning and purpose of life (*Nicomachean Ethics* 2004). Two millenia later, it seems that most individuals continue to desire to obtain happiness, and in capitalistic countries this urge is often manifested as a desire to engage in higher levels of consumption in order to increase personal levels of happiness (Jansson-Boyd 2010). Self-help books designed to facilitate and aid in the search for happiness are readily available for purchase (Chernoff and Chernoff 2018). Happiness is regarded by many people as one, if not the most, basic goal of existence (Layard 2011), and to that end many individuals strive for happiness in their everyday experiences (Joshanloo 2013a).

Happiness is nearly always identified as one of the most important values in an individual's life, with most people around the globe expressing that they want to experience more happiness (Diener 2000; Layard 2011). There is also a wide-spread perception that individuals are accountable for their own individual levels of happiness (Benjamin and Heffetz 2012; Rubin 2009). As a consequence, those individuals who experience difficulty in feeling happy are at risk of believing that there must something wrong with them, fuelling feelings of inadequacy and depression (Gilbert et al 2012). Although some people try to achieve a constant mood of happiness, some people believe that a state of continuous happiness is undesirable or unachievable (Joshanloo and Weijers 2014). Seeking a consistent level of high positive affect and low negative affect seems to be somewhat unrealistic, however the degree to which people strive for increased happiness indicates that the desire to obtain this unrealistic sense of well-being is prominent within Western society (Hoewitz and Wakefield 2007).

Happiness Aversion

In contrast to this wide-spread attraction to happiness, over the last few years it has been noted that not all individuals strive for high levels of subjective happiness, and, in fact, some people may seek to avoid happy mood states (Agbo and Ngwu 2017; Joshanloo 2018). The presumed innate drive for hedonic pleasure is now being questioned by research that demonstrates that individuals may not always seek out positive emotions, and in some instances may avoid individual happiness (Joshanloo 2018). In an extensive literature review, Joshanloo and Weijers (2014) have highlighted how some individuals believe that happiness eventually will result in negative mood states such as sadness, suffering, or even early mortality. They noted that the reluctance towards seeking individual happiness could also be due to internal beliefs that being happy is sinful or unnecessary, particularly in non-Western cultures where collective happiness is more sought after than individual happiness (Joshanloo et al. 2014). An example of this happiness aversion stance could be the observed 'taboo on pleasure' that Arieti and Bemporad (1980) have previously documented, describing depressed individuals' tendency to associate positive emotions with negative outcomes. Indeed researchers have previously noted that major depressive disorder sufferers often report an inability to derive pleasure from previous pleasurable pursuits (Dichter 2010).

As a consequence, a small, but growing segment of the literature has been produced on the topic of 'fear of happiness', as it is sometimes termed. The term 'fear of happiness' is usually operationally defined as an *aversion to happiness* due to the belief that happiness may cause something bad to happen (Joshanloo 2013). Joshanloo (2013) has created and tested a 5-item self-report scale designed to measure happiness aversion. The scale has been examined cross-culturally with data collected from 14 different nationalities and although happiness aversion was demonstrated to be more prevalent in non-Western cultures, a substantial number of people residing within Western cultures (e.g., New Zealand, the site of the present study) also report relatively high levels as well. In addition, Gilbert and

colleagues (2012) have created a 9-item happiness aversion scale that captures various motives for avoiding happiness as well.

Investigations into the validity of happiness aversion measures and their correlates are necessary as the scores from these scales have been documented to show a positive association with depression (Gilbert et al. 2012). Several other studies have also shown that individuals reporting high levels of happiness aversion reported lower subjective well-being and satisfaction with life (Joshanloo 2013; Joshanloo et al. 2014). Moreover, happiness aversion has been positively linked to neuroticism, a personality trait that is strongly associated with depression and anxiety (Rovner and Casten 2001). What is unknown at present is the effect that other psychological dynamics may play in mediating and moderating the strength of the demonstrated relationship between happiness aversion and negative outcomes such as depression. Thus, in the present study we sought to test whether hope might function as a mediator between happiness aversion and depression, and we also sought to determine whether hope might moderate (i.e., buffer) the relationship between happiness aversion and depression.

The Relationships among Hope, Depression, and Happiness Aversion

Literature argues and shows that positive human strengths such as courage, hope and optimism have a diminishing influence on psychological disorders (Seligman and Csikzentmihalyi 2000; Peterson 2000). Hope, especially, has been identified as a positive trait that can contribute to happiness, health and perseverance (Peterson 2000). The construct of hope is consistently identified as an important facet of psychological well-being and has elicited considerable attention from scholars (e.g., Mathew, Dunning, Coats, and Whelan 2014). Individuals who report high levels of hope have been shown to experience fewer depressive symptoms during times of stress (Arnau, Rosen, Finch, Rhudy, and Fortunato 2007). Snyder (2000) has defined hope as a positive motivational state that is founded on a

sense of successful goal-directed behaviour whereby an individual is confident in his or her ability to implement plans to accomplish his or her goals (agency) and in finding alternative ways to accomplish them (pathways). Hope is known to play a protective role against acquiring depressive thoughts, attitudes, and mood states, and a negative relationship between hope and depression is consistently reported (Feldman and Snyder 2005). Hope has not only been identified as being negatively related to general maladjustment and suicidal thoughts, it has additionally been directly (negatively) linked to depression (Chang and Sanna 2003; Du, King and Chu 2016).

Protective characteristics such as hope have been shown to moderate relationships between maladaptive factors and depression. For instance, hope has been demonstrated to attenuate the relationship between negative life events and greater levels of depressive symptoms (Visser, Loess, Jeglic, and Hirsch 2013). In a similar vein, Gieger and Kwon (2010) found evidence for hope moderating the relationship between rumination and depression. Hope was a significant moderator for both brooding and reflecting subtypes of rumination, further highlighting the protective nature of hope in regards to depression.

The relationship between hope and depression has additionally been previously explored in mediation analysis, whereby hope was shown to have both direct and indirect negative effects on depressive symptoms (Chang and Sanna 2003). In particular, Hopelessness Theory, a prominent theory in the depression literature, posits that lack of hope is associated with greater depression (Abramson, Metalsky, and Alloy 1989). Accordingly we suggest that happiness aversion is likely to be negatively associated with low levels of hope, because when positive emotions and happiness that accompany and predict desired life outcomes are devalued, a person's aspirations to engage in activities will likely be diminished. This prediction is compatible with theories such as subjective utility theory (Quiggin, 1982) and expectancy-value theory (Wigfield and Eccles 2000) in that these

theories posit that the strength of people's motivational commitment to life choices depends in part on their expectations of the likelihood that positive hedonic outcomes will be experienced (Higgins 2011).

Although not explicitly documented, prior empirical research suggests that happiness aversion is likely to be associated with lower levels of hope, for example, Joshanloo et al. (2015) have documented that happiness aversion was negatively correlated with a person's purposeful involvement in the process of personal growth. They also found that happiness aversion was correlated with fate control (i.e., happiness aversion was associated with beliefs that important outcomes in life are fated, unpredictable, and unalterable). These findings highlight hope as a protective factor against depression and suggest that individuals who report high levels of hope may report lower levels of depressive mood states. In sum, we predicted that happiness aversion would be negatively predictive of hope, and hope, in turn, would be negatively predictive of depressive symptoms, consistent with a mediational relationship.

Aims and Hypotheses

The main goal of the current research was to discover new information about the relationships among happiness aversion, hope, and depressive symptoms, and determine whether hope plays a buffering and/or mediating role in the relationship between the fear of happiness and depression. The mediation hypothesis tests whether happiness aversion predicts higher depressive symptoms through the mechanism of lowered hope, and the moderation hypothesis examines the possibility that the relationship between happiness aversion and depressive symptoms might be attenuated for individuals who report high levels of hope (for an example of side-by-side mediation and moderation analyses of a single dataset see Jose and Huntsinger 2005).

Our first prediction was that happiness aversion would negatively predict hope, and hope, in turn, would negatively predict depressive symptoms. The second hypothesis was that hope would function as a buffer of the relationship between happiness aversion and depressive symptoms. Additional to these cross-sectional analyses, we posed a research question as to the nature of relationships between happiness aversion and hope across time with a small exploratory two-wave longitudinal sample (N = 74). We sought to obtain preliminary evidence that the posed mediation and moderation hypotheses would be supported with longitudinal data.

Method

Participants

Individuals were recruited from a mid-sized university in New Zealand as part of a data collection exercise within an undergraduate Psychology course. The only inclusion criterion was being a student in the course, and no one was excluded from participating. In order to test our hypotheses, data were obtained from two courses (collected three months apart). In Dataset 1, a total of 337 undergraduate psychology students who were enrolled in a required 200-level methods course were invited to complete a survey measuring a range of topics such as personality, positive and negative mood states, and interpersonal styles. The sample consisted of 80 males and 257 females, which is a typical gender ratio among undergraduate psychology majors but not typical of undergraduate students. Age was sampled within age-bands in order to enable anonymity (the dataset was made available to the class for practice in data analysis). Due to ethical reasons (i.e., the dataset was made available to all students in the class) we avoided collecting personally identifying demographic information, and thus age was reported in bands. The sample was composed of 178 18-19 year-olds, 127 20-25-year-olds, 16 26-30-year-olds, and 19 individuals were older than 30 years. The large majority of participants identified as European New Zealander

(about 90%), and small numbers of Maori, Pacific Islander, and Asian New Zealanders were included as well. European New Zealanders were overrepresented compared to New Zealand census frequencies, although the percentage was typical for tertiary students in New Zealand. In Dataset 2, 249 undergraduate psychology students enrolled in a compulsory 300-Level methods course completed the same survey. The sample included a total of 55 males and 191 females (3 did not provide gender information); 107 18-19 year-olds, 101 20-25-year-olds, 36 26-30-year-olds, and 5 individuals were older than 30 years. Since these two datasets were very similar, we combined them into a single cross-sectional dataset in order to make analyses simpler.

Since a few students who take the first course go on to take the second course in the second term of the same year, we linked the datasets and found that 74 individuals had completed the survey at both time points, enabling us to test an exploratory research question with a small longitudinal sample in addition to the two concurrent datasets. The size of the concurrent dataset afforded the assessment of medium effect sizes, whereas the size of the longitudinal sample would allow identification of a large effect size (f^2s > .15 and .35 respectively, Cohen 1992). Ethical approval was granted by the sponsoring university, participation was voluntary, and signed informed consent was collected from all participants.

Measures and procedure

Depressive symptoms. In order to assess levels of depressive symptoms, a shortened version of The Centre for Epidemiological Studies Depression scale (CES-D; Radloff 1977) was administrated to participants. Although the original scale consists of 20 items, due to space and time limitations, 9 highly loading items were used in the present case. Participants were presented with items such as “I got upset by things that don’t usually upset me” and “I could not stop feeling bad, even when others tried to cheer me up”. Participants indicated on a 4-point Likert scale how often (in the last week) they experienced the particular mood state.

Responses ranged from *Less than one day* (1) to *5-7 days* (4). The scale has previously demonstrated good internal reliability, with Cronbach's alphas typically reported from .85 to .90 (e.g., Al-Modallal, Abuidhail, Sowan, and Al-Rawashdeh 2010). The concurrent dataset also yielded a Cronbach's alpha within that range, namely .88.

Happiness aversion. To measure happiness aversion, a recently developed 5-item 'fear of happiness' scale (FHS; Joshanloo 2013) was administrated to participants. Items address the central concept of the fear of happiness, which is the belief that happiness or positive events should be avoided because they can sometimes lead to negative emotions or events. Two sample items are: "I prefer not to be too joyful because usually joy is followed by sadness," and "Excessive joy has some bad consequences." Each item is rated on a 7-point Likert scale ranging from *strongly agree* (1) to *strongly disagree* (7). This scale has yielded good internal reliability and demonstrated good validity in previous literature (Joshanloo 2013). The concurrent dataset yielded a Cronbach's alpha of .88. For the longitudinal data, a Cronbach's alpha of .90 was obtained for the Fear of happiness scale at both time points.

Hope. A shortened version of The Adult Hope Scale (AHS) that included 8 items based on the original 12 items was administrated to participants to assess levels of hope (Snyder 1991). Examples of items are: "I energetically pursue my goals" and "There are lots of ways around any problem". Participants respond to each item within the scale by using a 4-point Likert scale ranging from *definitely false* (1) to *definitely true* (4). Previous research has reported good reliability and validity for the AHS (Snyder 2000). In the current study, the Cronbach's alpha for the concurrent dataset was .87. For the longitudinal dataset, a Cronbach's alpha of .89 was obtained at Time 1 and .90 at Time 2.

Analytic Procedures

Missing values constituted less than 1% of the dataset and Little's test for MCAR demonstrated that they were missing completely at random. Expectation-Maximization (EM) imputation (Lin 2010) on this small amount of missing data was conducted to maximise power. As these datasets were collected around three months apart from samples that were similar, they were combined before concurrent analyses took place. The total concurrent dataset included 588 individuals.

The first step in the mediation and moderation analysis was to test the nature of the basic relationship between the independent variable of happiness aversion and the dependent variable of depressive symptoms (for a description of this method, see Jose 2013a). For the mediation analysis, we then interposed hope between the IV and the DV to determine whether significant mediation could be obtained. For the moderation analysis, we performed the standard moderation analysis (Jose 2013a), and then examined simple slopes to examine how different levels of hope yielded different slopes in the relationship between happiness aversion and depression. And last, we conducted both a longitudinal mediation and a longitudinal moderation (Jose 2013a) using the longitudinal dataset to provide elucidation for the research question.

Results

Descriptive Statistics

Presented in Table 1 are the means and standard deviations for the combined dataset. Consistent with the literature, happiness aversion demonstrated a moderate positive correlation with depression. Also consistent with expectations, moderate negative associations were found between hope and the other two measures.

Table 1. *The Bivariate Correlations and Descriptive Statistics for Happiness Aversion, Hope, and Depression in the Concurrent Dataset*

	Hap Aversion	Hope	Depression	Means and SDs
Hap Aversion	-			2.38 (1.23)
Hope	-.39***	-		3.04 (.67)
Depression	.37***	-.41***	-	1.90 (.67)

Note: Hap Aversion = Happiness Aversion. $p < .05$; $^{**}p < .01$; $^{***}p < .001$. N = 588.

Concurrent Mediation: Did Hope Mediate the Relationship between Happiness Aversion and Depression?

Using AMOS (Arbuckle 2013), a path model was constructed whereby the exogenous variable was the happiness aversion variable, hope was the mediating variable, and depression was the dependent variable. The *a* path was the relationship from happiness aversion to hope, and the *b* path was the relationship from hope to depression. Our hypothesis stipulated that the basic relationship between happiness aversion and depression would be mediated by hope. This proposal was tested with a bootstrapped mediation analysis. The size of the indirect effect was estimated with a 95% bias-corrected confidence interval computed on the basis of 5,000 bootstrapped iterations. Evidence was found to support the hypothesised mediation relationship, $a*b = .09$, $se = .001$, 95% CI = [.060, .122], $p < .001$. The statistically significant indirect effect, consistent with Hypothesis 1, suggests that happiness aversion predicted a diminishment of hope, which, in turn, predicted higher levels of depression. In other words, fear of happiness predicted higher depression through the mechanism of lower levels of hope.

Concurrent Moderation Analysis: Did Hope Moderate the Relationship between Happiness Aversion and Depression?

A moderation analysis was performed whereby the independent variable was happiness aversion, hope was the moderating variable, and depressive symptoms was the dependent variable. A hierarchical regression was computed with three steps. In the first step, the covariates of gender and age were entered. Aversion to happiness and hope were included in the second step, followed by the interaction term between happiness aversion and hope entered on the third step. In the case of significant moderation, the results are graphed and simple slopes are examined to determine how the moderator influenced the basic relationship.

On the first step, we determined that neither age nor gender significantly predicted depressive symptoms, *p*s = .65 and .48 respectively (R^2ch = .002, p = .72). On the second step, both happiness aversion (β = .25, p < .001) and hope (β= -.31, p < .001) significantly predicted depressive symptoms (R^2ch = .22, p < .001). As expected, happiness aversion positively predicted, and hope negatively predicted, levels of depressive symptoms.

And finally, the interaction term was found to be a significant predictor on the third step, β = -.57, p = .003, R^2ch = .012. In order to interpret this result, we graphed the result with ModGraph (Jose 2013b), and the result is depicted in Figure 1. The figure shows, that consistent with Hypothesis 2, hope functioned as a buffer of the happiness aversion to depression relationship. Although simple slopes analyses indicated that all slopes were significant at p < .001, the flattest slope was generated by the high hope group, signifying the

presence of a buffer (Jose 2013a).

Figure 1. Graphical depiction of the moderating effect of hope on the relationship between happiness aversion and depression with the concurrent dataset.

Exploratory Analyses with the Longitudinal Dataset

In order to investigate in an exploratory fashion whether the two significant findings with the concurrent dataset could be extended to the longitudinal context, we explored our research question: would we find a significant longitudinal mediation and a significant longitudinal moderation in our small longitudinal sample?

Longitudinal mediation. We first investigated the ability of hope to mediate the influence of fear of happiness on depression over time with a bootstrapped two-wave longitudinal mediation analysis (Jose 2013a) (see Figure 2; for descriptive statistics, see Table 2). This exploratory analysis was performed because mediation results with concurrent datasets are not always replicated in longitudinal datasets (Jose 2013a, 2016; Maxwell and

Cole 2007). Despite the small sample size of the current longitudinal dataset, statistical evidence supported the concurrent mediation finding, namely that hope would function as a mediator longitudinally, *a*b* = .023, *se* = .016, 95% CI = [.001, .070], *p* = .039, indirect/total effect size = 27%. This exploratory analysis provided tentative evidence that the concurrent mediation result could be confirmed within a longitudinal context.

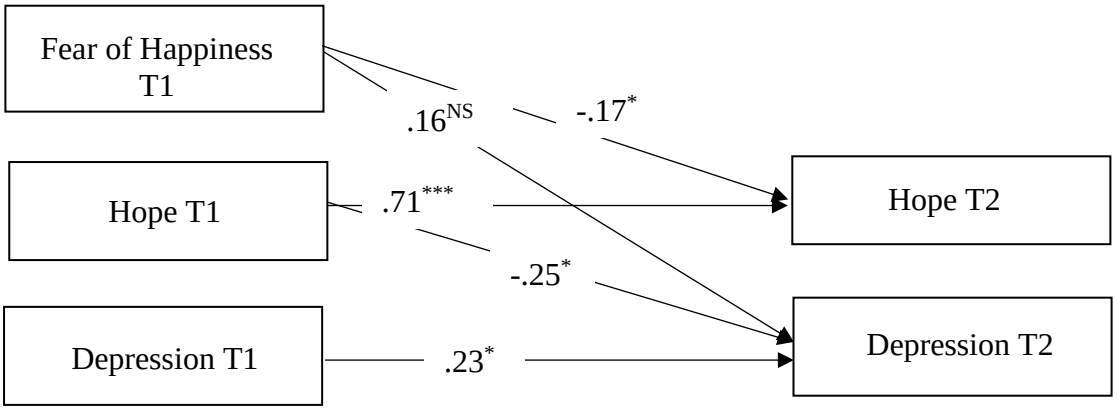

Figure 2. Longitudinal mediation of hope between happiness aversion T1 to depression T2.

Note. **p* < .05; *p* < .001. Numerical values are standardized regression coefficients. Not depicted to ease comprehension are covariances among the three exogeneous variables and between the error terms of the two endogenous variables.

Longitudinal moderation. We next investigated the ability of hope to moderate the influence of fear of happiness on depression over time with a two-wave longitudinal moderation analysis (Jose 2013a) (see Figure 3). Although not frequently performed, "the point of doing this type of analysis is that one can see whether the IV and ModV separately and together predict change in a DV" (Jose 2013a, p. 211). The statistical analysis yielded a statistically significant longitudinal moderation term, β = -1.25, R^2ch = .06, *p* = .017. The result was graphed with ModGraph (see Figure 4) and the simple slopes analysis showed that

the only significant slope was manifested by individuals reporting low levels of hope (SS = .20, p = 036. Thus, the finding obtained with a longitudinal moderation result was consistent with the concurrent moderation result. Although both analyses showed that hope buffered the happiness aversion to depressive symptoms relationship, the latter finding provided tentative evidence that hope buffered the prediction by happiness aversion of depressive symptoms over time

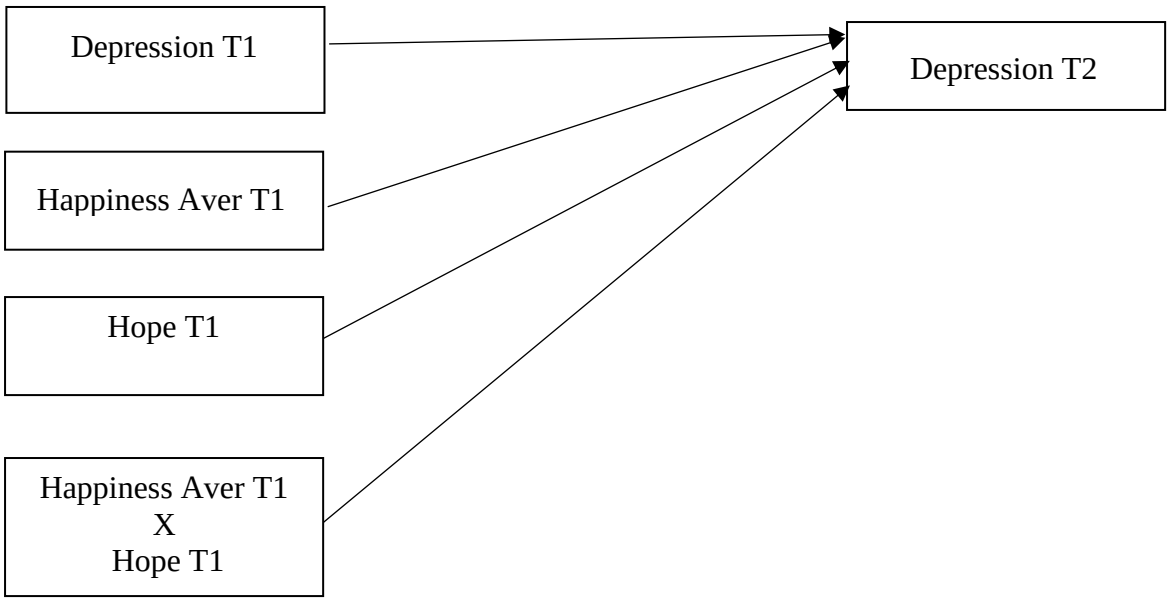

Figure 3. Model depicting longitudinal moderation of hope of the happiness aversion T1 to depression T2 relationship.

Table 2.

The Bivariate Correlations and Descriptive Statistics for Happiness Aversion, Hope, and Depression at Times 1 and 2 in the Longitudinal Sample

	Happiness Aver T2	Hope T1	Hope T2	Depression T1	Depression T2	Mean (SD)
Happiness Aver T1	.65***	-.42***	-.47***	.36**	.34**	2.45 (1.33)
Happiness Aver T2		-.26*	-.41***	.24***	.30**	2.48 (1.27)
Hope T1			.78***	-.45***	-.42***	3.02 (0.53)
Hope T2				-.34**	-.45***	3.02 (0.50)
Depression T1					.39***	2.02 (0.75)
Depression T2						1.95 (0.77)

Note: **p* < .05; ***p* < .01; ****p* < .001. N = 74. Happiness Aver = happiness aversion.

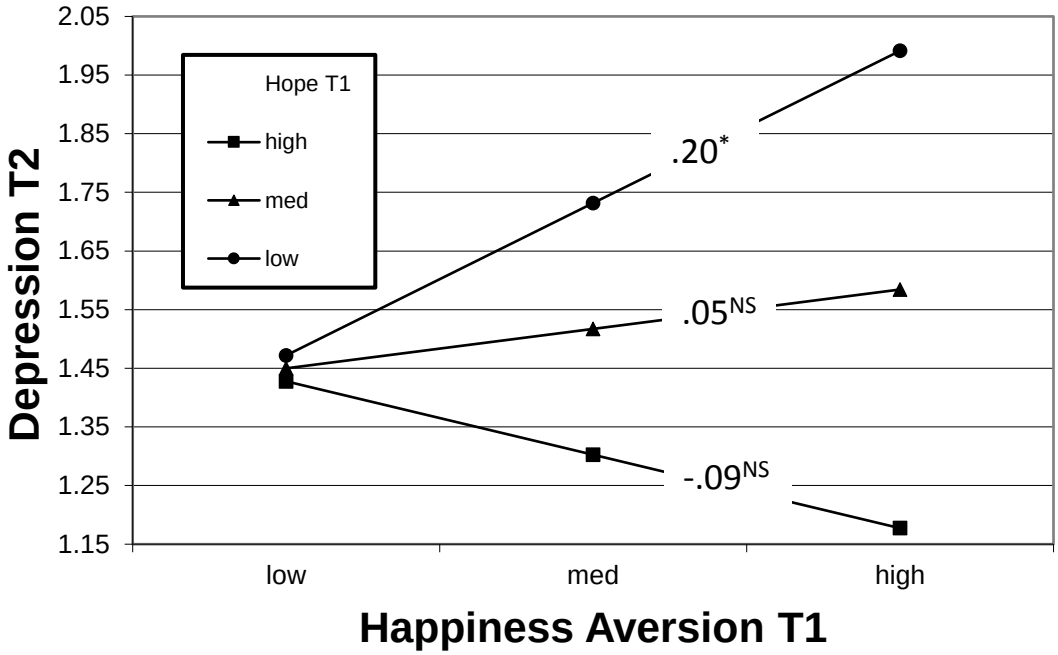

Figure 4. ModGraph depiction of longitudinal moderation by hope of the relationship between happiness aversion T1 to depression T2 with simple slopes.

Note. NS = non-significant; *$p < .05$.

Discussion

In this study we sought to identify in a large dataset whether hope would both mediate and moderate the relationship between happiness aversion and depression. We additionally carried out preliminary analyses on a small longitudinal sample to examine the same relationships over time. Support was obtained for the hypothesis that hope would mediate the relationship between fear of happiness and depressive symptoms. Specifically, the significant indirect effect suggested that fear of happiness predicted lower hope, and this attenuated hope, in turn, was predictive of higher levels of depressive symptoms. Hope also attenuated the strength of the relationship between happiness aversion and depressive symptoms in the moderation analyses, both concurrently and longitudinally. These results replicated the previously reported concurrent relationship between happiness aversion and depressive symptoms (Gilbert et al 2012), i.e., happiness aversion was found to be significantly and positively associated with depressive symptoms. Furthermore, this study contributes new information to the literature by verifying that hope functions as both a moderator and a mediator between happiness aversion and depressive symptoms, i.e., identifying a mechanism by which a third variable, hope, mediates between happiness aversion and depressive symptoms, and also documenting that the same third variable, hope, has the capacity to disrupt or buffer this basic relationship.

To date one empirical research paper has linked happiness aversion with depressive symptoms (i.e., Gilbert et al. 2012), albeit with a concurrent dataset. This paper constitutes an innovative way of exploring happiness aversion and depression in that it is the first study of its kind to examine the role of trait hope within the happiness aversion to depression relationship. The present research effort contributes to the small, but growing research on happiness aversion, supporting the prediction that happiness aversion would predict increased

depressive symptoms (as suggested by Gilbert et al. 2012). However, our findings additionally and innovatively provide an extension to this basic hypothesis, suggesting one way *how* happiness aversion predicts increased depressive symptoms over time, namely that happiness aversion seems to predict greater depressive symptoms through the mechanism of diminished hope. Hope also seems to play a buffering role against the happiness aversion to depression relationship, namely, individuals reporting high and medium levels of hope evidenced a significantly weaker relationship between happiness aversion and depressive symptoms than individuals reporting low levels of hope.

Clinical and Theoretical Implications

Efforts to identify and change negative attitudes towards happiness are proposed within a number of schools of psychotherapy. For instance, during compassion-focused therapy, when an individual expresses fears about positive feelings, actions are urged to try to reduce these psychological barriers in order to achieve a successful therapeutic outcome (Gilbert 2014). Hope therapy, in particular, has been clinically demonstrated to reduce levels of depression, anxiety and stress after intervention (Rahimipour, Shahghoian, and Yazdani 2015), and the present study highlights the important protective role that hope plays in relation to happiness aversion and depression. Research showing happiness aversion has direct links to depression motivates research such as the present study designed to identify potential third variables that can serve to blunt, buffer, and protect against the ill effects of happiness aversion. The current paper highlights the importance of hope in this regard, and the current findings reinforce the view that developing therapeutic, neuropsychological, and pharmacological interventions to alleviate happiness aversion in depressed clients will be useful (Ritsner 2014a, 2014b).

The present findings suggest a role for considering positive psychology constructs, e.g., hope, within the broader context of clinical psychology. Typically, research surrounding

mental wellbeing is focused on addressing negative correlates and sequelae of a particular psychological disorder, for instance, identifying negative self-schemas in individuals manifesting depression (Evans et al. 2005). However, effective clinical interventions may benefit from involving positive attributes that an individual may possess to assist them in times of psychological distress (Seligman & Csikzentmihalyi 2000). Recently, positive psychological interventions (PPIs) have been implemented and used within community samples and some of them have been empirically demonstrated to help promote psychological wellbeing. These positive interventions are based on theory and empirical evidence, and, overall, they have shown effectiveness in reducing depression with a medium effect size (r =.31; Sin and Lyubomirsky 2009). It has been discussed that the most reliable way to target happiness is by tackling strategies on an emotional and cognitive level as well as an individual's life circumstances. Previous interventions, for instance 'Counting blessings' or the 'Three good things' (Seligman, Steen, Park, and Peterson 2005), directly target and are designed to increase positive emotions. They additionally are developed to promote building techniques which self-generate positive emotions and regulate negative emotions. Previous interventions have focused on positive constructs, focusing specifically on hope alone (Feldman & Dreher 2012). As hope has been highlighted as playing a protective factor within this research, exploring how PPIs focused on hopeful attitudes contribute to reducing happiness aversion and depression is recommended for future research.

Limitations and Suggestions for Future Research

The current findings should be interpreted with caution. The main results were based on cross-sectional data, albeit with a large sample size, whereas the exploratory longitudinal analyses were based on a small sample. Causality cannot be attributed from analyses based on cross-sectional data (Jose 2013a; MacKinnon 2008), therefore the present findings need to be replicated with a more substantial longitudinal study. Also, future longitudinal studies

should be based on larger, three-wave datasets as the additional time of measurement would enable a more sensitive analysis of temporal relationships (Jose 2016). Additionally, although we found preliminary evidence that hope mediated between happiness aversion and depressive symptoms over time, it is highly likely that other attributes (both positive and negative) can be shown to mediate this relationship. And finally, experimental studies (e.g., an RCT study) are needed to show that interventions designed to reduce happiness aversion and/or boost hope would set in motion cascading effects to reduce persistent maladaptive mood states like depression.

Conclusions

The current research was carried out in order, first, to investigate the basic relationship between the happiness aversion and depression, and second, to examine the role of hope in the relationship between happiness aversion and depressive symptoms. Findings from both a large concurrent dataset as well as a small longitudinal dataset showed that hope moderated (buffered) and mediated the basic relationship in question. The findings suggest that positive dynamics such as hope have important implications for relationships between maladaptive constructs, and point out the potential importance of enhancing hope with interventions to disrupt the positive relationship between happiness aversion and depression.

Data availability:

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Conflict of interest statement:

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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Linkage between Study 1 and Study 2

Findings from Study 1 indicate that happiness aversion is a significant positive predictor of depressive symptoms, which is consistent with previous research (Gilbert et al., 2012; Joshanloo, 2014). Further, the small exploratory longitudinal sample suggested that happiness aversion predicted a significant increase in depressive symptoms over time. It also demonstrated that the positive attribute of hope could act as a buffer or mediator within this relationship. Our findings showed that happiness aversion predicted diminished hope, which then passed on the effect of happiness aversion to depressive symptoms. It was also found that hope moderated (i.e., buffered) the basic relationship between the fear of happiness and depression.

To date, little research has investigated how individuals are motivated to try to experience or to try to avoid experiencing a range of valenced emotions, not just isolated emotions such as happiness. In the next study we addressed this gap in knowledge by reporting the development of a new measure which was designed to capture general emotion regulation motives. In the first instance, we sought to determine if significant individual differences would emerge in profiles identified by latent profile analysis, and second, we sought to see if these profiles differed in predicting various measures of wellbeing and illbeing. It would be expected, based on what we know already in the literature about the fear of happiness, that there may be different profiles of individuals who engage in different motivations towards valenced emotions. To a certain extent this work was exploratory because we did not know how many or what characteristics these profiles would be likely to have, but we expected at the least that we would find a normative group (higher in hedonic motives) and a non-normative group (higher in contra-hedonic motives).

STUDY 2. General Emotion Regulation Measure (GERM): Individual differences in motives of trying to experience and trying to avoid experiencing positive and negative emotions. [Published in the Journal of Personality and Individual Differences]

Abstract

The present research was conducted in order to address nascent research concerning hedonic and contra-hedonic emotion motives by creating a measure that identifies individual differences in self-reported emotion motives. A sample of 833 undergraduate students reported how often they try to experience or try to avoid experiencing 24 valenced (positive or negative) emotion terms. Latent profile analysis identified three important distinct profiles: 1) a normative group in which people tried to experience positive emotions and tried to avoid experiencing negative emotions, 2) a non-normative group which exhibited an aversion to positive emotions and an attraction to negative emotions; and 3) a smaller non-normative third group which displayed an unwillingness or inability to regulate either positive or negative emotions. A MANOVA identified that the normative group reported higher levels of psychological well-being relative to the other two groups. The new General Emotion Regulation Measure (GERM) described in this research is proposed as a measure of higher order emotion regulation motives which can inform research on basic goals people use to regulate their emotions.

Keywords: emotion regulation, positive affect, negative affect, happiness aversion, wellbeing

Declaration of interest: None

General Emotion Regulation Measure (GERM): Individual differences in motives of trying to experience and trying to avoid experiencing positive and negative emotions

Motivation to try to experience positive emotions and to avoid negative emotions is innate and built into human biology, as it is in most animals (Kringelbach & Berridge, 2010). Consequently, various learning theories and related psychological research have focused on ways in which humans try to experience positive emotions and try to avoid experiencing negative emotions. More specifically, numerous ways in which people engage in the control and management of their positive and negative emotions have been examined (e.g., Gross, 2014). As a result, a large number of emotion regulation strategies focused on managing positive and negative emotions have been identified (Aldao, Nolen-Hoeksema, & Schweizer, 2010), but an overarching theoretical rubric for grouping 'emotion regulation' strategies with regard to motives to engage or avoid positive and negative emotions is lacking. At the same time, a number of studies (e.g., Ford & Tamir, 2012) have suggested that there are important individual differences in the ways that individuals try to regulate and experience their positive and negative emotions. We suggest that a general measure of emotion regulation based on motives to experience valenced emotions would capture these individual differences while simultaneously providing a useful theoretical guide for the disorganised emotion regulation literature. We argue in the present paper that individual differences in 'avoiding positive', 'seeking negative', 'avoiding negative', and 'seeking positive' emotions will serve to provide this theoretical organisation.

A Theory of Motivation Based on Positive and Negative Emotions

Trying to experience positive experiences and trying to avoid experiencing negative experiences was noted by ancient Greek philosophers, who prescribed the pursuit of pleasure and the avoidance of pain as the primary guide for all human conduct (Aristippus 430-360 B.C; Democritus, 460-370 B.C.). Similarly, James (1890), as cited in Evans (1990), explored how pleasure reinforces and pain inhibits behaviours, making approach-avoidance one of the earliest theories in the psychological literature. Both individually and as a species, the behaviours of accessing food, comfort, seeking potential mating partners while avoiding danger, pain, and discomfort are vital in order to enhance survivability (Baumeister, 2005; Grinde, 2016; Kringelbach & Berridge, 2010; Loonen & Ivanova, 2018). Attaining evolutionarily-specified goals (as in eating food) tends to trigger hedonically pleasant mood states, e.g., satisfaction, contentment, and happiness, whereas encountering threats to goals such as self-preservation tends to stimulate hedonically unpleasant mood states, e.g., desperation, unhappiness, and fear. Basic motivations to approach pleasure and avoid pain are therefore presumed to be innate and built into our genetic make-up and biology. Consequently, it can be argued that investigation into how humans regulate their positive and negative emotions is central to the study of human adaptation.

Trying to experience the positive and trying to avoid experiencing the negative has been foundational to the scientific study of emotion (Loonen & Ivanova, 2018). However, research into this topic has shown that this distinction does not entirely account for the complexity of human affect (Nesse & Ellsworth, 2009). One crucial problem with approach-avoidance motivation theorising is that it is based on the assumption that all positive stimuli are approached and all negative stimuli are avoided. Contrary to the principle that people increase the distance between the self and negative stimuli, research evidence shows that some negative stimuli do not always instigate avoidance, for instance, negative stimuli that

elicit anger often result in approach behaviours (Bossuyt, Moors, & De Houwer, 2014; Carver & Harmon-Jones, 2009; Maayan & Meiran, 2011).

It also needs to be appreciated that negative emotions, although unpleasant in hedonic tone, usually serve functional needs. Anger is experienced when someone appraises the situation as involving another person who has unfairly blocked his or her goal attainment attempts (Roseman, 2013). Thus, anger can be motivating for the person to try to achieve correction of an unfair situation. The unpleasant hedonic tone, in fact, is motivating for the person to change something in the context in order to neutralise or avoid the painful emotion. It is arguably not accurate, then, to suggest that all people avoid all negative emotions and seek to experience only positive emotions, and as the next section will discuss, it is notable that some people seek out and embrace negative cognitions, emotions, and behaviour.

Individual Differences in Approaching and Avoiding Emotions

Individual differences in the motivation to approach or avoid different emotions, appraise situations, and emotionally regulate events have been noted, highlighting the need for research to account for individual differences in the approach-avoidance theories of motivation (e.g., Kuppens & Tong, 2010). For example, Maio and Esses (2001) have constructed the 'Need for Affect Scale', which includes items that assess degree of both approach and avoidance of emotions separately in two subscales. They found, crucially, that individuals vary considerably in their need to experience emotion: some people seek emotions on either ends of the scale (very low or high frequencies), but most people seek to experience average amounts of emotion.

Relevant to the current work is the view posited by English, Lee, John, and Gross (2017) that the role of *goals in emotion regulation* is critical to understanding how people vary in their emotion regulation efforts. These scholars contend that emotion regulation strategies are guided by motives to achieve certain emotional and instrumental goals, e.g., to

feel happier or to focus on resolving a bout of jealousy. Work by Harmon-Jones, Harmon-Jones, Amodio, and Gable (2011) strikes a similar chord in pointing out that 'attitudes about emotions' provide guidance for efforts to avoid or to engage with particular emotions (anger, sadness, joy, fear and disgust).

Although these perspectives have drawn attention, no general emotion motivation measure, i.e., one that considers emotions that fall into general groups of positive and negative emotions, has been developed. The Affective Control Scale (Williams & Chambless, 1992) is an early attempt to assess these motives, but it is focused on a limited number of specific negative emotions (i.e., specifically anger, depression, and anxiety) in addition to a general 'positive emotion' category. Research also exists on the instrumental benefits negative emotions can have in certain social situations to achieve a goal (Ma, Tamir & Miyamoto, 2018; Netzer, Van Kleef, & Tamir, 2015). However, studies and/or measurement instruments identifying individual differences in *general* approach and avoidance of positive and negative emotions seem to be missing in the literature. The present research sought to identify individual differences in trying to experience and/or trying to avoid positive and negative emotions in an effort to create new knowledge about styles of general emotion regulation strategies. To set the stage, we will now consider a number of studies focused on certain contra-hedonic motivations in trying to avoid experiencing positive emotions and in trying to experience negative emotions.

Some People Try to Avoid Experiencing Positive Affect and Try to Experience Negative Affect

Striving for individual happiness in everyday life is a normative aspiration in modern day society (Rubin & Rubin, 2009). Nevertheless, Joshanloo (2013) and others (Gilbert et al., 2012) have questioned the assumption that all humans seek to maximise the experience of the positive emotion of happiness. In fact, some research has argued that some individuals may

not perceive happiness as a desirable emotional goal, and may try to avoid experiencing it (Bloore, Jose & Joshanloo, 2020). Joshanloo and Weijers (2014), in an extensive literature review, report that a state of happiness is believed by certain individuals to precipitate subsequent misfortune and, conversely, feel that experiencing unhappiness is a necessary 'price to pay' to achieve a balance or equilibrium in the world (Joshanloo, 2013).

Such findings have led psychologists to describe the so-called 'fear of happiness' (or 'happiness aversion') as a new, important dynamic in understanding how and why people approach and experience positive emotions (Joshanloo, 2014). To date, only a limited amount of research has been published on this topic, but this work has resulted in the construction of two scales (i.e., Gilbert et al., 2012; Joshanloo, 2013, 2014). These scales have helpfully enabled researchers to identify correlates of happiness aversion and understand why people may be averse to and avoid positive emotion (Gilbert et al., 2012).

Emotion Regulation and Well-being

The control and management of emotions has been termed 'emotion regulation', i.e., emotion regulation is defined as the altering of the quality, intensity, and duration of an emotional response (Gross, 1998; Gross & Thomson, 2007). Following the approach-avoidance distinction, the purpose, according to Tamir (2009), of most emotion regulatory actions is to reduce negative emotions and promote positive emotions. Some regulatory actions will be successful in altering emotions in a favourable direction, and these would be considered to be adaptive, whereas other actions are not successful or possibly exacerbate negative affect, and these would be considered to be maladaptive (Aldao, Jazaieri, Goldin, & Gross, 2014). Effective emotion regulation is increasingly considered to be a vital predictor of well-being and adaptive functioning (Gross, 2014), whereas, in the opposite direction, maladaptive emotion regulation techniques are regarded as a risk factor that predicts decreased functioning and ill-being (Gross & Munoz, 1995; Impett et al, 2014). Research has

revealed that those individuals who use effective emotion regulation strategies, such as mindfulness and reappraisal, report higher well-being and emotional functioning (Cõté, Gyurak, & Levenson, 2010; Quoidbach et al., 2010; Verzeletti et al., 2016). In contrast, individuals who employ ineffective or maladaptive techniques in dealing with negative emotions, such as rumination (Ciesla & Roberts, 2007), are more likely to suffer from mood disorders (Aldao, Nolen-Hoeksema, & Schweizer, 2010).

Over the last several decades and across a wide range of studies, a large number of specific emotion regulation (ER) strategies have been identified and documented. In the last decade, the scope of what is considered to be an emotion regulation strategy has widened considerably and the range of permissible strategies has become quite broad. The definition of ER proposed by Gross captures a wide range of possible cognitive and behavioural actions such as expressive emotional displays in the presence of other people (Gross, 2014; Hofmann, Carpenter, & Curtiss, 2016). Other researchers have focused on intra-psychic emotional regulation, e.g., research on mindfulness (Cash & Whittingham, 2010; Chiesa & Malinowski, 2010). A fair question to ask is whether all of these identified ER strategies correlate with each other to constitute a single higher-order ER latent construct. A recent meta-analysis by Naragon-Gainey et al. (2017), in fact, showed that the range of diverse ER strategies identified in the field of emotion regulation, do not correlate with each other well, suggesting that a hypothesised single overarching latent construct of ER may be untenable and perhaps unattainable.

In response to the failure to identify a unified, higher order ER style, the work described here focused on the basic task of investigating whether approach vs. avoidance of positive and negative emotions in everyday life (Tamir, 2009) is a useful higher order organising principle of ER strategies. In particular, we anticipated that we would identify individual differences in how people tend to approach and avoid groups of positive and

negative emotions with our new measure of general motives to try to avoid and/or try to experience valenced emotions. Presumably, the normative general ER strategy would be to try to experience positive emotions and to try to avoid negative emotions. In contrast, some literature, cited above, suggests that some individuals do not regulate emotions in a normative way, e.g., they tend to engage with negative moods and avoid experiencing positive moods.

Measurement of Emotion Regulation

A structure of general emotion regulation has not yet been identified (Berking & Wupperman, 2012). Instead emotion regulation is currently conceptualised by the function it takes. Thus, any act based on the goal to influence the experience or expression of emotions would be, ipso facto, a form of emotion regulation (Gross, 2014). In current, widely used emotion regulation measures such as the Emotion Regulation Questionnaire (ERQ) developed by Gross and John (2003), individuals are asked to rate what they do to try to regulate emotions that they experience. The ERQ captures two specific emotion regulation strategies, i.e., 'When I am faced with a stressful situation, I make myself think about it in a way that helps me stay calm' (cognitive reappraisal), and 'When I feel negative emotions I make sure not to express them' (emotional suppression). This latter method asks the individual to reflect specifically upon their efforts to suppress unpleasant moods and to adjust cognitive appraisals to effect a better mood. Additionally, the DERS (Difficulties in Emotion Regulation Scale; Gratz & Roemer, 2004), made up of six sub-factors and designed to capture emotion dysregulation, asks the individual to be self-reflective of one's ability to regulate emotional responses over time.

In short, the accumulating literature on emotion regulation strategies has identified a large number of quite diverse and specific strategies. Naragon-Gainey et al. (2017) have identified 10 basic ER strategies (there are arguably many more), and it is not clear what these strategies have in common with each other. Thus, we would argue that a *general*

emotion regulation scale is needed We suggest that measuring the extent to which an individual attempts to experience and/or attempts to avoid experiencing clusters of positive and negative emotions in their life provides this needed broader perspective in the literature.

Aims of the Current Study

Our chief aim in the present research was to create a more basic and general measure of emotion regulation, i.e., one that identifies to what extent individuals possess motives to try to avoid or try to experience positive and negative emotions. We anticipated that we would find discriminable individual differences in the way individuals try to regulate positive and negative emotions, so in order to address this research question, a latent profile analysis (LPA) was conducted. Based on the extant literature, we predicted that most individuals would normatively seek to experience positive emotions and would seek to avoid experiencing negative emotions, but that a smaller group (or possibly several other groups) would evidence non-normative motivational stances toward positive and negative emotions, such as seeking to avoid experiencing positive emotions (Hypothesis 1).

In addition to addressing the extent to which people try to experience and/or try to avoid experiencing positive and negative emotions, we also thought it relevant to ask respondents how often they actually experience positive and negative emotions. Our expectation was that reported levels of actually experienced emotions would reflect successes and/or failures in attempting to engage and to avoid certain valenced emotions (i.e., groups of positive or negative emotions). Thus, it was predicted that the four motives tapped by our new measure would accordingly predict higher or lower levels of valenced emotions, e.g., trying to experience positive emotions would predict higher experienced positive emotions (Hypothesis 2).

Finally, it was anticipated that the distinctive style in which people regulate their emotions would be predictive of a range of different psychological outcomes. We predicted

that the normative group would report higher well-being scores relative to the non-normative group(s) (Hypothesis 3). For example, it was predicted that the emotion regulation profile(s) seeking to avoid positive emotions (i.e., happiness aversion) would report higher levels of depression, anxiety, and other negative mood outcomes, and lower levels of subjective happiness, life satisfaction, and other positive outcomes (relative to the normative group).

Method

Participants

Participants were recruited from a mid-sized university in New Zealand. In order to test our hypotheses adequately, we sought to obtain a large dataset (N > 500). As we could not obtain such a large dataset in a single data collection session, we gathered data in four separate sessions. In each session, participants were invited to complete an online survey encompassing a range of topics such as positive and negative mood states, personality, and interpersonal attributes. All data were collected with the same measures and instructions. Sample 1 included 249 psychology students (drawn from a required third year research methods course in the psychology curriculum), and consisted of 55 males and 191 females, a common ratio found among undergraduate psychology majors though not typical of undergraduate students broadly. Sample 2 consisted of 203 participants in total, including 166 females and 35 males, recruited from a first year 'Introductory Psychology course'. Sample 3 was drawn from the same course two months later, and it included 66 males and 196 females. Sample 4 was drawn from the same course as was sample 1, but one year later and it consisted of 20 males and 95 females. Overall, the four samples were collected over a period of 2 years, 6 months. In order to create a sufficiently large sample for LPA analysis, Samples 1, 2, 3 and 4 were merged, resulting in a combined sample of 833 individuals, yielding power sufficient to identify small mean group effects (Cohen, 1992). Out of the 833 individuals in the sample, 823 provided their age, which for ethical reasons was voluntary, and the mean

age was found to be 23.4 years (*SD* = 6,90). Ethical approval was granted by the university, all participation was voluntary, and informed consent was obtained from all participants.

Measures and Procedure

General Emotion Regulation Measure (GERM). The GERM was created in order to investigate motives concerning how much individuals try to experience and/or try to avoid experiencing a range of positive and negative emotions (See APPENDIX A). The newly developed scale uses 25 distinct emotion terms as emotion prompts. The large number of emotion terms encompassed a wide range within the two broad groups of positive and negative emotions, as well as one neutral-valenced emotion term (surprise). Participants were asked to indicate how often in their everyday lives they: 1) TRY to experience, 2) try to AVOID experiencing, and 3) ACTUALLY experience each of 12 positive (e.g., happiness, love, compassion, etc.), and 12 negative (e.g., anger, sadness, jealousy, etc.) emotion terms, plus surprise. Selection of emotions was based on key emotions identified in Roseman's appraisal theory of emotions (Roseman, Spindel, & Jose, 1990), and an additional review of emotion literature. The neutral emotion surprise was added to the list as it is recognised as a key emotion, however it was ignored in subsequent analyses because it is not valenced. The three questions were presented on three separate pages, with each followed by a mixed-order list of 25 emotions to be rated individually. The order of emotion terms was different across the three pages of prompts. We used three variations of the order in which the participants were given these stem questions and the order of the emotions within these stems were also randomly ordered to allow an assessment of order effects. Six variables were computed from the GERM in order to identify a variety of broad valenced-emotion regulation styles: 1) how much individuals tried to experience positive emotions (EXP-POS), 2) how much individuals tried to experience negative emotions (EXP-NEG), 3) how much individuals tried to avoid experiencing positive emotions (AVOID-POS) 4), how much individuals tried to

avoid experiencing negative emotions (AVOID-NEG), 5) how much individuals actually experienced positive emotions (ACTUAL-POS), and 6) how much individuals actually experienced negative emotions (ACTUAL-NEG).

Outcome Measures Used to Evaluate Validity of the GERM

Thirteen different assessments of adaptive and maladaptive well-being were our outcome variables. These particular variables were selected due to the well documented research surrounding each of them as being distinctive and important indicators of either positive or negative mood states. In addition, the large literature on emotion regulation has linked various specific ER strategies with all of these outcomes, e.g., Aldao et al. (2014). Thus we believed that our study, focused on identifying individual differences in ER strategies, would be likely to yield interpretable results with these outcome measures. Table 1 provides the name of each measure along with a citation, as well as the Cronbach's alpha obtained. We assessed this range of constructs in order to validate the profiles of ER obtained from the GERM data, and assess its predictive power.

Table 1. *Outcome Variable Information Including the Source, Cronbach's Alpha, Likert Scale, and an Example Item*

Author	Measure	Example Item	Likert scale	Cronbach's α
Joshanloo (2013)	Fear of Happiness Scale	Disasters often follow good fortune.	1-7	.90
Radloff (1977)	Depression (CES-D)	I felt depressed.	1-4	.86
Beck & Steer (1993)	Beck Anxiety Inventory (BAI)	Fear of the worst happening	1-4	.90
Diener et al., (1985)	Satisfaction With Life Scale	The conditions of my life are excellent.	1-7	.87
Lyubomirsky & Lepper (1999)	Happiness	Compared with most of my peers, I consider myself (more happy…less happy)	1-7	.79
McCullough, Emmons & Tsang (2002)	Gratitude	I have so much in life to be thankful for.	1-7	.80
Scheier, Carver, & Bridges (1994)	Optimism (LOT)	In uncertain times, I usually expect the best.	1-5	.84
Snyder et al. (1991)	Hope	There are lots of ways around any problem.	1-4	.84
Gucciardi, Jackson, Coulter & Mallett (2011)	Resilience	Can deal with whatever comes.	1-5	.88
Duckworth et al. (2007)	Grit	Setbacks don't discourage me.	1-5	.75
Raphiphattana, & Jose, P. E. (2013)	Mindfulness	I accept my feelings and thoughts.	1-5	.85
Weir & Jose (2010)	Perception of False Self	I stay quiet when I don't agree with others.	1-5	.81
Watson & Clark (1994)	PANAS Positive &	Strong	1-5	.89
	PANAS Negative	Distressed	1-5	.88

Note: PANAS = Positive and Negative Affect Scale.

Analytic Plan

First, we conducted invariance tests among the four separate datasets in order to determine whether the characteristics of the datasets were sufficiently similar to justify combining them into a single dataset. We used Multigroup Confirmatory Factor Analysis (MGCFA) in SEM to test invariance of four of the six GERM indicators described above. We focused on the first four indicators (i.e., EXP-POS; EXP-NEG; AVOID-POS; and AVOID-NEG as they capture the motives of emotion regulation. The latter two indicators (i.e., ACTUAL-POS and ACTUAL-NEG) were then later used as outcome variables. Parcels of items instead of individual items were included in the CFA for a number of reasons. Research has demonstrated that parcelling of items has certain advantages over CFAs conducted on individual items, i.e., data conform to the assumption of continuousness better, redundant correlated error is avoided, and parcels evidence stronger loadings than individual items, on the latent construct (Little, Cunningham, Shahar, & Widamon, 2002).

Second, if invariance was verified, a subsequent confirmatory factor analysis was planned in order to assess content validity of the four indicators computed from the new GERM. We also examined the covariances in order to determine whether the associations between the four variables were sensible.

Third, in order to investigate individual differences in the degrees of motives for trying to experience and trying to avoid experiencing positive and negative emotions, a latent profile analysis (LPA), using MPlus software (Muthèn & Muthèn, 2012), was carried out. Latent profile analysis considers individual responses to a set of items and then identifies groups of individuals who display similar patterns of association among the indicators (Marsh, Lüdtke, Trautwein, & Morin, 2009). It was anticipated that this approach would identify a small number of profiles of individuals who engage in emotion regulation in distinctly different ways.

Fourth, in order to explore and address how emotion regulation strategies are associated with emotions felt by the participant, we conducted a path analysis investigating the relationships between trying to avoid experiencing vs. trying to experience positive or negative emotions with self-reported actual positive and negative emotions experienced as the outcomes.

And fifth, a MANOVA was conducted to identify any well-being outcome differences between the obtained profiles.

Treatment of Missing Data

Missing values constituted less than 1% of the entire dataset and Little's test for MCAR revealed that the missing values were missing completely at random, $p > .20$. Expectation-Maximization (EM) imputation (Lin, 2010) on this very small amount of missing data was conducted to maximise statistical power.

Invariance Testing

Multigroup Confirmatory Factor Analysis (MGCFA) was performed with AMOS (Arbuckle, 2014) to investigate whether measurement invariance for the GERM across the four separate samples could be confirmed. The model fit indices along with the three invariance levels of configural, metric and scalar are reported in Table 2. These results indicate that the four-factor GERM measurement model demonstrated configural, metric, and scalar invariance across the three comparisons. We adopted the rule enunciated by Cheung and Rensvold (2002), namely that changes in RMSEA values less than 0.01 from one model to the next signified invariance. All comparisons met this criterion. First, datasets 1 and 4 were compared, followed by datasets 2 and 3. Since both comparisons yielded invariance, the two subsets were merged and then compared (1 + 4 vs. 2 + 3). These final comparisons yielded invariance as well.

Table 2. *Invariance tests for the GERM across the four datasets*

	Models	χ^2	df	χ^2/df	RMSEA
1 vs 4	1. Unconstrained (configural invariance)	196.55	96	2.05	.054
	2. Measurement weights (metric invariance)	208.70	104	2.01	.053
	3. Structural covariance (scalar invariance)	260.69	114	2.29	.060
2 vs 3	1. Unconstrained (configural invariance)	241.33	96	2.51	.057
	2. Measurement weights (metric invariance)	253.17	104	2.43	.055
	3. Structural covariance (scalar invariance)	276.66	114	2.43	.055
1 and 4 vs 2 and 3	1. Unconstrained (configural invariance)	324.19	96	3.38	.053
	2. Measurement weights (1st order metric invariance)	344.67	104	3.31	.053
	3. Structural weights (2nd order metric invariance)	386.82	114	3.39	.054

Note. Samples 1 and 4 were drawn from a 1st year Introductory Psychology course, and samples 2 and 3 were drawn from a 3rd year required research methods course.

Table 3. *Descriptive Statistics and Correlations among the Four Facets of the GERM*

	AVOID-POS	AVOID-NEG	EXP-POS	EXP-NEG	Facet Means and SDs	α
AVOID-POS	-				1.58 (.55)	.87
AVOID-NEG	.05	-			3.63 (.90)	.92
EXP-POS	-.21***	.40***	-		3.79 (.74)	.90
EXP-NEG	.55***	-.19***	-.07	-	1.48 (.51)	.90

Note: **p* < .05, ***p* < .01, ****p* < .001. α = *Cronbach's alpha*; AVOID-POS = try to avoid experiencing positive emotions; AVOID-NEG = try to avoid experiencing negative emotions; EXP-POS = try to experience positive emotions; EXP-NEG = try to experience negative emotions.

Confirmatory Factor Analysis of the GERM Measure for the Combined Sample

In order to evaluate content validity of the new measure, we conducted a confirmatory factor analysis on the combined data sample. Acceptable model fit was obtained for the proposed four-factor CFA model, χ^2/df = 5.30, sRMR = .019, IFI = .97, CFI = .97, RMSEA = .073. Standardised regression weights for the model ranged from .79 to .93, signifying strong associations for all factor loadings. These results suggest that the GERM indicators are valid representations of four distinct factors.

Identifying Profiles of Individuals Who Regulate Their Emotions in Distinctive Ways

It was predicted (Hypothesis 1) that a small number of distinct profiles would emerge from a person-centered analysis of the data, demonstrating how people differ in their motivations to try to experience or to try to avoid experiencing positive and negative emotions. The latent profile analysis (LPA) was conducted using Mplus version 7.2 (Muthén & Muthén, 2015), and it was anticipated that several different profiles would be identified.

The results of the LPA provided best support for a three-profile model. We explored four latent profile models representing 1 through to 4 profile solutions. Output statistics indicated that the 3-profile model was the optimal representation of the data. The four-profile model analysis yielded a non-significant Lo-Mendell Rubin likelihood test, lower entropy, and two distinct profiles falling below ten percent of the total sample, therefore this model was rejected and the three-profile model was accepted. For full details, see Table 4.

Table 4
Latent Profile Analysis Results

	2 Profiles	3 Profiles	4 Profiles
AIC	9006.93	8555.64	8359.88
BIC	9096.71	8678.49	8515.80
Entropy	.90	.89	.86
Lo-Mendell-Rubin adjusted LRT test	658.08	455.61	205.39
p-value	< .00001	.011	.226
N for each profile			
P1	714 (86%)	608 (73%)	85 (10%)
P2	119 (14%)	96 (11%)	45 (05%)
P3		129(15%)	161(19%)
P4			543(65%)

Note: AIC= Akaike Information Criterion; BIC = Bayesian Information Criterion.

Results of the three profile LPA solution are depicted in Figure 1. The size of the profiles varied from the largest group, which encompassed the large majority of the sample (73%), to the other two groups which constituted smaller numbers, i.e., 15% and 12%. Based upon profile size and the mean levels of the four GERM indicators, the largest group was termed the *normative group*. These individuals reported overall regulation of negative and positive emotions in a typical or expected way, i.e., high levels of trying to experience positive emotions and high levels of trying to avoid experiencing negative emotions. As was expected, they also reported lower levels of trying to avoid positive emotions and trying to experience negative emotions in their everyday lives than the other profiles.

The second largest group reported trying to avoid positive emotions significantly more than the normative group, along with higher reports of trying to experience negative emotions. Because of these contra-hedonic tendencies, similar to those noted in the literature review by individuals showing ‘fear of happiness’, this group was termed the *happiness avoidant group*.

The third group was made up of the smallest proportion of the sample, and those individuals reported low levels of both trying to experience positive emotions and trying to avoid experiencing negative emotions, and consequently they were named the *non-regulating group*.

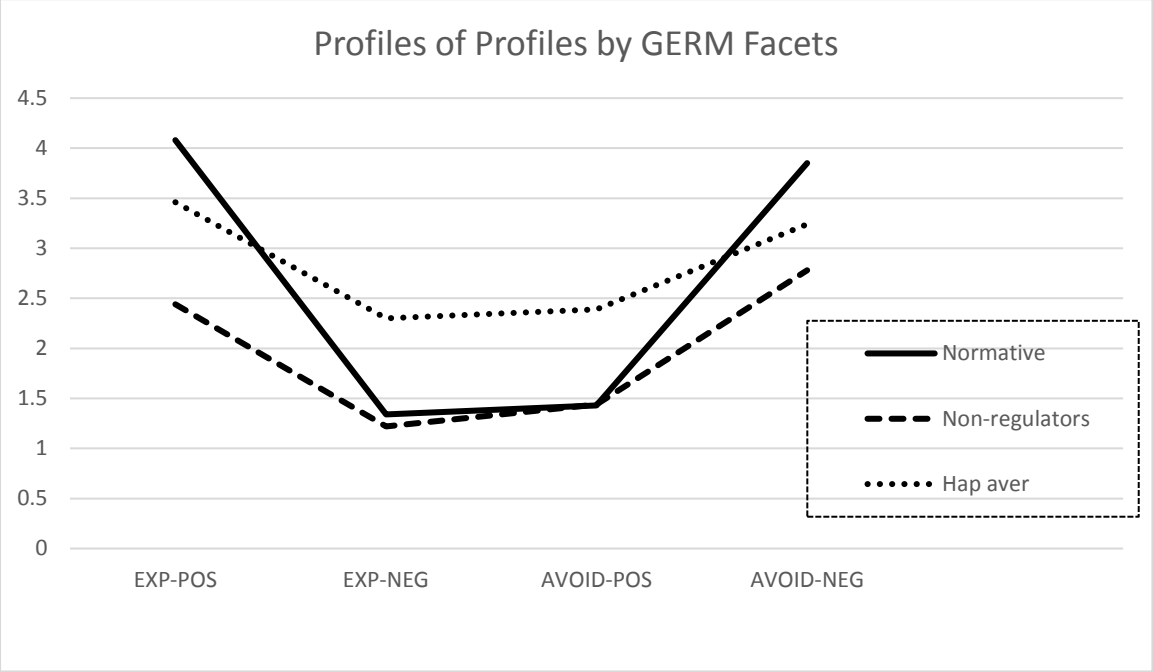

Figure 1. Latent Profile Analysis yielding three profiles based on four facets of the regulation of positive and negative emotions in the GERM scale.

Note. Hap aver = happiness aversion. EXP-POS = try to experience positive emotions; EXP-NEG = try to experience negative emotions; AVOID-POS = try to avoid experiencing positive emotions; AVOID-NEG = try to avoid experiencing negative emotions. Likert scale is 1-5. Total sample N = 833; N = 608 for Normative group; N = 96 for Non-regulators; and N = 129 for Happiness aversion group.

The identification of three profiles of individuals through LPA supported Hypothesis 1, namely that a small number of distinct groups that varied in ER strategies would be identified.

To explore mean group differences among the profiles on the four defining facets, a MANOVA was conducted (see Table 5 for details). A significant multivariate main effect for profile was found, Wilk's $\Lambda = .18$, $F(8, 1654) = 283.15$, $p < .001$, partial $\eta^2 = .58$, and

significant univariate differences were obtained for all indicators, *F*s(2, 830) = 90.15 to 506.76, all *p*s < .001, partial η^2s = .18 to .55. Tukey HSD post-hoc analyses found all profiles to be significantly different from each other for all four facets except for AVOID-POS between the normative and non-regulating profiles, which were non-significantly different.

The normative group endorsed the highest levels of EXP-POS and AVOID-NEG, and endorsed the lowest levels of EXP-NEG, which is consistent with most people's motives to experience positive emotions and avoid negative emotions. The happiness aversion group was notable in exhibiting the highest levels of AVOID-POS, which is consistent with the literature showing small percentages of respondents endorsing the motive to avoid positive emotions. The non-regulating profile was notably the lowest on EXP-POS and AVOID-NEG, and they reported low levels of EXP-NEG and AVOID-NEG as well.

Latent Path Analysis of the Four GERM Factors Predicting Reported Actual Negative and Positive Emotions

The relationships between how much an individual tries to experience or tries to avoid emotions in relation to how much actual positive and negative emotions experienced was examined through a path model analysis conducted in AMOS (Arbuckle, 2014). The fully saturated path analysis included the four facets of the GERM (EXP-POS, EXP-NEG, AVOID-POS and AVOID-NEG) predicting positive and negative actual emotional experience (ACTUAL-POS and ACTUAL-NEG). We expected that efforts to experience or avoid experiencing emotion groups would prove effective (Hypothesis 2). Figure 2 depicts the size and significance of the estimated relationships. As predicted, reports of trying to experience positive emotions were positively predictive of more positive emotions experienced ($\beta = .44$, $p < .001$). Also as expected, the motive to avoid positive emotions predicted lower levels of actual positive emotions ($\beta = -.14$, $p < .001$). Inconsistent with the hypothesis, however, trying to avoid negative emotions was not predictive of actual negative

emotions experienced, $\beta = .02$, *ns*. And last, the motive to try to experience negative emotions predicted higher levels of actual negative emotions ($\beta = .41$, $p < .001$).

Hypothesis two was largely supported, and relationships were particularly strong for the normative motives to experience positive emotions and to avoid negative emotions. Interestingly, all of the predicted outcomes were supported with the exception of the finding that trying to avoid negative emotions did not yield a significant relationship. It would seem that efforts to avoid negative emotions, on the whole, were not successful, whereas the other three motives were successful.

Validity Tests for the Three Profiles Derived by the GERM

Based on the aforementioned literature, we expected that the different ways in which individuals seek to regulate their positive and negative emotions would be associated with differences in well-being. Specifically, we expected that the normative group would report higher well-being than the other two groups (Hypothesis 3).

In order to explore individual differences among the three profiles on the 13 outcome variables, a MANOVA was conducted (see Table 5). A significant multivariate main effect for emotion regulation profile was found, Wilk's $\Lambda = .69$, $F(26, 1634) = 12.80$, $p < .001$, partial $\eta^2 = .17$ (i.e., a medium-sized effect). Significant differences among the three profiles were obtained for all outcome variables (see Table 6). As expected, the normative group scored higher on positive constructs and lower on negative constructs compared to the non-normative groups. Generally, the fear of happiness profile reported the highest levels of negative outcomes (e.g., anxiety and depression) and lowest levels of positive outcomes (e.g., gratitude, optimism, and resilience), and the non-regulators generally fell between the normative group's and the fear of happiness group's means. The non-regulators, however, in some cases yielded means similar to the normative group (e.g., PANAS negative affect) and sometimes yielded means similar to the fear of happiness group (e.g., grit and hope). Overall

these findings supported Hypothesis 3, which predicted that significant differences in the psychological outcomes associated with how individuals try to regulate positive and negative emotions would be found among the three groups.

Table 5. *Means and Standard Deviations for the GERM Facets across Profiles*

	Normative	Non-regulators	Happiness aversion
EXP-POS	3.46_a (.50)	3.08_b (.48)	2.39_c (.61)
EXP-NEG	1.34_a (.31)	1.22_b (.27)	2.31_c (.59)
AVOID-POS	1.43_a (.45)	1.43_a (.48)	2.42_b (.64)
AVOID-NEG	3.85_a (.81)	2.75_c (1.04)	3.25_b (.69)

Note: Total sample N = 833; N = 608 for normative profile; N = 96 for the non-regulating profile, and N = 129 for the happiness aversion profile. Different subscripts reading left to right signify Tukey post-hoc differences at $p < .01$. AVOID-POS = try to avoid experiencing positive emotions; AVOID-NEG = try to avoid experiencing negative emotions; EXP-POS = try to experience positive emotions; EXP-NEG = try to experience negative emotions.

Table 6
Means (SDs) and Multivariate F values for Profile Membership Correlates

	Normative	Non-regulators	Happiness aversion	*F* value	partial η^2
Fear of happiness	2.36 (1.31)	2.55 (1.31)	3.79 (1.40)	62.99***	.13
Depression	1.90 (0.67)	2.10 (0.69)	2.42 (0.62)	34.61***	.08
Anxiety (BAI)	1.89 (0.78)	1.92 (0.77)	2.72 (0.92)	56.60***	.12
Perception of False Self	2.72 (0.57)	2.98 (0.56)	3.02 (0.52)	21.08***	.05
PANAS Negative	2.22 (0.74)	2.22 (0.83)	2.96 (0.75)	51.61***	.11
Satisfaction with life	4.90 (1.22)	4.04 (1.48)	3.90 (1.23)	49.03***	.11
Happiness	4.70 (1.17)	3.94 (1.35)	3.77 (1.10)	44.60***	.10
Gratitude	5.70 (0.84)	5.07 (1.02)	4.70 (1.09)	54.72***	.12
Optimism	3.38 (0.74)	3.02 (0.83)	2.76 (0.66)	43.22***	.09
Hope	3.04 (0.42)	2.75 (0.55)	2.70 (0.46)	42.69***	.09
Resilience	3.75 (0.59)	3.45 (0.59)	3.27 (0.60)	40.57***	.09
Grit	3.21 (0.53)	3.03 (0.62)	2.92 (0.47)	19.02***	.04
PANAS Positive	3.25 (0.69)	2.50 (0.86)	2.83 (0.72)	57.88***	.12

Note: PANAS = Positive and Negative Affect Scale; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$. Total sample N = 833; N = 608 for Class 1; N = 96 for Class 2 and N= 129 for Class 3.

Discussion

The diverse ways in which people regulate both positive and negative emotions is central to the study of human adaptation (Loonen & Ivanova, 2018). With recent research demonstrating that negative stimuli do not always instigate avoidance and that positive emotional experience is not always sought, individual differences in the ways in which people are motivated to experience negative and positive emotions need to be investigated (Gilbert et al., 2012; Ma, Tamir, & Miyamoto, 2018). In the present study, we eschewed the typical approach of focusing on regulation of specific emotions (e.g., anger), and we aimed to create a more general emotion regulation measure encompassing how much individuals try to experience and try to avoid experiencing emotions that fall into the two general valenced categories of positive and negative.

In light of research showing that some people express an aversion to happiness (Gilbert et al., 2012; Joshanloo & Weijers, 2014), we expected to find at least two groups: a normative group that tries to experience positive emotions and avoid negative emotions, and a non-normative group which seeks to avoid experiencing positive emotions. Consistent with Hypothesis 1, results yielded three distinct groups within our overall sample, confirming the presence of a normative group but also identifying two non-normative groups, i.e., a group which endorsed an aversion to happiness and another group which indicated that they did not seek to regulate either positive or negative emotions. Hypothesis 2 predicted that motives to try to experience or try to avoid experiencing valenced emotions would be associated with successful engagement and avoidance of these emotions. We found support for three of these predictions. The one exception, trying to avoid experiencing negative emotions, was found to not predict fewer negative emotions experienced. Finally, the normative vs. non-normative profiles yielded predicted group differences in regards to a wide range of well-being and ill-being outcomes such as depression, anxiety, optimism, hope, etc. (Hypothesis 3).

We will now discuss the nature of these three identified emotion motive profiles.

Normative Group

Based on extant research, we expected that the majority of individuals in our sample would try to experience positive emotions and try to avoid experiencing negative emotions (Loonen & Ivanova, 2018; Rubin & Rubin, 2009). Results supported this prediction, with the largest number of individuals within our sample (73%) reporting high levels of trying to experience positive emotions and high levels of trying to avoid experiencing negative emotions in a way that is presumed to be typical of Western society (Joshanloo et al., 2014). Consistent with Hypothesis 1, this group reported trying to experience positive emotions at a higher rate than the other two groups identified. Importantly they also reported significantly higher mean levels of actual positive emotions experienced and lower mean levels of actual negative emotions. Analyses of indicators of well-being and ill-being demonstrated that individuals within the normative group reported significantly higher levels of positive psychological outcomes such as gratitude, happiness, optimism, and resilience while also indicating lower levels of negative psychological outcomes such as depression, anxiety, fear of happiness, and perceptions of false self. This pattern of results shows that the normative group's motives regarding trying to experience and trying to avoid experiencing valenced emotions was associated with psychological health and well-being in expected ways. Research has demonstrated that individuals who try to experience the positive and avoid the negative report greater life satisfaction, happiness, and optimism (Fredrickson, 2004; Grinde, 2016), and our findings with the normative group is consistent with that literature.

Happiness Aversion Group

A small group of individuals (15% of our overall sample) was identified who tried to avoid positive emotions to a greater extent than the normative group (2.42 vs. 1.43), as well as tried to experience negative emotions to a greater extent than the normative group (2.31 vs.

1.34) and tried to experience positive emotions less (2.39 vs. 3.46). We consider this group the 'happiness aversion' profile because these mean levels are consistent with the literature on people who endorse 'fear of happiness' in other settings (Gilbert et al., 2012, 2014; Joshanloo, 2013). Comparisons of maladaptive and adaptive outcome measures revealed that this group reported the worst outcomes of all three groups: they reported higher levels of depression, anxiety, fear of happiness, negative affect and lower levels of positive outcomes such as happiness, gratitude, optimism, and resilience. Thus, about $1/6^{th}$ of our sample exhibited a profile of contra-hedonic motives of trying to experience negative emotions and trying to avoid experiencing positive emotions. This profile is consistent with data showing that individuals who endorse happiness aversion also report significantly higher depression and anxiety (Gilbert et al., 2012). Identification of this group provides support for the small, growing research area demonstrating that some individuals do not seek to experience positive emotions, and in some cases actively avoid them (Gilbert et al, 2012; Gilbert et al 2014; Joshanloo, 2013; Joshanloo & Weijers, 2014). It additionally supports the view that individuals who regulate emotions in these ways report higher associations with maladaptive outcomes such as depression and lower associations with adaptive outcomes such as life satisfaction (Gilbert et al 2012; Joshanloo, 2014). It also raises the question of what produces this seemingly maladaptive emotion regulation pattern.

Despite what the name of this group implies, it is important to note that this profile not only demonstrated an aversion to positive emotions, but they also showed a striking proclivity to try to experience negative emotions. A recent paper shows, in fact, that increased negative mood mediates the relationship between happiness aversion to depression more strongly than diminished positive mood (Jose, Bloore, & Joshanloo, under review). These findings are also broadly consistent with recent research in the field of emotion regulation, which highlights that negative emotions do not necessarily result in avoidance and

that they often result in approach behaviours (Maayan & Meiran, 2011), especially if there is an underlying instrumental benefit in certain situations to achieve a goal.

Non-Regulating Group

Along with the two profiles that we expected, there was additionally a smaller group that was identified, constituting 11.5% of the total sample. This group reported the lowest levels of trying to experience positive, and trying to avoid experiencing negative, emotions and also did not try to experience negative emotions or try to avoid experiencing positive emotions. Overall they exhibited little inclination to actively try to regulate emotion, regardless of the valence. At this juncture we do not know whether these individuals have a low need for affect (see Appel, Gnambs, & Maio, 2012), whether they believe that they cannot control the experience of their emotions (Watson & Greer, 1983), or whether they simply do not wish to control their emotions. The MANOVA results showed that this group yielded scores intermediate between the normative group and the fear of happiness group. Thus, the psychological functioning of this group fell between the two poles of normal and dysfunctional. This positioning suggests that abdicating from emotion regulation of any kind is not optimal but it is also not explicitly harmful either.

Implications for Studying Emotion Regulation Motives

The field of emotion regulation is very diverse and broad, with a large number of regulation strategies identified. Pointedly, recent research has demonstrated that a single higher order construct of emotion regulation has yet to be determined, with many of the specific emotion regulation strategies not yielding strong relationships with each other (Naragon-Gainey et al., 2017). We propose that motives to try to experience or to try to avoid experiencing valenced classes of emotions may function at this higher order level, and this rubric can serve to organise and explain associations among specific lower level emotion regulation strategies. For example, strategies for savoring positive experiences (Bryant &

Veroff, 2007) are examples of motives to try to engage with positive emotions, whereas avoidance (Kashdan, Barrios, Forsyth, & Steger, 2006) is an example of trying to avoid experiencing negative emotions. Interestingly, rumination seems to be an emotion regulation strategy that involves, at least in part, an attempt to engage and experience negative emotions (Garnefski, Teerds, Kraaij, Legerstee, & van den Kommer, 2004). If the four emotion motives tapped by the GERM could serve to identify distinct clusters of emotion regulation motives/goals, this organising template could shed important new light on how emotion regulation strategies are related to each other. A possible, albeit ambitious, study would be to correlate at the individual level the four GERM emotion motives with endorsement of a large range of ER strategies to determine whether our proposed grouping yields a sensible clustering.

Conclusions and Limitations of the Present Study

Several limitations of the present study should be noted. First, the present dataset was not a longitudinal sample, therefore, we were unable to determine the direction of causality between emotion regulation and experienced emotions and mood outcomes. Future research involving the GERM with longitudinal data would usefully elucidate the predictive value of these emotion motives on important outcomes. Second, the emotion terms we used to elicit emotion regulation motives vary considerably along many appraisal, phenomenological, and behavioural dimensions (Roseman, 2008), even within the broad groupings of positive and negative emotions. Although we believe that the facets we operationalised here tap broad beliefs about valenced emotion groups, future work will need to verify that these particular emotion terms are valid indicators of these intended latent constructs. Third, emotional situations occur within contexts (Barrett, 2011), and a daily diary study would be helpful in examining the contextual dynamics in a more in-depth way, taking into consideration daily human interactions and events (Brockman et al., 2016). Fourth, in emotion regulation

research, age and gender have been shown to exert moderating effects (MacRae, 2008; Martins, 2018). As the majority of individuals in the present sample were female and it comprised university-attending young adults, investigating different populations in future research is encouraged. Fifth and last, it strikes us that asking individuals *why* they seek to avoid or try to experience certain emotions would help elucidate the dynamics identified here in a general fashion.

In conclusion, the present research was conducted in order to devise a measure that could identify individual differences in self-reported emotion motives that would be associated with important psychological outcomes. Results showed that the largest identified profile was composed of individuals who behaved in a normative fashion, i.e., they tried to experience positive emotions and tried to avoid experiencing negative emotions. Two other groups evinced non-normative profiles: one group exhibited an aversion to positive emotions and an attraction to negative emotions; and another group displayed an unwillingness or inability to regulate either positive or negative emotions. Notably, the normative group reported higher levels of well-being, whereas the other two groups reported lower levels of psychological functioning. The new general emotion regulation measure (GERM) is proposed as a useful assessment tool of higher order emotion regulation motives.

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Linkage between Study 2 and Study 3

The development and the exploration of the GERM reported in Study 2 highlighted important new advances in emotion motivation research. It identified three profiles of individuals: the normative group, the happiness aversion group and the non-regulating group. This paper highlights how although it is commonly expected that individuals try to avoid the negative and seek out the positive, some people are not motivated to experience emotions this way (i.e., those in the happiness aversion group) and these people are likely to report higher anxiety, depression etc. and lower levels of hope, optimism and joy etc. This paper demonstrates that trying to experience negative emotions alongside avoiding positive emotions has a negative impact on overall mental wellbeing.

Tamir et al. (2020) states that emotions are motivated and that emotion motivations should predict both ER strategies as well as emotional outcomes. Therefore Study 3 was devoted to investigating the relationships between GERM motivations with difficulties in ER. There has been long documented a relationship with difficulties in ER and depression (Aldao et al., 2014; Gross & Munoz, 1995; Hofmann et al., 2012; Visted et al., 2018), so this paper investigated GERM motives, ER difficulties and depressive symptoms to further understand how motivations play a role in greater maladaptive wellbeing. The Difficulties in Emotion Regulation measure is a well-established emotion regulation measure, and this paper provides new insight as to how difficulties in emotion regulation plays a role in the association between contra-hedonic motivation and depressive symptoms.

STUDY 3. Do dysfunctional emotion regulation strategies mediate between general emotion regulation motives and depressive symptoms?

Abstract

Recent literature indicates that motives to experience or to avoid experiencing certain emotions lead individuals to adopt certain adaptive emotion regulation (ER) strategies, e.g., wanting to experience positive emotions motivates the use of cognitive reappraisal. Can we extend this work to show relationships between motives to experience or avoid experiencing groups of valenced emotions with the adoption of maladaptive regulation strategies? In this study, 377 New Zealand undergraduate students provided concurrent self-reports of emotion motives (GERM scale; Bloore, Jose, & Roseman, 2020), maladaptive ER strategies (DERS scale; Gratz & Roemer, 2004), and depressive symptoms. It was hypothesised that contra-hedonic motives (i.e., trying to avoid experiencing positive emotions and trying to experience negative emotions) would positively predict a variety of ER difficulties, and these, in turn, would be predictive of higher levels of depressive symptoms. Five significant mediations were identified: lack of emotional clarity, lack of impulse control, and lack of access to emotion regulation strategies mediated between the two contra-hedonic motives and depressive symptoms. The findings demonstrate the importance of understanding the role of emotion motives in setting maladaptive ER efforts in motion, which are likely to produce dysfunctional mood outcomes.

Do dysfunctional emotion regulation strategies mediate between general emotion motives and depressive symptoms?

Considerable research has shown that certain types of emotion regulation (ER) strategies are reliably associated with, or predictive of, psychological outcomes in interpretable ways. That is, dysfunctional emotion regulation reliably predicts higher levels of negative mood (Gratz & Roemer, 2004; Gross, 2014). But what motivates individuals to choose particular unhelpful ER strategies in the first place? Although Gross's theory of emotion regulation acknowledges 'activation of a goal' to be a core feature of emotion regulation, the theory primarily focuses on *when* and *how* individuals choose particular ER strategies in an unfolding temporal sequence. Notably missing within the literature (Tamir, Vishkin, & Gutentag, 2020) is a full account of *why* individuals choose particular ER strategies. A recently developed instrument, the General Emotion Regulation Measure (GERM; Bloore, Jose, & Roseman, 2020), has been proposed to assess the extent to which individuals try to experience and/or try to avoid experiencing either positive or negative emotions (referred to as 'goal setting' by Tamir et al., 2020). In this vein, the research described in the present report was based on the hypothesis that motives assessed by the GERM might help explain why particular ER strategies are chosen and used. Thus, in the present study we examined whether the four GERM motives (trying either to experience, or to avoid experiencing, either positive emotions or negative emotions) would predict use of a range of dysfunctional ER strategies (assessed with the Difficulties in Emotion Regulation Scale, [DERS; Gratz & Roemer, 2004]); and whether these difficulties, in turn, would predict levels of an important negative mood state, i.e., depressive symptoms. Thus, in sum, we tested the hypothesis that particular DERS emotion regulation strategies would mediate between the four GERM emotion motives in predicting the outcome of depressive symptoms.

Specifically, we expected that the contra-hedonic motives would predict increased use of maladaptive ER strategies, which in turn would predict greater depressive symptoms.

Motives to Experience Valenced Emotions

Let us begin our discussion by considering the first construct in our model, i.e., goals that people may hold with regard to experiencing certain types of emotions. Most of the extant literature on this topic concerns specific emotions, e.g., hope or happiness. For example, it is commonplace in Western society to believe that individuals are motivated to make deliberate efforts to increase their levels of happiness. Over the last decade, authors (primarily residing in Western countries) have published a range of self-improvement books describing how to optimise happiness within one's life, reflecting the Western assumption that individuals typically seek to improve their happiness levels (Layard, 2011). In contradistinction, however, recent research has demonstrated that not all individuals are motivated to experience happiness in this presumed normative fashion. For instance, Joshanloo (2013, 2014a) has published a number of studies that have investigated the notion that some people, particularly within non-Western cultures, do not intentionally seek individual happiness, and are, in some circumstances, averse to experiencing positive mood states. Importantly, this aversion to happiness is not exclusive to non-Western cultures, and emerging research has demonstrated that sizeable numbers of individuals in Western countries often hold an aversion to happiness (Bloore et al., 2020; Gilbert et al., 2013).

An important question to consider is whether people are able to report intentions to experience or avoid experiencing *groupings of emotions beyond single emotions*. Recent research conducted by Bloore et al. (2020) sought to answer this question across the two clusters of valenced emotions (positive and negative). Their General Emotion Regulation Measure (GERM) was devised in order to investigate general emotion motives for the two broad classes of positive and negative emotions, not just specifically the avoidance of or

approach to a single emotion. They argued that trying to experience or trying to avoid experiencing groups of valenced emotions is an important basis for defining and measuring emotion motives.

Humans experience a wide array of different emotions, and their diversity results largely from a set of appraisal dimensions and features (e.g., Roseman, Spindel, & Jose, 1990; Scherer, 2013; Tamir, 2005). One of the most important appraisal dimensions that theorists use to group diverse emotions is valence, which distinguishes positive emotions from negative emotions (Roseman, 2013; Scherer, 2013; Smith & Ellsworth, 1985). Roseman, Antoniou, and Jose (1996) reasoned (and showed empirically) that positive emotions (e.g., hope and joy) are associated with events appraised as consistent with an individual's motives (their goals and preferences), whereas negative emotions (e.g., fear and anger) are associated with events appraised as motive-inconsistent. Importantly, almost the entire landscape of diverse emotions (the exception is surprise, which is not inherently valenced; Clore & Ortony, 2013) can be readily bifurcated by the important dimension of whether a situation is appraised as motive-consistent (the person is obtaining something that they want or avoiding something they do not want), or, instead, motive-inconsistent (avoiding something they want or obtaining something they do not want). Thus, in a fundamental sense, two large coherent families of emotions are discriminable from each other based on the appraisal of whether their eliciting situations are seen as goal-consistent or goal-inconsistent (Roseman, 2013).

These two broad groupings seem to have a basis in evolutionary pressures. Although humans experience emotions for a wide range of reasons (Deckers, 2018), many are generated by the organism's goals of continued existence and thriving, e.g., obtaining food, shelter, safety, and other resources (Beall & Tracy, 2017; Cosmides & Tooby, 2000). A critical function of these emotions is that they signal to the individual, as well as to their

social network, whether or not the person is adapting well to their current environment. From an evolutionary perspective (Cosmides & Tooby, 2000), it is especially important that negative emotions are marked by a contra-hedonic unpleasant emotional tone, as in the agitation and apprehension that is characteristic of anxiety. The unpleasant negative tone motivates the person to attempt to alter something about the situation until the person's relationship to the environment is more satisfactory. Similarly, the hedonic emotional tone in positive emotions (e.g., pleasure and contentment in the emotion of joy) motivates the person to maintain or create environmental conditions that give rise to these emotions again. Thus, from an evolutionary perspective, it seems that the human emotion system is fundamentally structured to motivate individuals to achieve positive emotions and to reduce negative emotions through corrective action that avoids or minimizes their occurrence.

Due to the pleasant hedonic tone associated with positive emotions, most emotion theories posit that people seek to experience positive emotions (e.g., pride). Due to the unpleasant hedonic tone associated with negative emotions, most people also seek to minimise (e.g., avoid experiencing) negative emotions (e.g., frustration). These two motives are considered *hedonic emotion motives* because a person who succeeds in achieving these goals tends to feel positive emotions (e.g., happy and relieved). However, some people some of the time report that they pursue *contra-hedonic emotion motives*, i.e., they try to avoid experiencing positive emotions and/or they try to experience negative emotions (Joshanloo, 2013).

Since the literature (e.g., Loonen & Ivanova, 2018; Tamir et al., 2020) shows that individuals choose to use particular emotion regulation strategies for the explicit purpose of experiencing or avoiding experiencing particular emotions, such as using cognitive reappraisal to avoid experiencing negative emotions (Gross & John, 2003), we developed the hypothesis that GERM-assessed motives to experience particular valenced emotions are

likely to guide and constrain the choice of particular emotion regulation strategies, which then, in turn, would predict important mood outcomes.

Dysfunctional Emotion Regulation Strategies

The second part of our theoretical model concerns emotion regulation (ER) strategies (see Figure 1). Emotion regulation is broadly defined as a process by which individuals attempt to influence which emotions they experience, when and where they have them, and how they express them. Attempting to modify emotional experiences is common (Gross, 2014) and seems to be essential for effectively navigating our daily lives. When we try to manage our emotional experiences, we attempt to regulate many aspects including behaviour, thoughts, memories, and emotions themselves (Gross, 2014; Tamir, 2016). Thus, successful emotion regulation can result in changes of speed, dynamics, and duration of emotion experiences and expressions, as well as the behavioural, physiological and experiential consequences of an emotion (Gross, 2014, 2015a, 2015b).

The effectiveness of ER use has been conceptualised as contextually determined (Bloch et al., 2010), i.e., no one strategy works in all situations nor are there strategies that are ineffective in all situations. At the same time, however, ER selection and use are not entirely constrained by context; research indicates that particular ER strategies are generally effective or ineffective across diverse contexts (Gross, 2014). "Effective" or "adaptive" emotion regulation, e.g., cognitive reappraisal, is associated with and predictive of better psychological states and outcomes (Gross & John, 2003). "Ineffective" or "dysfunctional" emotion regulation, e.g., expressive suppression, conversely is associated with and predictive of poor psychological outcomes (Gross & John, 2003). Thus, several specific styles of emotion regulation are generally linked to wellbeing, mental health, and rewarding social relationships in predictable ways (DeSteno, Gross, & Kubzansky, 2013; Gross, 2014). On the other hand, disruptions or blockages of adaptive or adoption of dysfunctional ER efforts are

associated with symptoms of dysfunction, with these emotion regulation strategies predicting a wide range of outcomes including suicidality, aggression, eating disorders, and substance abuse (Fox et al., 2008; Nolen-Hoeksema, 2012). The present study focuses on the choice and consequences of using dysfunctional ER strategies.

Emotion dysregulation can be the product of habitual emotion regulation patterns that disrupt optimal functioning due to their deleterious impact on attention and interpersonal relationships. One of the most frequently used ER measures is the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). It was developed in order to capture a variety of maladaptive strategies involving deficiencies in awareness, understanding, or acceptance of emotions. The measure assesses the impaired ability to flexibly regulate, control, and manage an emotional response (Gratz & Roemer, 2004). The DERS is a widely implemented ER measure, and, to date, the literature contains over 6,000 citations of research using this scale to assess emotion dysregulation. The measure is based on principles grounded in cognitive behavioural therapy, and it consists of six subscales: 1) lack of emotional awareness, 2) lack of emotional clarity, 3) emotion-related difficulties in goal-directed behaviour, 4) difficulties in impulse control, 5) non-acceptance of emotional responses, and 6) limited access to emotion regulation strategies. Previous research has consistently demonstrated that the DERS average score yields a significant positive correlation with indices of psychopathological symptoms (Werner & Gross, 2010). This oft-replicated finding indicates that emotion regulation dysfunction plays a key role in triggering or supporting psychological disorders such as anxiety and depression.

Depressive Symptoms as an Outcome of Dysfunctional Emotion Regulation Strategies

Within the literature, DERS is repeatedly found to be associated with many psychological disorders and states of ill-being, especially depression (Aldao et al., 2014; Gross & Munoz, 1995; Hofmann et al., 2012; Visted et al., 2018). Depressive symptoms

show consistent associations with all of the DERS facets aside from lack of awareness. In other words, the more types of dysfunctional ER strategies a person uses, the more depressive symptoms they are likely to report (Paulus et al., 2016; Saxena, Dubey, & Pandey, 2011).

Do emotion motives similarly predict depressive symptoms? Little research has been devoted to this topic, but Bloore et al. (2020) have demonstrated that individuals who held contra-hedonic motives (e.g., trying to experience negative emotions and trying to avoid positive emotions) also reported higher levels of depressive symptoms. Thus, taken together, it seems that significant (possibly mediational) associations among emotion motives, dysfunctional ER strategies, and negative mood may exist but none have been tested or reported yet.

Possible Relationships among Emotion Motives, Dysfunctional Emotion Regulation Strategies, and Depressive Symptoms

Although it seems that no published studies yet exist that examine empirically how these three constructs are associated with each other, we did find a useful theoretical guide for tackling this issue. Tamir et al. (2020) have argued that "emotion regulation is motivated," i.e., that goal setting and goal striving can individually and jointly inform and guide the choice and use of particular ER strategies, which, in turn, are likely to lead to particular emotional outcomes. Goal setting, in their theoretical account, would include the GERM emotion motives, for example, one's desired end-goal may be to experience positive emotions. Their second component, goal striving, encompasses selection and implementation of particular ER strategies to achieve these desired end-goals. Tamir et al. note that dysfunctional ER strategies may "result from deficits in goal setting" (p. 117). For example, the two contra-hedonic goals tapped by the GERM (trying to experience negative emotions and trying to avoid experiencing positive emotions) may be understood as goal-setting deficits, which could be associated with endorsement of the use of dysfunctional ER efforts

as assessed by the DERS. Tamir et al. also commented that problems in goal striving may be a critical flaw in an individual's approach to situations: the person may lack effective ER skills (what they term "limited access to ER strategies"), or the person may lack effective ER strategies (e.g., "lack of emotional clarity" or "difficulty in goal-directed behaviour"). As no previous research has examined associations between goal setting based on valenced emotions and specific dysfunctional ER efforts, it is unclear whether or how these facets may be empirically associated. As Tamir et al. noted, "Understanding how emotion goal setting and striving contribute, separately and together, to emotional dysfunction is an important challenge" (p. 117).

A remaining piece of the puzzle is the relationship between DERS subscales and depressive symptoms (see Figure 1). DERS average scores consistently demonstrate positive correlations with a range of maladaptive outcomes, e.g., depression (Fowler et al, 2014; Gratz & Gunderson, 2006; Gratz & Roemer, 2006; Gratz, Moore & Tull, 2016; Paulus et al., 2016). Difficulties with impulsivity (a facet of the DERS) has shown strong links with depressive symptoms in individuals suffering from borderline personality disorders (Renneburg et al., 2005; Richmond, Tull, & Gratz, 2020). Although we used a community sample in the present study, the thrust of the literature suggests that impulsivity may play a role in the relationship between the two contra-hedonic GERM motives and depressive symptoms. Additionally, a brief report by Atherton, Nevels, Reobert, and Moore (2015) highlights how other specific difficulties in emotion regulation, particularly lack of access to emotion regulation strategies and lack of emotional clarity, are significant predictors of depressive symptoms.

Within the literature, positive correlations with depression are found with five of the six subscales of the DERS, the exception being lack of emotional awareness (Fowler et al 2014; Paulus et al., 2016; Saxena, Dubey, & Pandey, 2011; Visted et al., 2019). The facet of lack of emotional awareness often does not show a positive correlation, or yields inconsistent

results, with maladaptive outcomes; the psychometric adequacy of this subscale was evaluated in the present study. Multiple regression results reported in the literature have noted that lack of access to emotion regulation strategies was the most strongly predictive DERS facet of depression. In sum, although the research is somewhat inconsistent at the facet level of the DERS, impulsivity and lack of access to emotion regulation strategies seem to reliably predict depression, whereas lack of awareness does not consistently predict depression.

Hypotheses Tested in the Current Study

We made predictions about the associations among: 1) the four GERM emotion motives; 2) the six DERS facets; and 3) depressive symptoms. Four predictions were based on existing empirical work or theoretical claims discussed above (see Figure 1):

1. The two contra-hedonic motives of the GERM (i.e., trying to experience negative emotions and trying to avoid experiencing positive emotions) would directly and positively predict depressive symptoms.
2. The two contra-hedonic GERM motives would positively predict use of most of the DERS subscales (apart from the lack of emotional awareness facet).
3. All facets of the DERS (apart from the lack of emotional awareness facet) were expected to positively correlate with depressive symptoms, with lack of access to ER strategies expected to be the strongest predictor.
4. Based on these constituent pathways, we would also expect that several DERS facets (possibly impulsivity and lack of access to ER strategies) would be found to statistically mediate between the two contra-hedonic GERM emotion motives and depressive symptoms.

Method

Participants

Individuals were recruited from a mid-sized university in New Zealand. In order to investigate our hypotheses effectively, we needed a large sample size, so we collected data on two separate occasions and combined the datasets. Thus, we ran two separate data collection sessions (separated by a period of one year). In both sessions, participants were asked to complete an online survey that tapped a range of topics such as personality traits, positive and negative mood states, and interpersonal attributes. In both sessions, data were collected using the same instructions, and both samples consisted of undergraduate psychology students. The first sample consisted of 66 males and 196 females recruited from a first year Introductory Psychology course. The second sample was recruited from the same course, but one year later and the sample was constituted by 20 males and 95 females. Four individuals did not identify their gender. After verifying invariance, the two samples were merged, resulting in a total sample of 377 participants, which yielded statistical power sufficient to identify small effects (Cohen, 1992). The university ethics committee approved data collection procedures, and informed consent was obtained from every individual before data collection occurred. It is acknowledged that more females participated than males (75%/25%), yielding a predominantly female sample but this ratio is typical of students who take psychology as a major. We sought to take account of this asymmetry by covarying out gender in our statistical analyses.

Measures and Procedure

General Emotion Regulation Measure (GERM). Bloore et al. (2020) devised the GERM to measure the extent to which individuals try to experience and/or try to avoid

experiencing valenced emotions (positive vs. negative). The scale consists of 25 distinct emotions encompassing 12 positive, 12 negative emotions, and the hedonically neutral emotion of surprise. Surprise was included in the survey as it is commonly included in lists of the most recognised emotions within the emotion literature (Roseman, 2010), but it was not involved in construction of the four GERM facets. Individuals are asked to report how frequently in their daily lives they 'TRY to experience', and 'TRY to AVOID experiencing' 12 positive (happiness, love, enthusiasm, liking a person, determination, joy, pride, peacefulness, compassion, relief, hope, gratitude) and 12 negative (sadness, anger, disliking a person, shame, disgust, guilt, fear, contempt, regret, distress and anxiety) emotion terms. Participants were asked to indicate on a 5-point Likert scale across '*never*' (1), '*occasionally*' (2), '*about half of the time*'(3), '*most of the time*' (4) and '*all of the time*' (5) how much they try to experience and try to avoid experiencing each of the emotions listed in the GERM. Participants were given two separate pages, with each of the two main question listed at the top of the page, followed by a randomized-order list of the 25 emotions to be rated separately. All participants answered the questions in the order of 1) TRY to experience and then 2) TRY to AVOID experiencing. Based on these ratings, Bloore et al. (2020) recommend computing four averages: the extent to which an individual tries to 1) experience positive emotions (ExpPos); 2) experience negative emotions (ExpNeg); 3) avoid experiencing positive emotions (AvoidPos); and 4) avoid experiencing negative emotions (AvoidNeg). That is, the 12 items of trying to experience particular positive emotions (e.g., happiness, gratitude, hope, love, etc.) are averaged to create ExpPos, the 12 items of trying to experience negative emotions (e.g., fear, anxiety, guilt, contempt, etc.) are averaged to create ExpNeg, the 12 items of trying to avoid experiencing positive emotions are averaged to create AvoidPos, and the 12 items of trying to avoid experiencing negative emotions are averaged to create AvoidNeg. Bloore et al. (2020) found that the four GERM facets evidenced strong internal

reliability coefficients, ranging from .87 to .92. Those findings were replicated in the data collected in the present study, with Cronbach's ranging from .89 to .92.

The Difficulties in Emotion Regulation Scale (DERS). The DERS measures self-reports of failures and problems with emotion regulation, and it is used widely for adults with emotional disorders and maladaptive mental health (Gratz & Roemer, 2004). The scale consists of six subscales: 1) Non-acceptance of emotional responses (with items such as "When I am upset, I become out of control"); 2) Difficulty engaging in goal-directed behaviour, (e.g., "When I am upset, I have difficulty thinking about anything else"); 3) Impulse control difficulties (e.g., "When I am upset, I have difficulty controlling my behaviours"); 4) Lack of emotional awareness (e.g., "I pay attention to how I feel" [reversed]); 5) Limited access to emotion regulation strategies (e.g. "I pay attention to how I feel" [reversed]); and 6) Lack of emotional clarity (e.g., "I am confused about how I feel"). Response options on the 5-point Likert scale range from 1 indicating "*almost never*" to 5 indicating "*almost always*". The scale has demonstrated excellent internal reliability, yielding a Cronbach's alpha of .93. The literature shows that the facet of lack of emotional awareness has compromised the psychometric properties of the DERS, often being removed from analysis from both the full and brief measure (Fowler et al., 2014; Moreira, Gouveia, & Canavarro, 2020). The Cronbach's alpha for the whole scale for the current sample was .95.

Depressive symptoms. To measure depressive symptoms, a modified version of The Centre for Epidemiological Studies - Depression scale was used (CES-D; Radloff, 1977). The scale originally included 20 items, however, due to significant time limitations in the present research, nine of the most heavily loading items were selected for the current data collections. Individuals were asked to indicate, using a 4-point Likert scale, how much they experienced depressive symptoms such as, "I got upset by things that don't normally upset me", and "I could not stop feeling bad, even when others tried to cheer me up". Response alternatives

were: '*Less than one day' (1), ' Some or little of the time 1-2 days (2)', Occasionally or a moderate amount of time '3-4 days (3)',* and *Most or all of the time,'5-7 days'* (4). The CES-D has demonstrated good internal reliability with Cronbach's alphas being reported from .85 to .90 (Al-Modallal, Abuidhail, Sowan, & Al-Rawashdeh, 2010). The Cronbach's alpha for the current sample was .88.

Analytic Plan

First we conducted confirmatory factor analyses in order to verify the factor structure of the scales used for emotion motives, difficulties in emotion regulation, and depressive symptoms. Second, to test our hypotheses, we constructed and estimated an observed variable path model in which the ability of GERM facets to predict depressive symptoms, as mediated by DERS facets, was examined.

Results

Descriptive Statistics

Descriptive statistics, including the means, standard deviation, and correlations, are presented in Table 1. As expected, GERM facets were intercorrelated similarly to those observed by Bloore et al. (2020). That is, the two hedonic motives (AvoidNeg and ExpPos) correlated positively, and the two contra-hedonic motives (AvoidPos and ExpNeg) correlated positively as well. In addition, our first hypothesis was supported in that the contra-hedonic motivations correlated positively with depressive symptoms (.25 and .22, respectively), along with all of the DERS emotion regulation difficulty facets (.12 to .37). DERS facets correlated among themselves with small to moderate positive correlations. And as expected, correlations between the DERS facets with depressive symptoms were consistent with previous published studies (Hallion et al., 2018; Paulus et al., 2016).

Treatment of Missing Data

Missing data constituted less than 1% of the entire dataset, and Little's MCAR test revealed that these missing values were missing completely at random, $p > .20$. Expectation-Maximization (EM) imputation was conducted on the small number of missing values in order to maximise statistical power (Lin, 2010). All analyses were performed on the imputed dataset.

Confirmatory Factor Analysis on the GERM and Depressive symptoms

In order to verify that the GERM and CES-D measures possessed good content validity, a confirmatory factor analysis of the main four factors of the GERM and the average score of the CES-D scale were conducted with a single CFA. In order to conduct the CFA, a parcelling technique was used for each of the four GERM facets and for the CES-D average score. Previously, research has shown that the parcelling of items yields several advantages over CFAs which are performed on individual items. In particular, the parcels better conform than individual items to the assumption of continuousness, correlated redundant error is avoided, and, as a result, parcels result in stronger loadings on the latent construct than individual items (Little, Cunningham, Shahar, & Widamon, 2002).

The CFA analysis was run in Amos Ver. 24 (Arbuckle, 2016), and results indicated a good-fitting model, $\chi^2/df = 2.68$, sRMR = .062, IFI = .97, CFI = .97, RMSEA = .067. Standardised regression weights for the parcel loadings ranged from .78 to .94, indicating that the parcels loaded on the designated five distinct facets strongly within the model as predicted.

Confirmatory Factor Analysis of the DERS scale

The six facet model proposed by Gratz and Roemer (2006) was initially tested in a CFA analysis (see all six facets in Figure 1). Model fit for the full six facets of the DERS yielded a substandard CFI of .94 (lower than the expected .95) and an RMSEA of .088

(higher than the typical .07 cut-off). Modification indices revealed that the two facets of lack of clarity and lack of emotional awareness shared a high amount of variance, and the modification indices output recommended combining these facets or removing one facet. Previous research has demonstrated that when lack of emotional awareness is removed from the DERS, the scale's CFA fit indices significantly improve (Hallion, 2018). Therefore, in order to address issues with model fit and to be consistent with previous research, the facet of lack of emotional awareness was removed. Model fit for the DERS with the lack of awareness facet included was: χ^2/df = 3.92, IFI = .94, CFI = .94, RMSEA = .09. When the lack of awareness facet was removed from the model, the model fit improved to acceptable levels: χ^2/df = 3.28, IFI = .96, CFI = .96, RMSEA = .07.

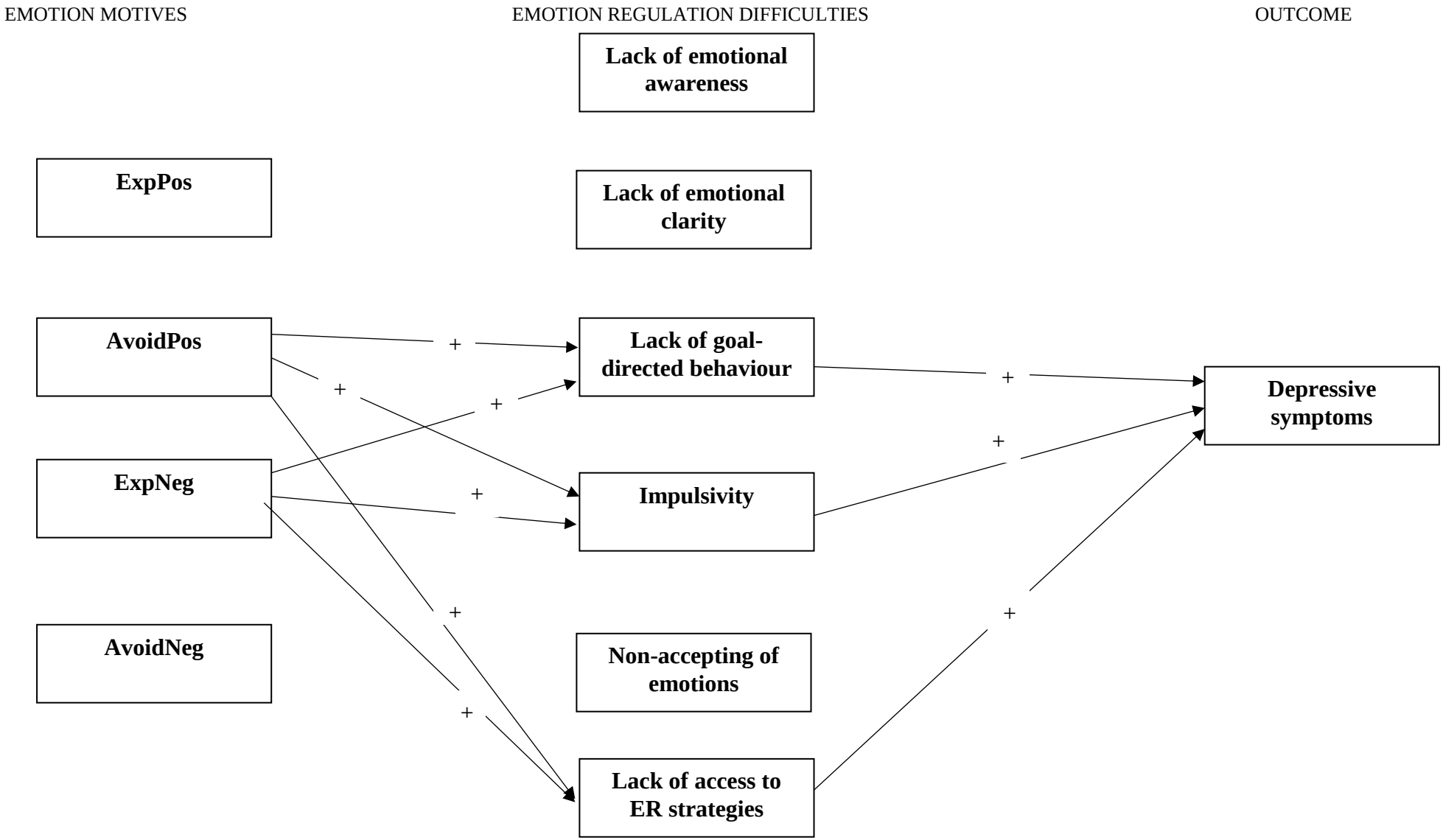

Figure 1. *Predicted mediations between the contra-hedonic GERM motives, emotion dysregulation and depression.*

Basic relationships: Which emotion motives predicted which DERS sub-factors along with depressive Symptoms?

The descriptive statistics in Table 1 suggest that three out of four of the emotion motives (namely AvoidPos, ExpNeg, and ExpPos) correlated in a bivariate fashion significantly with depressive symptoms. However, a multiple regression, which controls for shared variance among simultaneous multiple predictors, suggested that only two predictors were statistically significant: ExpNeg, $\beta = .16$, $p = .014$, and AvoidPos, $\beta = .14$, $p = .030$. ExpPos, in the regression analysis, was revealed to be a non-significant predictor, $p > .05$. Thus, as predicted in Hypothesis 1, two basic relationships—both contra-hedonic motives—posed the potential for being mediated. Hypothesis 2 was also supported, with all of the DERS facets showing significant positive correlations with the two contra-hedonic GERM motives.

Table 1.
Descriptive Statistics and Correlations among the Four Facets of the GERM, the six facets of the DERS and Depression

	Four GERM motives					Difficulties in emotion regulation						Depressive symptoms
	1	2	3	4	5	6	7	8	9	10	11	12
1.AvoidPos	-	.56***	-.24***	-.10		.35***	.28***	.14**	.37***	.30***	.30***	.25***
2.ExpNeg		-	-.00	-.21***		.24***	.30***	.13**	.19***	.12*	.28***	.22***
3. ExpPos			-	.48***		-.05	-.03	-.03	-.17***	-.28***	-.09	-.12*
4.AvoidNeg				-		.03	-.06	.04	-.06	-12*	-.05	-.05
5.DERS Total					-	.47***	.53***	.32***	.44***	.22***	.61***	.57***
6.Non-acceptance						-	.57***	.48***	.57***	.41***	.71***	.47***
7.Impulsivity							-	.57***	.51***	.23***	.30***	.53***
8.Difficulty with Goals								-	.40***	.12*	.61***	.32***
9.Lack of Clarity									-	.55***	.57***	.44***
10.Lack of Awareness										-	.34***	.22***
11.Limited access to strategies											-	.61***
12.Depressive symptoms												-
Mean	1.58	1.48	3.71	3.71		2.51	2.15	3.27	2.44	2.56	2.41	2.01
SD	(.54)	(.50)	(.77)	(.91)		(1.02)	(.89)	(.91)	(.84)	(.88)	(.95)	(.69)

AVOIDPOS = try to avoid experiencing positive emotions; AVOIDNEG = try to avoid experiencing negative emotions; EXPPOS = try to experience positive emotions; EXPNEG = try to experience negative emotions. DERS total = Difficulties in Emotion Regulation Scale, the six subscales of the DERS and depressive symptoms.

Concurrent Mediation of DERS Average Score between the GERM Motives and Depressive Symptoms

Before mediations involving the individual subscales of the DERS were examined, a mediation involving the DERS average score was first investigated. A path model was tested to determine whether overall difficulties in emotion regulation mediated between the four GERM motives and depression. It was expected in Hypothesis 2 that the contra-hedonic GERM motives would positively predict overall difficulties in emotion regulation, which, in turn, would also positively predict depressive symptoms (Hypothesis 3). After the fully saturated model was run, the model was pruned systematically of all non-significant paths (i.e., *p*-values less than .10). Results partially supported the prediction that difficulties in emotion regulation would mediate the associations between contra-hedonic motives and depressive symptoms. The final model showed that overall difficulties in emotion regulation significantly mediated the relationship between trying to avoid positive emotion (AvoidPos) and depressive symptoms: $a*b = .25$, $se = .07$, 95%CI = [.16, .35], $p < .001$. The second predicted mediation, i.e., trying to experience negative emotions (ExpNeg) to depressive symptoms, did not reach significance. However the relationship was in the expected direction, and yielded a marginally significant result: $a*b = .08$, $se = .07$, 95%CI = [.01, .17], $p < .09$). Notably, direct effects from the contra-hedonic GERM motives to depression were not significant in the presence of the estimated indirect effects, suggesting that the zero-order correlations reported between the GERM motives and depression were explained by the mediation of the overall DERS score.

Concurrent Mediations of DERS Facets between the GERM Motives and Depressive Symptoms

In order to examine Hypothesis 4, a path model was constructed testing the proposed mediations by DERS facets (excluding lack of emotional awareness, as explained above)

between the GERM motives and depressive symptoms. First, a fully saturated model was estimated, and a total of 22 non-significant and 8 significant relationships were found. Pruning non-significant paths in path models is recommended (Hoyle, 1995) to simplify complicated models, so non-significant paths were removed until only significant paths remained. The resulting model (see Figure 2) demonstrated excellent model fit, χ^2/df = 0.35, sRMR = .004, IFI = 1.00, CFI = 1.00.

EMOTION MOTIVES EMOTION REGULATION DIFFICULTIES OUTCOME

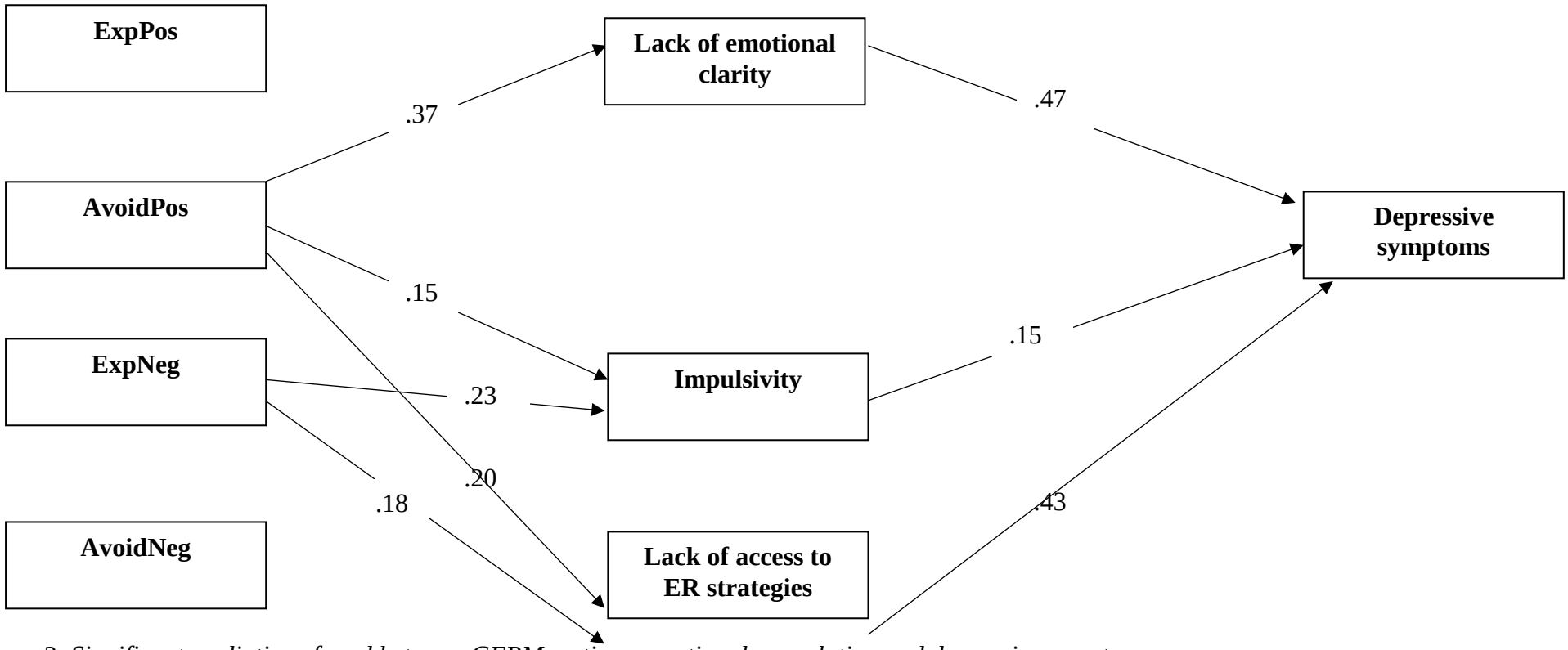

Figure 2. *Significant mediations found between GERM motives, emotion dysregulation and depressive symptoms*

Main effect relationships. As noted in the previous model, no significant c` (c prime) relationships were found. In other words, none of the four GERM facets manifested a significant direct association with depression when indirect effects involving DERS facets were included in the model. Thus, it can be argued that DERS facets significantly explained the bulk of the basic relationship between GERM motives and depressive symptoms. As expected, the two contra-hedonic motives evidenced significant prediction of several DERS facets. Avoiding positive emotions (AvoidPos) significantly and positively predicted lack of impulse control, limited access to emotion regulation strategies, and lack of emotional clarity. Trying to experience negative emotions (ExpNeg) predicted lack of impulse control and limited access to ER strategies. In turn, all three of these DERS facets were positively predictive of depressive symptoms. This pattern of results strongly suggests the presence of several significant mediations.

Indirect effects (mediations). In total, five significant indirect effects were identified in this model (see Table 2). In all five cases, a contra-hedonic motive positively predicted one of three DERS facets, which then positively predicted depressive symptoms. For example, lack of impulse control significantly mediated the relationship between trying to avoid experiencing positive emotions (AvoidPos) and depressive symptoms (p = .011). Trying to avoid positive emotions predicted higher levels of lack of impulse control, which, in turn, predicted higher depressive symptoms. Clearly, and as predicted, the strongest mediations involved the facet of lack of ER strategies. This DERS facet strongly mediated both AvoidPos and ExpNeg in predicting depressive symptoms (both ps < .001). Albeit somewhat weaker, the facet of lack of impulse control mediated both contra-hedonic motives as well. And finally, lack of emotional clarity mediated only the motive of trying to avoid experiencing positive emotions. This set of findings supports Hypothesis 4, and our suggestion that both lack of impulse control and lack of access to emotion regulation

strategies would play a role in mediating the relationship between the GERM and depressive symptoms.

Table 2. *Mediations reported between the DERS facets and the GERM-Depressive symptoms relationship.*

IV	MedV	a*b (se)	95% CI	p-value
AvoidPos	Lack of impulse control	.029 (.02)	.005, .074	.011
AvoidPos	Lack of ER strategies	.117 (.04)	.056, .199	<.001
AvoidPos	Lack of clarity	.059 (.03)	.012, .115	.012
ExpNeg	Lack of impulse control	.048 (.02)	.011, .106	.007
ExpNeg	Lack of ER strategies	.112 (.04)	.050, .188	.001

Note. IV = independent variable; MedV = mediating variable; a*b = estimate of indirect effect; se = standard error; AvoidPos = trying to avoid experiencing positive emotions; ExpNeg = trying to experience negative emotions.

Discussion

If, in fact, a person's choice of emotion regulation strategies is 'motivated', as Tamir et al. have argued (2020), then we need to know why individuals choose particular strategies. The present study was designed to examine whether emotion motives assessed by the General Emotion Regulation Measure (GERM) would be useful in determining the reasons for choosing certain types of dysfunctional emotion regulation and the associated mood outcome of depressive symptoms. A path analysis investigating the linkages among these three constructs revealed interesting new empirical information about these relationships. Five mediations were identified: three DERS facets (namely lack of ER strategies, lack of clarity, and lack of impulse control) mediated the associations between the two contra-hedonic motives (namely trying to avoid positive emotions and trying to experience negative emotions) on the outcome of depressive symptoms, accounting for 40% of the dependent variable. Although some authors (e.g., Nordgren, 2020) have argued that only the overall DERS score should be used in research (ignoring the individual facets), our results suggest that examining the facets can prove to be illuminating. Although a significant mediation was noted in the initial path model involving AvoidPos and the overall DERS score, the subsequent path model showed that more and varied mediations were identified when explored at the facet level.

As expected, the two contra-hedonic motives were positively associated with depressive symptoms (Hypothesis 1). A follow-up regression analysis, controlling for shared variance between these two contra-hedonic motives, identified both as significant predictors. That is, both trying to avoid positive emotions (AvoidPos) and trying to experience negative emotions (ExpNeg) contributed significant unique variance in predicting depressive symptoms. These findings are consistent with previous research (Bloore et al., 2020; Gilbert et al., 2012; Joshanloo, 2014), and point out the importance of considering both contra-

hedonic motives in predicting negative outcomes rather than averaging these two motives. The results show that the motive of trying to avoid experiencing positive emotions was not redundant with the motive of trying to experience negative emotions in predicting depressive symptoms. This finding is consistent with the view of depressive symptoms as embodying both negative affect and an inability to experience positive emotion, i.e., anhedonia (Cooper, Arulpragasam, & Treadway, 2018), but future work should verify that both of these two emotion motives robustly predict depressive symptoms across samples and time periods.

Furthermore, consistent with Hypothesis 2, the zero-order correlations between the two contra-hedonic motives (AvoidPos and ExpNeg) and all six DERS facets were all positive and statistically significant (see Table 1). Individuals endorsing higher levels of trying to avoid positive emotions and trying to experience negative emotions were likely to endorse higher levels of all dysfunctional ER strategies, whereas the two hedonic motives were largely unrelated (or negatively related) to the DERS facets. Clearly, individuals who reported using ineffective and counterproductive ER strategies also held stronger motives to engage with and experience negative emotions, consistent with findings from Bloore et al. (2020).

Hypothesis 3 proposed that all DERS facets would be significantly and positively associated with the measure of depressive symptoms, and zero-order correlations reported in Table 1 supported this prediction as well. Many of these associations were strong, and the relationship for lack of access to ER strategies was particularly strong. This broad pattern of associations is consistent with much previous work on these two measures (e.g., Paulus et al., 2016).

These three sets of associations set the stage for testing possible mediations in that Hypothesis 1 estimated the size of the total effect (*c path*), Hypothesis 2 estimated the *a path* (IV to MedVs), and Hypothesis 3 estimated the *b path* (MedVs to DV). A thorough

investigation with mediation analyses at the DERS facet level revealed five significant indirect effects (see Table 2). Consistent with previous research linking impulsivity with maladaptive mood outcomes (Bloore et al., 2020; Gratz et al., 2006; Richmond, Tull, & Gratz, 2020), the present results supported the prediction that impulsivity plays a significant role in explaining the relationships between both contra-hedonic emotion motives and depressive symptoms. Similarly, perceived lack of access to ER strategies also consistently yields a positive relationship with depression (Paulus et al., 2016; Saxena et al 2011). And last, a mediation pathway was identified that involved lack of emotional clarity: this facet was found to mediate the relationship between avoiding positive emotions and depressive symptoms. This relationship was not predicted. However previous studies looking specifically at lack of emotional clarity and depressive symptoms have shown that across time, deficits in emotional clarity result in increases in later depressive symptoms (Flynn & Rudolph, 2011). What is new here is that we showed that trying to avoid positive emotions set in motion the choice of this ER reaction.

Thus, three of the five DERS facets explained significant shared variance between GERM emotion motives and depressive symptoms. Can we explain these overlaps? An example of an impulsivity item is “I experience my emotions as overwhelming and out of control”, an example of a lack of access to emotion regulation strategies item is “When I’m upset, I believe there is nothing I can do to make myself feel better”, and a lack of emotional clarity item is “I am confused about how I feel”. All three sets of items tap a sense of helplessness and lack of control in the face of strong, presumably negative, emotions. Our findings suggest that individuals who hold contra-hedonic emotion motives are also likely to endorse these three DERS facets. A person-centered analysis performed in the Bloore et al. (2020) study identified two non-normative groups who endorsed these two contra-hedonic motives at a higher rate than the normative group: they were labelled the ‘fear of happiness’

and ‘non-regulating’ groups. Although research needs to be performed on this question, it is quite possible that individuals who seek out negative emotions and avoid positive emotions (i.e., the fear of happiness group) and individuals who do not seek to regulate their positive or negative emotions much at all (non-regulating group) may also be individuals who report high levels of DERS scores. A direct implication of these results is that assessment of emotion motives (like the GERM) may be useful in identifying individuals who are at risk for adopting the particular maladaptive ER styles/strategies described in the DERS. By doing so, we may be able to intervene proactively to blunt the development of depressive symptoms.

Implications and Limitations of Findings

Tamir’s (2016) claim that choice of emotion regulation strategies is motivated was supported by the identification of linkages between emotion motives and facets of the DERS. The downstream impact of emotion motives was shown in the observed relationships between facets of the DERS and depressive symptoms. The empirical verification that emotion motives predict differences in ER strategies has the capacity to shed important light on determinants of emotion regulation. It may be particularly valuable for understanding dysfunctional ER strategies. Currently there is ample research that demonstrates that people who use a range of dysfunctional emotion regulation styles also report high levels of negative mood states and behaviours, but little is known about what motivates people to engage in those ER strategies. The present empirical findings and related theoretical perspectives (Tamir et al., 2020) suggest that the role of contra-hedonic motives may be considered as a trigger. It seems that it is not the absence of hedonic motives but the presence of contra-hedonic motives that predicts use of dysfunctional ER strategies. Additional investigations using the GERM to identify motives for experiencing or avoiding emotions could help resolve many questions in research and clinical practice about why people choose particular ER strategies.

Several limitations of the current study should be acknowledged. First, the use of cross-sectional data means that causality cannot be determined from our analyses (Jose, 2013). Nevertheless, our mediational analyses did reveal important (predicted) associations between GERM motives and DERS facets. A replication of this model with longitudinal or daily diary data is advised, preferably with three or more time points as three-wave datasets provide a more sensitive analysis of mediation relationships (Jose, 2016). Second, a more even gender ratio would be recommended, especially as some aspects of emotion regulation are sometimes gender-based (Ritschel et al., 2015). Also, our sample was a college student sample with a narrow age-range. Giromini et al. (2017) have noted that DERS scores decrease with age, therefore studies comparing participants of differing ages may yield useful findings across the life-span. Cross-cultural studies examining the relationships among the GERM, DERS, and depression would also shed light on any key cultural differences in ER use. And last, research on the precursors of emotion motives would helpfully elucidate why certain individuals are more likely to endorse the counterintuitive contra-hedonic motives.

Conclusions

The current research was conducted in order to investigate the relationships among general emotion motives, difficulties in emotion regulation, and depressive symptoms. Results indicated that the associations between contra-hedonic motivations (i.e., trying to avoid experiencing positive emotions and trying to experience negative emotions) and depression symptoms were both significantly mediated by two dysfunctional emotion regulation stances, i.e., impulsivity and limited access to emotion regulation strategies. Lack of clarity also mediated the relationship between the contra-hedonic motive of positive emotion aversion and the outcome of depressive symptoms. These findings suggest that non-optimal goal-setting, e.g., trying to experience a negative emotion, may underlie the choice to use certain types of maladaptive emotion regulation strategies. Further, these results

underscore the importance of understanding the motives people hold with regard to trying to experience (or not to experience) particular types of valenced emotions, as these motives constrain ER strategy selection and subsequent mood outcomes.

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General Discussion

The three studies constituting the present thesis were designed to investigate and propose new ways of exploring how individuals are motivated to experience positive and negative emotions. Tamir et al. (2020) have argued that it is critical to address how people are motivated to (and then actually) regulate their emotions as emotion is central to our everyday lives (Damaiso, 1994). Emotions guide and enable us to deal with our surroundings and interact with others in effective ways (Gross, 2014). Although it is typically expected that individuals try to experience the positive and try to avoid the negative, not all individuals experience or act upon these hedonic motivations (Bloore et al., 2020). The happiness aversion research highlights that not all people hold hedonic motivations, and this important exception sets the foundation for the investigation into how some people hold and use contra-hedonic motives (Joshanloo & Weijers, 2014). Importantly, this research shows that individuals who hold contra-hedonic motivations are also likely to report higher levels of depression and low levels of life satisfaction (Joshanloo, 2013).

Contra-hedonic motives

A unifying theme among the three studies was the investigation of the understudied contra-hedonic motives for emotion. We began in Study 1 with an examination of the ‘fear of happiness’. The happiness aversion literature laid out by Joshanloo’s work (at least one of his citations) and Gilbert (citation) set the precedence for research into contra-hedonic

motivation investigated in this thesis. It highlighted important attitudes that some individuals have concerning approaching or avoiding happiness, namely it showed that the motive to avoid experiencing happiness was predictive of lessened hope and increased depressive symptoms and the work presented within all three of these papers developed this idea further.

The first paper within this series (Study 1) provides valuable insight into how hope, a protective factor, can mediate and moderate the relationship between the contra-hedonic motive of happiness aversion and depressive symptoms. The results suggest that hope can both mediate happiness aversion on depressive symptoms as well as moderate this relationship. Within a large concurrent dataset, hope was first identified to mediate the relationship between happiness aversion and depression. It was found that happiness aversion predicted lower hope, which in turn was predictive of higher levels of depression symptoms. And second, hope additionally mitigated the strength of the relationship between happiness aversion and depressive symptoms within a moderation analysis. Thus, the two analytic approaches illustrated how hope can manifest different effects depending on how this third variable is considered. These findings were also replicated within a small longitudinal sample, suggesting that these effects can be found over time. Not only did our finding support a research result found by Gilbert et al. (2012), namely that happiness aversion is significantly and positively related to depressive symptoms, it contributes new insight into how protective factors such as hope can impact or reduce the association between happiness aversion and depression. At the end of this paper we discussed how therapists can use hope as a strategy to help people who hold this contra-hedonic motive. Hope therapy, for instance (Rahimipour, Shahgoian, & Yazdanci, 2015), has been previously shown to play a protective role in anxiety, stress and depression, however it can also serve to blunt, buffer and protect against the adverse effects of happiness aversion.

Aversion to happiness is just one aspect of emotion motivation: The development of the GERM measure

The GERM in Study 2 was designed in order to assess how individuals are motivated to experience or avoid both positive and negative emotions in broad valenced clusters. The GERM was designed to measure what we believe are four key emotion regulation motives including efforts to: 1) try to experience positive emotions; 2) try to avoid experiencing negative emotions; 3) try to experience negative emotions; and 4) try to avoid experiencing negative emotions. We predicted that these four emotion motives, in an individual differences analysis, would likely yield clusters of individuals who espouse these views in at least two different ways: hedonic motivation (try to experience positive emotions and try to avoid experiencing negative emotions) and contra-hedonic motivation (try to experience negative emotions and try to avoid experiencing positive emotions). In other words, the question was asked as to whether individual differences could be reliably found in the ways in which people are motivated to approach and avoid positive and negative emotions. In fact, latent profile analysis identified three distinct profiles of individuals: a normative group, a happiness aversion group, and a non-regulating group. The normative group engaged in higher levels of experiencing emotions in the ways we would expect, i.e., adopting hedonic motivations towards valenced emotions. These individuals also reported higher levels of wellbeing and higher subjective happiness overall. The happiness aversion group expressed contra-hedonic motivations (both trying to experience negative emotions as well as trying to avoid positive emotions), and also reported correlates of poor mood (e.g., depressive symptoms, anxiety, and related states). The third group, the non-regulating group, did not strongly embrace either hedonic or contra-hedonic motives, instead they either could not or would not regulate their emotions. This third group was interesting as throughout the literature it is suggested that that all individuals try to regulate their emotions (Gross, 2014).

The normative and happiness aversion group reflected alternative methods of emotion regulation, however these individuals did not regulate at all and the valence of emotions didn't really influence their regulation. Within future research it would be illuminating to discover what drives these individuals to regulate their emotions, do they just take emotions how they present themselves, with no motivation present? Are they frustrated with emotions so ignore any time of motivation to experience them? Insights into this third group would be valuable for future research.

Another interesting new finding that we observed within these profiles is that those individuals who reported a significantly higher amount of maladaptive outcomes, such as depressive symptoms, not only reported trying to avoid positive emotions, but they also tried to experience negative emotions. Happiness aversion research has focused on the former, but the latter motive may be just as important if not more so. This finding suggests that the link between happiness aversion and depression may be multiply motivated and more complicated than previously thought. By identifying the four basic emotion motives, it is possible to identify multiply-determined emotion regulation strategies.

Hedonic and contra-hedonic motives and their relationships with ER dysregulation and depression

The first two studies highlight that we should investigate the contra-hedonic emotion motives and just what relationships they have with depressive symptoms and other negative mood states. In this vein, the third study focused on identifying linkages between the four emotion motives and a range of different maladaptive emotion regulation strategies (captured with the DERS scale). Also, depressive symptoms have been the main outcome investigated in previous research (Gilbert et al., 2012) as well as the two previous studies here, therefore focusing on depressive symptoms as an outcome within the final paper seemed the most logical path to continue. As previously discussed, effective or adaptive emotion regulation is

important within our everyday lives to guide us in decision making and shaping our environment and social situations as well as our own cognitive state in order to achieve optimal mood outcomes (Gross, 2014). In the opposite direction, emotion *dysregulation* has been demonstrated to yield many psychologically damaging effects to overall wellbeing and mental health (Visted et al., 2018), and for that reason, we sought to examine how the four GERM emotion motives predict different facets of dysregulated ER, which would then yield relationships in predicting depressive symptoms.

In the final paper within this thesis we considered emotion dysregulation as a mediator between the four GERM motives and depressive symptoms. Based on the considerable evidence that suggests that depressive symptoms are increased when a person exhibits maladaptive emotion dysregulation (Aldao et al., 2014; Gross & Munoz, 1995; Hofmann et al., 2012; Visted et al., 2018), we predicted that difficulties in ER would play a mediating role in the motive-depressive symptom relationship. Additionally, if contra-hedonic motives predict negative outcomes, one might expect hedonic motives not to be involved in any significant pathways in this tested path model. Results supported this expectation in that contra-hedonic motives were the only motives to be related to ER difficulties and the outcome. These results, along with findings of the second paper, suggest that BOTH contra-hedonic motives play a direct important role in regards to setting in motion judgements and experiences and lead to negative mood outcomes.

General critiques and contextualizing the findings in the literature

The foundation of this research was to suggest a simpler and broader way of investigating motives towards valenced emotion (Bloore et al. 2020). Currently, papers into motivations within the field of ER more specifically tackle instrumental goals (Tamir, 2020). An example of an instrumental goal is where someone may alter or change their behaviour depending on a desired outcome or goal (Tamir, 2016). For example, if you are trying to get a

promotion at work, you might be more motivated to portray a positive image so you would actively try to experience more *positive* emotion than negative in order to achieve a specific outcome. Although very complex to measure, this approach is an important consideration when investigating emotion motivation, and future studies should consider how the individual differences with emotion regulation motivation identified in paper two play a role in affecting how people use *instrumental* emotion regulation goals. The role of instrumental goals is a relatively new area of study, however it is one that can illuminate much about ER strategies and it has direct implications on how we manage our emotions. Arguably there could be a range of different goals and individual emotion regulation motives at play when exploring emotion, so careful consideration needs to be made in how we investigate this topic in the future.

In a similar vein, examining the GERM across time in a daily diary study is critical to consider the contextual nature of emotions. Wilms, Lanwher, and Kastenmuller (2020) have recently examined emotion regulation in everyday life, with a key focus on goals and situational factors. They found that emotion goals have an important functional association with strategies regarding pro-hedonic and social goals. There seems to be a gap in the literature for future research to examine how individual motives for valenced emotion in the form of the GERM, inform daily emotion regulation goals Research directly investigating this topic will no doubt widen and deepen our understanding on these emotional processes.

Recent research by Ottenstien (2020) also highlights how some people identify emotions in nuanced distinct ways, whereas others group emotions into the two basic groups of pleasant and non-pleasant. In other words, there are individual differences in the sophistication in which people perceive and experience the world of emotions. It is important to consider this potentially confounding variable when investigating the GERM in future

studies. Do individuals who sensitively differentiate emotions report different ER strategies and emotion motives? Additionally, what are the implications for their presentations of depressive symptoms and general wellbeing?

Other scales concerning emotion motives are being published at this time. A measure similar in some respects to the GERM is the Emotion Regulation Goals Scale (Elessouky & English, 2019), which has been recently published within the instrumental emotion regulation literature. It is important to note that the GERM is designed to ask questions about general motivations, whereas the ERGS scale seeks to contextualise emotion motives. For example, one of the items presented in the Emotion Regulation Goals Scale is, 'When you are regulating your emotions, how often do you do so because you want 1) "To feel less negative emotion (e.g. anger, sadness)" alongside other items such as 15) "To avoid being rejected by others". This scale is designed to assess a variety of emotion characteristics such as contra-hedonic, performance, pro-social and impression management behaviours, whereas the GERM is designed to measure general emotion motivations. Incorporating the GERM and Emotion Regulation Goals Scale in the same study could be the first step in investigating the links between emotion motives with specific instrumental goals.

Limitations and future research

Throughout all three papers, issues that arise from obtaining data entirely from self-report measures are noted. As well, although a small sample of longitudinal data was included in Study 1, the majority of the results were based on cross-sectional data. Causality or temporal relationships cannot be determined from analyses based on data that are cross-sectional (Jose, 2013a). We strongly suggest that the literature would benefit from longitudinal data collection within this area of research, especially for data obtained with the implementation of the new GERM measure. Longitudinal datasets are difficult to obtain due

to difficulties with availability, retention, and resources. If possible, a three-wave dataset is desirable as it includes an additional time point that enables a more sophisticated analysis of temporal relationships (Jose, 2016). Another key limitation with the present studies is that emotional situations happen in context and understanding how individuals are motived to experience positive and negative emotions within a daily diary paradigm would help provide a more in-depth look at the contextual nature of emotions (Brockman, 2016). Additionally, all samples are taken from one country (New Zealand), and this focus is problematic because Joshanloo et al. (2014) demonstrated that the fear of happiness (happiness aversion) is impacted by cross-cultural factors. Differences in GERM emotion motives may very well vary across cultural groups as well. Research in the future would benefit from investigating the motivations and the impact they have on wellbeing outcomes presented in these three studies across different cultures, whereby attitudes about positive and negative emotions may differ (Joshanloo & Weijers, 2014). And last, we need to determine if emotion motives yield reliable and robust differences in behaviour, as measured through observation or neuropsychological indices.

Final conclusions

The three research articles in this thesis demonstrate that the ways in which individuals are motivated to experience negative and positive emotions seem to be critical to levels and aspects of mental wellbeing. The new measure, the General Emotion Regulation Measure (GERM), provides a new way of assessing these motivations and providing a new and effective tool in investigating how these motives can predict wellbeing and illbeing. By creating a new way to investigate how emotion motives are related to emotion regulation strategies, research can now investigate how motives lead to behavioural strategies in a more nuanced fashion. Further, the identification of individual differences in emotion motives

makes it possible to engage in more effective intervention for individuals who do not regulate their emotions well or effectively.

Gilbert et al. (2012) presented a framework which examined how happiness aversion is associated with depression, and Joshanloo et al. (2014) have also demonstrated a link between happiness aversion and low life satisfaction. The present research programme reflected in this thesis took this framework, examining ways in which broader contra-hedonic motives are related to depressive symptoms. The creation of the GERM measure now allows the field a new way in which researchers can account for important individual differences in emotion regulation, which is important because of the direct links that have been found between contra-hedonic motives and a range of maladaptive mood states (Bloore et al., 2020; Gilbert et al, 2012; Joshanloo, 2013). The present research provides evidence that some individuals are not only averse to experiencing positive emotions (Joshanloo, et al 2014), but that this group of individuals is also likely to hold a motivation towards trying to experience negative emotions. Finally, the GERM and its relationship with facets of the well-established DERS (Difficulties in Emotion Regulation Scale) was investigated in the third study, and key dysfunctional emotion regulation facets were found to mediate the contra-hedonic motives to depressive symptoms relationship. These investigations provide a body of findings that serve to expand theory and research into motivations driving emotions. The findings contribute to the happiness aversion literature, explore how to measure contra-hedonic motives, and show how these motives are central to understanding the foundations of emotion regulation research.

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APPENDIX A:

General Emotion Regulation Measure (GERM)

On the following pages we would like to know how you feel about a number of emotions that you may experience:

- First, we will ask you how often you **TRY TO EXPERIENCE** each emotion
- Second, we will ask you how often you **TRY TO AVOID EXPERIENCING** each emotion
- And third, we will ask you how often you **ACTUALLY EXPERIENCE** each emotion

Please carefully read the question and pay particular attention to the phrase in **boldface type**. Focus on what each section is asking you. Then, for each emotion, select the answer that comes closest to describing how you feel.

How often do you **TRY TO EXPERIENCE** .....?					
	Never	Occasionally	About half of the time	Most of the time	All of the time
Happiness	❍	❍	❍	❍	❍
Frustration	❍	❍	❍	❍	❍
Disliking a person	❍	❍	❍	❍	❍
Joy	❍	❍	❍	❍	❍
Pride	❍	❍	❍	❍	❍
Anger	❍	❍	❍	❍	❍
Sadness	❍	❍	❍	❍	❍
Gratitude	❍	❍	❍	❍	❍
Love	❍	❍	❍	❍	❍
Surprise	❍	❍	❍	❍	❍
Shame	❍	❍	❍	❍	❍
Peacefulness	❍	❍	❍	❍	❍
Disgust	❍	❍	❍	❍	❍

Compassion	❍	❍	❍	❍	❍
Hope	❍	❍	❍	❍	❍
Guilt	❍	❍	❍	❍	❍
Fear	❍	❍	❍	❍	❍
Relief	❍	❍	❍	❍	❍
Liking a person	❍	❍	❍	❍	❍
Contempt (feeling superior to someone else)	❍	❍	❍	❍	❍
Anxiety	❍	❍	❍	❍	❍
Regret	❍	❍	❍	❍	❍
Enthusiasm	❍	❍	❍	❍	❍
Determination	❍	❍	❍	❍	❍
Distress	❍	❍	❍	❍	❍

How often do you TRY TO AVOID EXPERIENCING .....?					
	Never	Occasionally	About half of the time	Most of the time	All of the time
Love	❍	❍	❍	❍	❍
Shame	❍	❍	❍	❍	❍
Gratitude	❍	❍	❍	❍	❍
Relief	❍	❍	❍	❍	❍
Determination	❍	❍	❍	❍	❍
Surprise	❍	❍	❍	❍	❍
Contempt	❍	❍	❍	❍	❍
Distress	❍	❍	❍	❍	❍
Happiness	❍	❍	❍	❍	❍
Guilt	❍	❍	❍	❍	❍

Hope	❍	❍	❍	❍	❍
Liking a person	❍	❍	❍	❍	❍
Frustration	❍	❍	❍	❍	❍
Fear	❍	❍	❍	❍	❍
Enthusiasm	❍	❍	❍	❍	❍
Disliking a person	❍	❍	❍	❍	❍
Joy	❍	❍	❍	❍	❍
Sadness	❍	❍	❍	❍	❍
Disgust	❍	❍	❍	❍	❍
Anxiety	❍	❍	❍	❍	❍
Compassion	❍	❍	❍	❍	❍
Regret	❍	❍	❍	❍	❍
Peacefulness	❍	❍	❍	❍	❍
Pride	❍	❍	❍	❍	❍
Anger	❍	❍	❍	❍	❍

How often do you **ACTUALLY EXPERIENCE** .....?					
	Never	Occasionally	About half of the time	Most of the time	All of the time
Compassion	❍	❍	❍	❍	❍
Enthusiasm	❍	❍	❍	❍	❍
Disliking a person	❍	❍	❍	❍	❍
Joy	❍	❍	❍	❍	❍
Distress	❍	❍	❍	❍	❍
Shame	❍	❍	❍	❍	❍
Sadness	❍	❍	❍	❍	❍
Determination	❍	❍	❍	❍	❍

Regret	❍	❍	❍	❍	❍
Surprise	❍	❍	❍	❍	❍
Anger	❍	❍	❍	❍	❍
Peacefulness	❍	❍	❍	❍	❍
Disgust	❍	❍	❍	❍	❍
Happiness	❍	❍	❍	❍	❍
Frustration	❍	❍	❍	❍	❍
Contempt	❍	❍	❍	❍	❍
Pride	❍	❍	❍	❍	❍
Relief	❍	❍	❍	❍	❍
Liking a person	❍	❍	❍	❍	❍
Guilt	❍	❍	❍	❍	❍
Anxiety	❍	❍	❍	❍	❍
Love	❍	❍	❍	❍	❍
Hope	❍	❍	❍	❍	❍
Gratitude	❍	❍	❍	❍	❍
Fear	❍	❍	❍	❍	❍

Scoring:

The measure consists of 25 emotion items rearranged in a random order on the three pages. The list includes 12 positive emotions, 12 negative emotions, and a neutral emotion (Surprise). Surprise is not included in the calculations for the six subscales of the GERM as it is not valenced.

Positive emotions = Happiness, gratitude, hope, love, liking a person, relief, pride, peacefulness, determination, joy, enthusiasm, and compassion

Negative emotions = Fear, anxiety, guilt, contempt, frustration, disgust, anger, regret, sadness, disliking a person, shame, and distress

Items are scored using a 5-point Likert scale

1- Never
2- Occasionally
3- About half the time
4- Most of the time
5- All of the time

Total average score calculations for the six subscales:

EXP-POS Add all 12 positive emotions in the 'TRY TO EXPERIENCE' section and divide by 12 to get an average score

EXP-NEG Add all 12 negative emotions in the 'TRY TO EXPERIENCE' section and divide by 12 to get an average score

AVOID-POS Add all 12 positive emotions in the 'TRY TO AVOID EXPERIENCING' section and divide by 12 to get an average score

AVOID-NEG Add all 12 negative emotions in the 'TRY TO AVOID EXPERIENCING' section and divide by 12 to get an average score

ACTUAL-POS Add all 12 positive emotions in the 'ACTUALLY EXPERIENCE' section and divide by 12 to get an average score

ACTUAL-NEG Add all 12 negative emotions in the 'ACTUALLY EXPERIENCE' section and divide by 12 to get an average score

Note. The authors used only four subscales (EXP-POS, AVOID-POS, EXP-NEG, AND AVOID-NEG) as main indicators for the latent profile analysis in the published paper (see reference below). Values of ACTUAL-POS and ACTUAL-NEG were used as a manipulation check on whether emotion motives yielded expected levels of actual experienced emotions. It is recommended that future work classifying individuals should rely on the first four subscales, i.e., not including the ACTUAL subscales.

Reference for the published paper:

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