

**An Investigatory Study into Habitual Emotion Regulation Strategies and their
Differential Consequences for Affect States and Cognition.**

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ABSTRACT

The purpose of the study was to examine the relationship between the use of habitual emotion regulation strategies and their differential consequences for affect states and cognition. The moderator variables of interest were gender, and age. The study involved an undergraduate sample ($N= 182$) and made use of the ERQ, PANAS-X, and the Cognitive Failures Questionnaire. A significant difference was found between male and female participants for expressive suppression, but not for cognitive reappraisal. No significant difference was found in terms of age group in relation to emotion regulation. A significant difference was found between age groups in terms of both NA and PA. Results also showed that cognitive reappraisal and expressive suppression were strongly related to both NA and PA, and that expressive suppression did not result in more cognitive failures.

Chapter 1

INTRODUCTION

1.1: General Introduction

The mechanisms and processes involved in emotion and its regulation have been of paramount interest for the field of psychology. Emotion is universal and yet extremely subjective. Emotion compels action and at other times does not (Cannon, 1932), at times is intense and at times appears dulled or absent (Russell, 2003), can be context or situation specific (Mischel and Shoda, 2008), influences perception and distorts reality (Reiner, Stefannuci, Proffitt, & Clore, 2003), and at times demands attention, forcing its way into consciousness (Frijda, 1986). Possibly, it is for these reasons that emotion, as a psychological construct, is so difficult to pin down. There are no clear or well defined boundaries when it comes to emotion, and as such the concept remains fuzzy, abstract, and difficult to grasp (Russell, 2003).

Like many other psychological concepts, the word emotion has been lifted from everyday language. This has added to the confusion when adopting scientific methods in an attempt to operationally define emotion. Disagreement remains around the issue of emotion and cognition. Does emotion follow a “low route”, a subcortical pathway, which then elicits a response (LeDoux, 1996)? Is there a primacy of affect over cognition and are emotions and cognition independent of one another, as suggested by Zajonc (1980), or as interpreted in the stress and coping tradition, are emotions and cognitions such as appraisals reciprocal; are they interdependent (Lazarus & Folkman, 1984). Or does an emotion-generative process commence with an evaluation or appraisal of emotion cues (John & Gross, 2003)?

The study of emotion as a psychological construct allied by its complexity has resulted in divergent methodologies (Storbeck & Clore, 2007), although there does appear to be general agreement that emotions are episodic and short lived phenomenon. Given this complexity, it may be best to view emotion as a general phenomenon encompassing behavioural, experiential, and physiological response tendencies (Gross, 2002) resulting from affect (Watson & Tellegen, 1985) or mood (Morris, 1989; Bower, 1981).

1.2: Emotion and Cognition

The principle debate centres on the following; how do emotions arise, what is their source, where do they begin, and at which point do they end? The James-Lange theory of emotions stipulates that it is the physiological cues that attract attention. The person is running and this indicates fear, if the person is smiling it indicates happiness. Emotions such as fear and happiness are labels which are assigned after the event, they represent response tendencies. Emotions can be seen as distinct from cognition in that they are processed independently (Zajonc, 1980; 2000). The mere exposure to a stimulus involves an emotional response that is not dependent on conscious categorisation of that stimulus; rather it works in a “bottom-up” direction. This assumes that all cognition is conscious. Another view is that of Bard (1928) and Cannon (1929) who disagreed with this interpretation. Instead they hypothesised that emotions originate in the hypothalamus. The hypothalamus relays stimulus information to both the nervous system and the muscles, and to the cerebral cortex which solicits a cognitive interpretation leading to the experience of emotion.

Schachter and Singer (1962) put forward and tested a similar proposal, what became known as the “cognition-arousal” or “two factor” theory of emotion. This theory stipulates that two factors are necessary in order to experience an emotion, physiological arousal and cognitive interpretation. Physiological arousal is emotionally nonspecific. It determines the intensity but not the quality of the emotional state. It is cognition that determines which emotion will be experienced. Both must be present in order to experience emotion. In this way emotions can be understood as labels which represent appraisals of external and internal stimuli. Emotions such as fear, anxiety, happiness, pride and so on, can be understood as ideational representations of physiological arousal. So, physiological arousal may be better understood as a mood or feeling rather than emotion as such, a distinction made clearer by Russell’s description of “core affect” (2003).

1.3: Emotion and Affect

Core affect represents a baseline emotional state and as such has no object. In this way core affect has a free-floating quality and has no label. It is upon this core affect that an individual’s attention is sometimes drawn leading to feelings of pleasure or displeasure, boredom, agitation, and so on. Stimuli enter into consciousness with an “affective quality”, the ability to change core effect, for example in the case of music (Erkkila, 2011). When there is a change in core affect a search for the perceived cause is elicited, leading to an “attributed affect” (Russell, 2003). As stated much earlier from the psychoanalytical perspective in terms of object-relations, emotions typically have an object to which they are directed towards. That is, emotions such as love and hate usually involve an object, a person, a place, a physical object, or situation. This means that emotional experiences depend on the meaning attributed to that object, to its relevance (Lazarus, 1991a).

As Gross points out, emotions arise in the person-situation transaction that grabs attention, has meaning, and leads to a coordinated and dynamic system response to the continuing person-situation transaction. This coordinated yet dynamic system response depicts the creation and the experience of an emotion as unfolding over time (Gross, 1998b). This suggests that emotions have a timeline, they are not always instantaneous. Furthermore, emotions can be redirected or changed, as is evident in CBT (Beck, Rush, Shaw, & Emery, 1979).

The choice to listen to a certain type of music, to watch a genre of film, to go for a walk, or go to the pub, are all attempts to change an individual's baseline mood or affect in the attempt to experience the desired emotion. As pointed out by Bower and Forgas (2000): "Temporarily happy or sad people tend to selectively expose themselves to scenes, music, films, and activities in a mood-congruent manner" (p. 185). This is probably most evident in the use of psychoactive drugs (Saniotis, 2010). It is argued here, that human beings are active agents, and as such possess the ability to regulate emotion, some more successfully than others (Donegan, et al., 2003).

1.4: Individual Differences in Emotional Experience and Expression

The way in which people experience and express their emotions may be subjected to further modifications by gender, age, cultural influences, and ethnicity (Gross, 2003; Butler, Lee & Gross, 2007). For example, gender differences have been reported in relation to primary fear elicitors such as spiders (Averill & Cornelius, 1983). Furthermore, the role that gender

identity plays in the expression if not the experience of emotion is pointed out by Brody (1997) when he states that gender differences in emotional expressiveness can be traced to gender roles, status, the balance of power, and the socio-historical context. It is not uncommon for men to view certain emotions as “unmanly” (Brody, 2000, p.26). Also, western norms relating to differences in gender inhibition and suppression of particular emotions has been empirically supported when extrinsic influences are taken into account (Underwood, Coie, & Herbsman, 1992). Theories and research from the sociology of emotions (Hochschild, 1979; 1983; Lively & Heise, 2004) support this view in relation to roles and accepted societal norms.

When influences upon emotion are viewed as both extrinsic (behavioural and social norms) and intrinsic (self-regulation), it is not surprising to find that peoples emotional experiences and emotional expression maybe dependent upon their socio-historical environment, as suggested by Vygotsky. Furthermore, people may be influenced by their more immediate environment through forms of observational learning and modelling (Bandura, 1965). In this way emotions such as anger, fear, hate, and happiness may be interpreted as overt expressions of emotion which reflect understood and accepted behavioural norms. This suggests that the experience of emotions, overtly expressed emotions, and the adaptation of emotions, maybe moderated by cultural scripts or schemas (Matsumoto, Yoo, & Nakagawa, 2008; Miyamoto & Ma, 2011).

If this is the case, an age-affect relationship or a cohort-effect may be considered relevant when examining the differential impact of such explanatory variables as gender and ethnicity on emotion regulation and affect. Socioemotional Selectivity Theory posits that the ageing

process brings with it a shift in motivation towards emotional goals which in turn promotes emotion regulation (Carstensen & Charles, 1999). Furthermore, studies have shown that younger adults tend to focus on more negative stimuli than on positive stimuli in relation to impression formation, memory, and decision making (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Such research suggests that negative stimulus representations maybe more salient in youth, but becomes less so as the individual develops over time. According to life-span developmental theories such as the Socioemotional Selectivity Theory mentioned here, age appears to favour positive affect rather than negative affect demonstrating a developmental pattern characterised by a “positivity effect” (Carstensen & Mikels, 2005).

Empirical studies involving the use of functional magnetic resonance imaging (fMRI) and event-related potential (ERP) techniques have supported such claims (Williams, et al., 2006). Recognition of affective states such as fear appeared to decrease significantly with age, whereas recognition of positive affect such as happiness increased. Such findings provide evidence for better emotional stability and emotional wellbeing resulting from lifespan development. This is not altogether surprising when studies have shown that brain maturation of the prefrontal cortex and the limbic system, specifically the anterior cingulate cortex (Bush, Luu, & Posner, 2000), maybe key to developing effective behavioural inhibitions and emotional control (Casey, et al., 1997).

1.5: Emotion and Cognition: A Reciprocal Relationship

If it can be assumed that similar brain regions are involved in both emotion and cognition (Bush, Luu, & Posner, 2000) and that these regions may differ between one individual and

another, this may explain why different individuals, under the same conditions appear to show differing levels of attention (Woodrow, 1916). It could be argued that there exists an inverse relationship between emotion and cognition where as one increases the other decreases. Such a reciprocal relationship has been documented and observed. As regional cerebral blood flow increases in areas involved in emotion processing such as the amygdala, the posteromedial orbital cortex, and the ventral anterior cingulate cortex, this blood flow decreases when certain cognitive demands are made (Drevets & Raichle, 1998). Also, in some areas involved in cognition, such as the dorsal anterior cingulate and the dorsolateral prefrontal cortices, flow increases during attention demanding tasks, but decreases if emotional stimuli intrude into consciousness. This appears to be consistent with the concept of cognitive load. That is, that those particular regions of the brain may possess a limited capacity and the degree to which an individual experiences or expresses emotions may have differential cognitive consequences. In order to understand this reciprocal relationship, a better definition of emotion and emotional regulation is needed.

1.6: Emotion and Emotion Regulation

Emotions can be summarised as possessing the following characteristics: emotions attract attention because they are relevant (Lazarus, 1991a); emotions are multifaceted covering many domains of subjective experience, behaviour, and peripheral physiology (Mauss, Levenson, McCarter, & Gross, 2005); emotions motivate or are responsible for goal-directed behaviour (Lazarus, 1991a); emotions at times demand attention (Frijda, 1988). Although emotions appear to be universal, that is, all human beings have the ability to experience and express emotion (there are exceptions), the fact remains that emotions are quintessentially subjective and as such are subject to individual differences as outlined above. It is suggested

here that individual differences in emotional experience and emotional expression are brought about by emotional control or emotion regulation.

The study of emotion regulation is not new (Freud, 1915d). Yet it is only fairly recently that it has come into prominence within the field of psychological research (Kooze, 2009). The form that such a regulatory process takes depends on the respective theoretical standpoint. The central debate surrounding emotion and cognition mentioned earlier also holds true for emotion regulation. Put simply, emotion regulation can be seen as regulation by emotion (Bargh, 1997; Berkowitz & Harmon-Jones, 2004; Zajonc, 2000) or regulation of emotion (Gross, 1998; 2002; John & Gross, 2003; Lazarus & Alfert, 1964; Parrot, 1993). Research findings support both viewpoints. The latter defines the theoretical framework which has been adopted by the current study.

Although bottom-up processes or regulation by emotion may help to explain evolutionary based emotions such as fear, or physiological responses to novel events, they do not help to explain intrinsic motivations or behaviours which are designed to bring about a change in a situation or in mood, namely the role of agency. This form of self-regulation has been described as follows, “Emotion regulation refers to the process by which we influence which emotions we have, when we have them, and how we experience and express them” (Gross, 1998b). Distinctions have been made between affect regulation and emotion regulation (Russell, 2003). However, the term emotion regulation is used here to describe the general process by which emotions are experienced and expressed. There are situations and instances in which emotion regulation is intentional (Mischel et al., 1989) and others in which it is not (Mauss et al., 2007). The current study examines the use of habitual emotion regulation.

As mentioned earlier, emotions are created and experienced through the emotion-generative process. One characteristic of this process is that it has temporal qualities and as such is subject to intentional or automatic manipulation. Gross and Thompson (2007) have outlined a “modal model” of emotion. According to this model emotions arise in the following sequence, situation-attention-appraisal-response. The sequence begins with a psychologically relevant situation, this situation is attended too, and this gives rise to appraisals, which in turn lead to a response. The response itself has the ability to affect future emotional experiences and emotional expression, and as such performs a regulatory function in its own right. For example, a job interview may represent the situation. This situation may be novel or it may not. In either case the individual will probably already have an idea what to expect, either through first-hand experience or through the advice of others. In this case the situation represents a goal and has been afforded a certain valence or affective quality. Appraisals are then made about the situation and this leads to a response. The interview may be viewed as a challenge, a dreaded necessity, or an overly stressful situation. The response may be to attend or not to attend. The experience and affective qualities assigned to such a situation will likely motivate or guide future behaviours.

According to Gross (2001), emotion regulation strategies have their primary impact where attention and appraisals occur. Building upon this, John and Gross (2003) put forward a process model of emotion regulation that seeks to account for these aspects of the emotion-generative process. They have identified two emotion regulation strategies, one antecedent-focused, cognitive reappraisal, and the other response-focused, expressive suppression. Interestingly, they note that the use of the term strategy may be misleading in that it presupposes intent. They comment as others have (Williams, Bargh, Nocera, & Gray, 2009), that emotion regulation strategies often occur automatically, without conscious intent. This is

evident in expertise (Cheng et al., 2007), or in highly stressful jobs in which a high degree of attention and focus is required (Smith & Kleinman, 1989).

Antecedent-focused strategies refer to things that are done or strategies adopted which direct or stop the emotion-generative process before it reaches the response stage, or full blown emotion. For example, the knowledge of a future stressful event maybe avoided through situation selection, through the selection of psychoactive drugs, or through some other means. At other times a particular situation, place, or person may be approached as opposed to avoided (Campbell & Hawley, 1982).

Response-focused on the other hand refers to strategies adopted after the emotion is already underway or when the experience of an emotion has occurred. An example of response-focused regulation would be the use of attention deployment or distraction in order to move focus away from an upsetting aspect of a situation onto another less unpleasant aspect (Nix, Watson, Pyszczynski, & Greenberg, 1995; Stifter & Moyer, 1991). This suggests that strategies such as expressive suppression may involve continued self-monitoring and emotion regulation.

Within this broader framework, John and Gross (2003) proposed that the two emotion regulation strategies mentioned above, cognitive reappraisal and expressive suppression, have differential affective outcomes. They conducted a series of studies to examine this hypothesis and concluded that there were indeed marked differences between these two strategies. This is down to a number of factors. Firstly, they argue that because cognitive reappraisal occurs early in the emotion-generative process, it places fewer demands upon individual functioning and maybe more effective in changing underlying mood. This in turn may lead to a more

optimistic outlook and better coping skills when faced with stressful events or situations. Secondly, reappraisers are more likely to share personal information, both negative and positive, with others and in so doing avoid the dangers of isolation. Also those who use reappraisal strategies more frequently express positive emotion and less negative emotion than those who use this strategy less frequently. They are more confident, show fewer depressive symptoms, and report higher levels of life satisfaction and well-being.

In terms of the habitual use of expressive suppression, they argue that this strategy occurs later in the emotion-generative process and as such proves to be more costly on a number of fronts. Those who use this strategy report feeling inauthentic, misleading when in the company of others, and that they deal with stressful events and situations by suppressing or masking their true emotions. They are poorer in their ability to change mood, view their own mood as more negative, and experience and express less positive emotion. Research involving fMRI shows a link between reappraisal and increased activation of the lateral prefrontal regions of the brain involved in cognitive control, and to decreases in the activation of the amygdala, a region important for the registering of emotions, particularly fear (Ochsner, Bunge, Gross, & Gabrieli, 2002). Such strategies have also been implicated in the area of psychopathology (Gross & Levenson, 1997), which may involve similar bidirectional pathways between the limbic system and the prefrontal cortex involved in executive function and are important because the ability to control or to reflect upon emotional life is known to have affective consequences, as is evident in the case of mood disorders or in the case of borderline personality disorder (Donegan et al., 2003).

As stated above if antecedent-focused strategies occur earlier in the emotion-generative process, they would be expected to place fewer demands on other cognitive abilities such as

attention and memory. Richard & Gross (2000) did in fact find evidence to support this hypothesis. They found that response-focused strategies such as that of expressive suppression led to detriments in both objective memory and memory confidence ratings. In contrast to this, those who used cognitive reappraisal had no such effects upon memory. These results are supported by other empirical studies that have found individuals who attempted to conceal emotional facial expressions in response to unpleasant and pleasant stimuli, demonstrated worse recall than those in the control group (Bonanno, Papa, O'Neill, Westphal, and Coifman, 2004). Moreover, studies using emotional stroop tasks have found that cognitive interference caused by the processing of emotional stimuli may lead to cognitive failures (Sideridis, 2009).

1.7: Conclusions and Limitations of Reviewed Research

This review of past and current research into the field of emotion and emotion regulation has found a certain amount of convergence. This is evident in some of the studies outlined here. There does appear to be a strong link between certain brain regions and the experience of affective states and cognition, and emotion and emotion regulation. This interaction between brain and behaviour maybe further modified by environmental factors such as the socio-historical context, societal norms, gender roles, and inter-generational differences or cohort-effects. This suggests that mood, or as Russell describes it “core-affect”, may represent the universality of the emotional experience, and that emotional experiences and emotional expressiveness are the products of emotion regulation which in turn lead to the individual differences evident within any society.

Having said this, there are certain limitations to some of the studies referenced here. Some lack ecological validity in that they can only measure the effects of emotion regulation at one

single point in time within a laboratory setting. Although this may be desirable in terms of eliminating the influence of confounding variables, it cannot be said that such methods truly reflect the relationship between emotion and cognition as it is experienced within a day to day setting. In terms of cross-sectional research which employs the use of questionnaires to measure emotion regulation, some of the samples used solely involved the participation of students of roughly the same age (John & Gross, 2003).

Also most research has mainly focused on the two more general dimensions of positive and negative affect without examining more discrete emotions such as fear, hostility, sadness, attentiveness, serenity and so on. This is also true in relation to issues surrounding gender differences which have not, as of yet been fully explored. Also, the role that cultural values have to play in the experience and expression of emotion has not been fully examined. The differential consequences of habitual emotion regulation strategies on day to day cognitive resources have not been fully tested. Yet, these studies and others have shown that emotion regulation strategies may play a pivotal role in mood regulation in a healthy population. Such studies also demonstrate that individual differences in gender and ethnicity do exist, although few if any studies have examined cohort or generational differences in relation to emotion regulation strategies.

1.8: Rationale, Aims, and Hypothesis

The purpose of the current study is to re-examine the relationship between the use of habitual emotion regulation strategies and their consequences for affect states and cognition. In so doing it is the intention to build upon past research by looking more closely at affective states in terms of gender, inter-generational differences, and cognitive failures in everyday life.

John and Gross (2003) have shown that individual differences in gender and ethnicity do exist although more research is needed into specifics in terms of affect states.

Hypothesis 1:

It is hypothesised that the adoption of one or other of the two emotion regulation strategies, cognitive reappraisal and expressive suppression, will differ for men and women. It is further hypothesised that there will be a significant difference between males and females in terms of specific affect states.

Hypothesis 2:

If individual differences exist in terms of gender, it would not seem to be beyond reason that such differences may exist in terms of cohorts, a generational dimension which has as of yet not been fully examined. Research which has been conducted into this area, some of which has been mentioned above (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Carstensen & Charles, 1999; Carstensen & Mikels, 2005; Williams, et al., 2006), suggests that age may play an important role in terms of affect states. Intergenerational differences appear to be present resulting in differential affect outcomes, with negative stimuli representations being more salient during youth but less so in later adulthood. Therefore, it is hypothesised that such differences do exist and that this will be reflected in higher reported levels of cognitive reappraisal for the older participants and higher reported levels of expressive suppression for the younger participants. It is also hypothesised that this will be reflected in reported levels of negative affect and positive affect.

Hypothesis 3:

According to Gross (2002) cognitive reappraisal places fewer demands upon cognitive resources than expressive suppression because it occurs earlier in the emotion-generative process. If this is the case, then the habitual use of the strategy adopted by an individual would be expected to have some impact upon daily cognitive resources. It has already been documented that certain areas of the brain increase in activation as a result of emotional stimuli, but that the same areas may decrease in activation when they are required to complete cognitive tasks (Drevets & Raichle, 1998). For this reason it is hypothesised that the habitual use of expressive suppression will lead to heightened distractibility as measured by cognitive failures, and that the use of cognitive reappraisal will not.

In an attempt to further the understanding and appreciation of the reciprocal relationship between emotion and cognition, a cross-sectional study involving a convenience sample of undergraduate students has been adopted. Although self-reported measures have limitations, it is suggested here that this may in fact be the only way to measure the use of habitual emotion regulation strategies as employed on a day to day basis. In order to examine the intergenerational dimension, the sample is comprised of both full-time and part-time students. The hope is that this sample will prove to be more representative in terms of its age span. Also, the intention is to represent a more cross-cultural section of society by involving both Irish and International students.

Chapter 2

METHOD

2.1: Materials

This study made use of three self-administered paper and pencil questionnaires. A short demographic questionnaire constructed by the researcher was also used. This consisted of three items which asked for the age, gender, and ethnicity of the respondent.

The Emotion Regulation Questionnaire (ERQ) was devised by Gross and John (2003) in order to measure individual differences in the habitual use of emotion regulation strategies; cognitive reappraisal and expressive suppression. Six items assess cognitive reappraisal, and four items assess expressive suppression. Questions such as “When I want to feel more *positive* emotion (such as joy or amusement), I *change what I’m thinking about*” measure cognitive reappraisal, while questions such as “I keep my emotions to myself” measure expressive suppression. Items are rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The American version of the ERQ demonstrated good internal consistency and a 2-month test-retest reliability of about .7 (Gross & John, 2003). The Cronbach’s alphas recorded during this analysis for the 6 cognitive reappraisal items and the 4 expressive suppression items was .81, and .65 respectively.

The PANAS-X is an expanded version of the PANAS, containing 60 items designed to assess the two general dimension scales of positive affect and negative affect. The NA scale consists of the following items, *afraid, scared, nervous, jittery, irritable, hostile, guilty, ashamed, upset, and distressed*, while the PA scale consist the following, *active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, and strong*. The PANAS-X also

measures a further eleven subscales; fear (6 items), hostility (6 items), guilt (6 items), sadness (6 items), joviality (8 items), self-assurance (6 items), attentiveness (4 items), shyness (4 items), fatigue (4 items), serenity (3 items), and surprise (3 items). The respondents were asked to rate each item depending on how much they had experienced each of these during the past few weeks. The items were rated on a 5-point Likert scale, from 1 (very slightly or not at all) to 5 (extremely). The PANAS-X has a coefficient alpha for the subscales that ranged from .75 to .91 at baseline and .87 to .93 at the 3-month follow-up (Watson & Clarke, 1994). The Cronbach's alphas for the two general dimensions and the subscales items during this study were, NA (10 items; $\alpha = .84$), PA (10 items; $\alpha = .82$), Fear (6 items; $\alpha = .77$), Hostility (6 items; $\alpha = .76$), Guilt (6 items; $\alpha = .84$), Sadness (5 items; $\alpha = .80$), Joviality (8 items; $\alpha = .87$), Self-Assurance (6 items; $\alpha = .72$), Attentiveness (4 items; $\alpha = .71$), Shyness (4 items; $\alpha = .63$), Fatigue (4 items; $\alpha = .84$), Serenity (3 items; $\alpha = .69$), and Surprise (3 items; $\alpha = .64$).

The Cognitive Failures Questionnaire was created to assess cognitive failures in everyday life (Broadbent et al., 1982) and contains 25 items. A sample item measuring cognitive failures is "Do you have trouble making up your mind?" A further example is "Do you read something and find you haven't been thinking about it and must read it again?" Respondents rate each item on a 5-point Likert scale ranging from 4 (very often) to 0 (never). The Cognitive Failures Questionnaire has high internal validity (alpha= 0.91) with a test-retest reliability rate of 0.82 (Wallace, Kass & Stanny, 2002). For this study the Cronbach's alpha was recorded as .84.

An example of the questionnaires used can be found in the appendix. Once all the data had been collected, the statistical package PASW 18 was used to analyse the data.

2.2: Participants

This study involved the use of a convenience sample. With the permission of Dublin Business School and with the assistance of a number of DBS lecturers, the participants were drawn from an undergraduate population of part-time and full-time students. Part-time students were chosen in order to widen the age ranges of the participants. The participants came from a number of different courses. The sample also included international students. The final sample number was 182, with 59 males (32%, mean age = 29 years) and 123 females (68%, mean age = 27 years). This sample also included a number of different nationalities, 127 Irish students (69.8%) and 55 International students (UK = 2.2%, other EU = 7.1%, other European = 1.6%, US = 1.1%, African 10.4%, Asian = 1.6%, other = 6%), with ages ranging from 17 to 58. This study did not involve the use of incentives such as pay or course credits. Participation was solely based on a willingness to take part.

2.3: Design

For the purposes of this study a cross-sectional design was used. The independent/predictor variables were age and gender. The dependent/criterion variables were the emotion regulation strategies, cognitive reappraisal and expressive suppression, affective states, and distractibility/everyday cognitive failures. When examining the relationships between emotion regulation and affect states and cognitive failures, the emotion regulation strategy employed was defined as the independent/criterion variable and affect states and cognitive failures as the dependent/criterion variable.

2.4: Procedure

Participants filled in a questionnaire packet which included measures used to assess emotion regulation strategies, affect states, and everyday cognitive failures. The cover page requested the following demographic information; gender, age, and ethnicity. The cover page also included instructions and informed the participants of the purpose of the study, their right to withdraw, and ensured them of their anonymity and confidentiality. This was further emphasised by the researcher, who when asking for their consent also repeated these points. The researcher remained in the room and offered assistance to any of the participants who needed help in completing the questionnaires. The participants were thanked for taking part in this research. Other forms of data collection which did not involve a request for participation at the beginning and at the end of lectures, with the consent of the lecturers involved, made use of the international student's office by making the questionnaire packet available to any student interested in taking part. A labelled box was provided in which the completed questionnaires were to be placed. This was done in order to safeguard anonymity. Different courses and years were targeted in an attempt to avoid duplication. It took approximately 10 to 15 minutes to complete the questionnaire packet.

2.5: Data Analysis

To examine gender and age differences in relation to cognitive reappraisal, a two-way analysis of variance (ANOVA) was conducted. This was repeated for gender and age in relation to expressive suppression. To examine gender and age differences in relation to NA, a two-way ANOVA was also conducted. A multiple regression was used to test whether or not cognitive reappraisal and expressive suppression would predict reported levels of NA. To examine gender and age differences in relation to PA, a two-way ANOVA was conducted. Following this a multiple regression was used to test whether or not cognitive reappraisal and

expressive suppression would predict reported levels of PA. Finally, to test for gender differences in relation to other affect states such as hostility, guilt, fear, sadness, joviality, self-assurance, attentiveness, shyness, fatigue, serenity, and surprise, an independent sample t-test was used.

Chapter 3

RESULTS

3.1: Descriptive Statistics

The analysis of the data began with descriptive statistics on the variables of interest; gender and age, in relation to emotion regulation strategies, affect states, and cognitive failures. Table 1 shows the mean and standard deviation for cognitive reappraisal and expressive suppression, cognitive failures, and reported affect states, by gender, and age group. The final sample ($N = 182$) was made up of 59 males (32.4%) and 123 females (67.6%), with ages ranging from seventeen to fifty eight ($M = 27.95$ $SD = 9.25$). For the purposes of analysis the different ages were recoded into three separate age groups. Age group 1 was defined as 17 to 24 (48.3%), age group 2 as 25 to 34 (33%), and age group 3 as 35 plus (18.7%). The mean and standard deviation scores for the three age groups are also shown in table 1. In terms of the gender mix in each age group, age group 1 was made up of 27 men and 61 females, age group 2 was made up of 15 males and 44 females, and age group 3 comprised 17 males and 17 females.

An attempt was made to represent as many different nationalities as possible, and the final sample comprised 127 Irish students (69.8%) and 55 International students (UK = 2.2%, other EU = 7.1%, other European = 1.6%, US = 1.1%, African 10.4%, Asian = 1.6%, other = 6%). Due to the low numbers of international student participation, this aspect of the study was dropped in favour of a more thorough examination of the data in terms of age differences.

Table 1

The Mean and Standard Deviation Scores for Emotion Regulation Strategies, Affect States, and Reported Cognitive Failures, by Gender and Age Group.

		Gender		Age Group		
		Male	Female	17 to 24	25 to 34	34 +
Reappraisal	<i>Mean</i>	28.58	28.00	27.62	28.22	29.59
	<i>SD</i>	6.78	6.69	6.48	7.05	6.67
Suppression	<i>Mean</i>	14.54	12.72	13.91	12.44	13.29
	<i>SD</i>	4.64	4.61	4.61	4.53	5.04
Cog. Failures	<i>Mean</i>	46.23	48.19	49.28	46.25	45.42
	<i>SD</i>	12.40	11.36	11.35	11.11	13.26
NA	<i>Mean</i>	22.78	20.99	22.61	21.91	18.19
	<i>SD</i>	6.77	7.61	7.36	7.54	6.21
PA	<i>Mean</i>	31.95	32.33	30.97	33.00	34.09
	<i>SD</i>	7.89	6.54	7.39	6.42	6.41
Fear	<i>Mean</i>	12.07	12.06	12.63	12.21	10.31
	<i>SD</i>	4.77	4.67	4.42	5.71	4.19
Hostility	<i>Mean</i>	14.26	12.05	12.75	13.48	11.63
	<i>SD</i>	4.62	4.47	4.59	4.78	4.33
Guilt	<i>Mean</i>	13.34	11.11	12.71	11.50	11.63
	<i>SD</i>	5.12	5.19	5.65	5.05	4.12
Sadness	<i>Mean</i>	12.00	10.99	12.09	11.18	9.61
	<i>SD</i>	4.06	4.59	4.52	4.60	3.40
Joviality	<i>Mean</i>	24.83	26.66	25.58	26.32	26.88
	<i>SD</i>	6.78	5.96	6.50	6.14	6.02
S.-Assurance	<i>Mean</i>	17.36	16.42	16.53	16.83	17.03
	<i>SD</i>	5.16	4.16	4.70	4.01	4.99
Attentiveness	<i>Mean</i>	12.92	13.02	12.33	12.93	14.82
	<i>SD</i>	3.72	2.97	3.36	2.79	2.96
Shyness	<i>Mean</i>	7.91	8.14	8.64	7.72	7.19
	<i>SD</i>	2.71	2.98	2.84	2.75	3.03
Fatigue	<i>Mean</i>	12.20	11.80	12.14	12.08	11.09
	<i>SD</i>	4.03	4.08	4.08	3.94	4.22
Serenity	<i>Mean</i>	9.15	9.29	9.43	8.76	9.61
	<i>SD</i>	2.65	2.51	2.29	2.55	3.12
Surprise	<i>Mean</i>	6.39	6.61	6.95	6.23	5.97
	<i>SD</i>	2.90	2.61	2.64	2.65	2.85

Note. NA = Negative Affect, PA = Positive Affect.

3.2: Inferential Statistics

In relation to the first and second hypothesis that gender and age differences exist in terms of expressive suppression, a two-way analysis of variance (ANOVA) was conducted which found a significant main effect for gender ($F(1, 175) = 8.88, p = .003$). A post hoc test comparisons using Tukey HSD found that males ($M = 14.54, SD = 4.64$), reported using expressive suppression significantly more often than females ($M = 12.72, SD = 4.61$). No significant main effect was found for age group ($F(2, 175) = .36, p = .69$). This was qualified by no significant gender and age group interaction ($F(2, 175) = 2.49, p = .08$).

To examine gender and age differences in relation to cognitive reappraisal, a two-way ANOVA was conducted. This found that there was no significant main effect for gender ($F(1, 174) = .72, p = .39$) and there was no significant main effect for age group ($F(2, 174) = 1.39, p = .25$). This was qualified by no significant gender and age group interaction ($F(2, 174) = 1.43, p = .24$). Figure 1 shows the mean scores for cognitive reappraisal and expressive suppression for male and female participants.

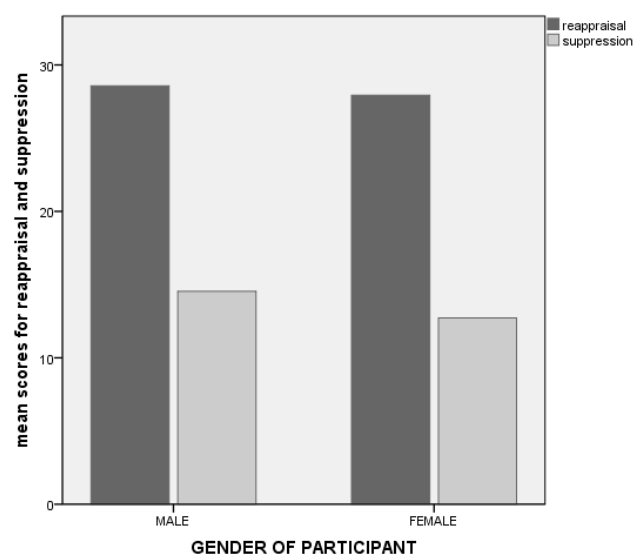


Figure 1. Bar-Chart Showing Gender Comparisons for Cognitive Reappraisal and Expressive Suppression.

A two-way ANOVA was conducted to examine gender and age differences in relation to NA. A significant main effect was found for age group ($F(2, 167) = 5.35, p = .006$). Post hoc test comparisons using Tukey HSD found that participants in age group 3 reported significantly lower levels of NA ($M = 18.19, SD = 6.21$) than participants in age group 1 ($M = 22.61, SD = 7.36$). No significant difference was found between the other age groups. No significant main effect for gender was found ($F(1, 167) = 3.32, p = .07$). This was qualified by no significant gender and age group interaction ($F(2, 167) = .07, p = .92$).

Multiple regression analysis was used to test if cognitive reappraisal and expressive suppression significantly predicted participants reported levels of NA. The results of the regression indicated that emotion regulation was a significant predictor of NA and accounted for 7% of the variance in scores ($F(2, 169) = 6.84, p < .01, R^2 = .07$). It was found that cognitive reappraisal had a negative relationship with NA and was a significant predictor ($\beta = -.21, p < .01$). It was found that expressive suppression had a positive relationship with NA and was a significant predictor ($\beta = .30, p < .01$). Results are shown in table 2.

Table 2

Multiple Regression Table Showing Cognitive Reappraisal and Expressive Suppression as Predictors of NA

Model	Unstandardized Coefficients		Standardised Coefficients		
	B	Std.Error	Beta	T	Sig.
Constant	23.50	2.79		8.41	.000
Reappraisal	-.215	.082	-.195	-2.634	.009
Suppression	.308	.116	.196	2.64	.009

Dependent Variable: General Negative Affect

A two-way ANOVA was conducted to examine gender and age differences in relation to PA. A significant main effect was found for age group ($F(2, 174) = 3.29, p = .04$). Post hoc test comparisons using Tukey HSD found that participants in age group 1 reported significantly lower levels of PA ($M = 30.97, SD = 7.39$) than participants in group 3 ($M = 34.09, SD = 6.41$). No significant difference was found between the other age groups. No significant main effect for gender was found ($F(1, 174) = .01, p = .89$). This was qualified by no significant gender and age group interaction ($F(2, 174) = .95, p = .38$). Figure 2 shows the age group differences for the mean NA and the mean PA scores.

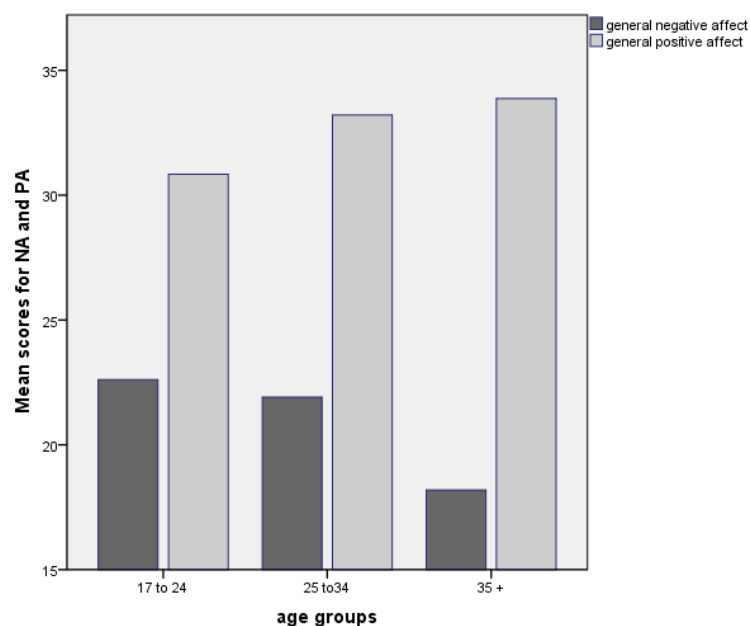


Figure 2. Bar-Chart Showing Comparisons of Mean NA and PA Scores for The Three Age Groups.

Multiple regression analysis was used to test if cognitive reappraisal and expressive suppression significantly predicted participants reported levels of PA. The regression indicated that emotion regulation was a significant predictor of PA and accounted for 19% of

the variance in scores ($F(2, 175) = 21.16, p < .001, R^2 = .19$). It was found that cognitive reappraisal had a positive relationship with PA and was a significant predictor ($\beta = .41, p < .001$). It was also found that expressive suppression had a negative relationship with PA and that it was a significant predictor ($\beta = -.31, p < .001$). Results are shown in table 3.

Table 3

Multiple Regression Table Showing Cognitive Reappraisal and Expressive Suppression as Predictors of PA

Model	Unstandardized Coefficients		Standardised Coefficients		
	B	Std.Error	Beta	T	Sig.
Constant	24.769	2.447		10.121	.000
Reappraisal	.416	.072	.393	5.793	.000
Suppression	-.315	.102	-.211	-3.104	.002

Dependent Variable: General Positive Affect

To see whether or not gender differences exist in terms of specific affect states, an independent samples t-test was conducted and found that gender differences were statistically significant for reported levels of hostility ($t(172) = 3.03, p = .003, 2\text{-tailed}$). Male participants reported significantly higher levels of hostility ($M = 14.26, SD = 4.62$) than female participants ($M = 12.05, SD = 4.47$). Gender differences were also statistically significant for reported levels of guilt ($t(178) = 2.71, p = .007, 2\text{-tailed}$). Male participants reported significantly higher levels of guilt ($M = 13.34, SD = 5.12$) than female participants ($M = 11.11, SD = 5.19$). No significant difference was found between male and female participants in terms of reported levels of fear, sadness, joviality, self-assurance,

attentiveness, shyness, fatigue, serenity, or surprise. Figure 2 shows the mean scores for hostility and guilt for male and female participants.

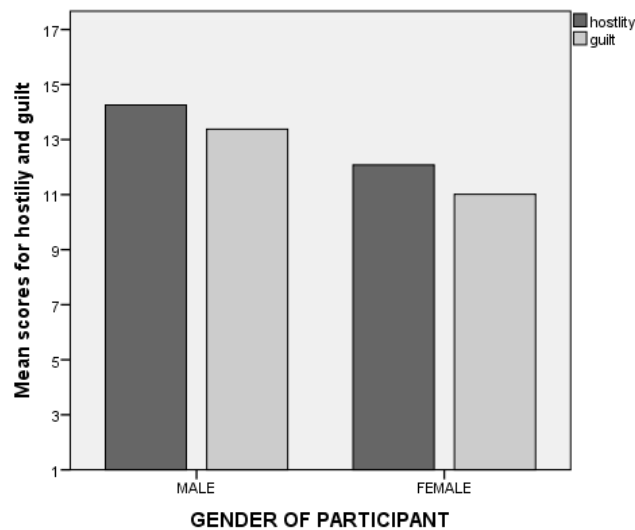


Figure 3. Bar-Chart Showing Comparisons of Mean Hostility and Guilt Scores for Males and Females.

In relation to the third hypothesis, that expressive suppression has a detrimental effect on cognition as measured in terms cognitive failures, a simple regression was used. The analysis showed no significant relationship between expressive suppression and cognitive failures ($F(1, 167) = .49, p > .05, R_2 = .00$). The results did not show that expressive suppression predicted cognitive failures ($\beta = .13, p > .05$). This procedure was repeated for cognitive reappraisal. No significant relationship between cognitive reappraisal and cognitive failures was found ($F(1, 168) = .59, p > .05, R_2 = .00$). Cognitive reappraisal was not a good predictor of cognitive failures ($\beta = -.09, p > .05$). The results are shown in table 4.

Table 4

Multiple Regression Table Showing Cognitive Reappraisal and Expressive Suppression as Predictors of Cognitive Failures

Model	Unstandardized Coefficients		Standardised Coefficients		
	B	Std.Error	Beta	T	Sig.
Constant	48.509	4.665		10.399	.000
Reappraisal	-.097	.133	-.057	-.731	.466
Suppression	.135	.195	.053	.691	.490

Dependent Variable: Cognitive Failures

Chapter 4

DISCUSSION

4.1: Summary

The first aim of this research was to examine gender differences in relation to cognitive reappraisal and expressive suppression. It was argued that differences in the habitual use of cognitive reappraisal and expressive suppression will lead to differential affect outcomes for male and female participants. In relation to the first part of this hypothesis, that gender may predict the type of emotion regulation most commonly used, the null hypothesis can only be partially rejected. The results found that gender differences in relation to expressive suppression were evident ($F(1, 175) = 8.88, p = .003$), with males ($M = 14.54, SD = 4.64$) using expressive suppression significantly more often than females ($M = 12.72, SD = 4.61$). However, this was not the case in relation to cognitive reappraisal. These findings are consistent with previous research which found that gender differences were apparent in terms of expressive suppression but not in terms of cognitive reappraisal (John & Gross, 2003) and that gender identity and gender roles may influence the way in which emotions are expressed (Brody, 2000).

In terms of gender differences in relation to emotional experiences as measured by NA and PA, no statistically significant differences were found, although a close to statistically significant difference was found in relation to NA ($F(1, 167) = 3.32, p = .07$). This may have resulted from an insignificant sample size. However, a significant difference was found in relation to hostility and guilt. Male participants reported significantly higher levels of hostility ($M = 14.26, SD = 4.62$) than female participants ($M = 12.05, SD = 4.47$). Male participants also reported significantly higher levels of guilt ($M = 13.34, SD = 5.12$) than

female participants ($M = 11.11$, $SD = 5.19$). These were the only two emotional experiences or affect states, which proved to be statistically significant. The results did not show any gender differences in relation to reported levels of fear, sadness, joviality, self-assurance, attentiveness, shyness, fatigue, serenity, or surprise.

Due to the fact that gender differences were only apparent for reported levels of expressive suppression and that NA and PA levels were not significantly different between male and female participants, the results suggest that other factors not measured here, more specifically perceived gender roles, may have led to higher reported levels of hostility and guilt. Notwithstanding reported differences in the habitual use of expressive suppression, it may also be the case that both males and females broadly adopt similar strategies in relation to emotion regulation, and that other extrinsic factors such as age or cohort may play a large part in the generation of emotional experiences, a factor examined by the second hypothesis.

The second aim of this research was to examine cohort or generational differences in relation to emotion regulation strategies and affect states. In relation to the second hypothesis which suggested that age would act as a moderator variable of reported levels of cognitive reappraisal and expressive suppression, no significant age effect was found for cognitive reappraisal ($F(2, 174) = 1.43$, $p > .05$). In terms of expressive suppression, a gender and age group interaction effect was found but not big enough to be statistically significant ($F(2, 175) = 2.49$, $p = .08$). This may have resulted from the way in which the age groups were classified. Male scores ($M = 14.00$, $SD = 4.79$) in age group 1 (17 to 24 years) closely resembled those of females ($M = 13.87$, $SD = 4.56$) in the same age group, but when age group 2 (25 to 34 years) and age group 3 (35 + years) were examined more closely, the scores differed significantly. Males in age group 2 ($M = 15.07$, $SD = 4.06$) reported

significantly higher levels of expressive suppression than did females in age group 2 ($M = 11.55$, $SD = 4.36$), and males in age group 3 ($M = 14.94$, $SD = 5.03$) also reported significantly higher levels of expressive suppression than females in age group 3 ($M = 11.62$, $SD = 4.63$). These results are in line with previous findings which have suggested that effective behavioural inhibitions and emotional control develop over time (Carstensen & Charles, 1999), both resulting from age and experience.

This was found to be the case when comparing age groups in terms of reported levels of NA and PA. A significant main effect was found for age group ($F(2, 167) = 5.35$, $p = .006$). Participants in age group 3 reported significantly lower levels of NA ($M = 18.19$, $SD = 6.21$) than participants in age group 1 ($M = 22.61$, $SD = 7.36$). The reverse was found to be the case in relation to PA ($F(2, 174) = 3.29$, $p = .04$). Participants in age group 1 reported significantly lower levels of PA ($M = 30.97$, $SD = 7.39$) than participants in group 3 ($M = 34.09$, $SD = 6.41$). This suggests that NA decreases with age and that PA increases. These results, along with those described above, lend support to the notion of a “positivity effect” (Carstensen & Mikels, 2005) i.e., that affect states such as fear decreases with age, whereas recognition of positive affect increases (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Williams, et al., 2006). Initial data analysis also showed this to be the case. Decreases in reported levels of fear were evident when comparing age group 1 ($M = 12.63$, $SD = 4.42$), age group 2 ($M = 12.21$, $SD = 5.71$), and age group 3 ($M = 10.31$, $SD = 4.19$). Therefore the null hypothesis that there is no difference in emotional experiences as a result of age can be rejected. The same cannot be said in relation to the emotion regulation strategy most commonly adopted. In this case the null hypothesis cannot be rejected, although insufficient power due to a relatively small sample size may have resulted in these insignificant findings.

The third aim of this research was to examine the differential consequences of the habitual use of emotion regulation strategies on day to day cognitive resources. In relation to the third hypothesis, that expressive suppression leads to heightened distractibility as measured by cognitive failures, the null hypothesis that significant differences do not exist cannot be rejected ($F(1, 167) = .49, p > .05, R_2 = .00$). This was also the case in terms of the relationship between cognitive reappraisal and cognitive failures ($F(1, 168) = .59, p > .05, R_2 = .00$). These results are not consistent with previous findings (Gross, 2002) which suggested that cognitive reappraisal places fewer demands upon cognitive resources because it occurs earlier in the emotion-generative process. Furthermore, it has been suggested that expressive suppression may involve continued self-monitoring and emotion regulation. This in turn would be expected to create cognitive interference which would be expected to lead to cognitive failures (Sideridis, 2009). If this were the case, the results should show a reciprocal relationship, more specifically, a negative linear relationship between cognitive reappraisal and cognitive failures. This was not the case. Results would also be expected to indicate a positive linear relationship between expressive suppression and cognitive failures. This also was not the case.

These results are somewhat surprising given that other research into this area found that as emotions intrude into consciousness, the ability to attend to cognitive tasks decreases (Drevets & Raichle, 1998). Also, the habitual use of expressive suppression has been found to lead to detriments in memory (Bonanno, Papa, O'Neill, Westphal, & Coifman, 2004; Richard & Gross, 2000). The fact that many emotion regulation strategies may occur automatically (Williams, Bargh, Nocera, & Gray, 2009) may help to explain why no detrimental cognitive consequences of expressive suppression were found. This may also help to explain why no significant relationship was found between cognitive reappraisal and

cognitive failures. Yet, such interpretations are purely speculative and future research into this area may prove to be more explanatory.

4.2: Conclusions, Limitations, and Suggestions for Future Research

It would appear from the results of this research that individual differences in emotional experience and emotional expression may well depend on a number of factors, only some of which have been explored here. The fact that gender differences were found across age groups when examining expressive suppression deserves more attention. Also, these findings suggest that the use of cognitive reappraisal does not differ significantly in terms of gender, nor does it differ significantly across age groups. A speculative interpretation could be made that any gender and age differences as they relate to emotion regulation may only reflect the way in which emotions are expressed and not the actual emotional experience itself. Also, the fact that the results showed few if any gender differences in relation to affect states implies that, at least for gender, it is emotional expression rather than any emotional experience which has been measured here.

This interpretation can be further supported in light of the findings which indicated that NA and PA did in fact differ across age groups and that reported levels of both expressive suppression and cognitive reappraisal did not differ significantly remaining fairly equal across age groups. If, as demonstrated from this research, that age related differences do exist in terms of affect states but not in terms of emotion regulation, and that gender differences do exist in terms of expressive suppression but not in terms of NA and PA, it appears that any age and gender differences in relation to emotional experience and emotional expression cannot be sufficiently explained by the habitual use of emotion regulation strategies.

There are a number of limitations to this research which warrant some attention. The sample size may not have been sufficiently large to uncover statistical significance for some of the constructs under investigation. Also, the fact that gender differences were not found in relation to NA and PA, but were found in relation to negative emotions such as hostility and guilt, is somewhat puzzling. This may be more down to extrinsic factors such as gender roles and the socio-historical context rather than intrinsic factors such as expressive suppression and cognitive reappraisal. Future research investigating this aspect may prove to be more rewarding. Of particular interest would be research into the relationship between emotion regulation and moral reasoning. It has been suggested that males differ from females in the way in which they use moral judgement, with males valuing moral argumentation and justice, while females adopt a more caring approach (Gilligan, 1982). This may help to explain higher reported levels of hostility and guilt by male participants. This interpretation is of course speculative and future research into this area may prove worthwhile.

Also, the fact that reported levels of NA and PA did not significantly differ between male and female participants but reported levels of expressive suppression did deserves more investigation. The results of this research confirm previous findings that males suppress their emotions significantly more than females (John & Gross, 2003). The results also show that when levels of expressive suppression rise, so do levels of NA. The results also show that the opposite is the case for levels of PA. As levels of expressive suppression go up, levels of PA go down. It has been well documented elsewhere that high levels of NA accompanied by low levels of PA is related to bouts of clinical depression and anxiety (Tellagan, 1985). Prevalence rates of depression are twice as high for women compared with men (Nolen-Hoeksema, 1987, 1990). If it is the case as found in this research, that the use of expressive suppression correlates with reported levels of NA, and men use expressive suppression more

than women, then it could be expected that prevalence rates of depression should be higher for men than for women, and this is not the case. For this reason, future research into the use of emotion regulation within a clinical sample may prove to be very informative.

In terms of a cohort effect or generational differences, a cross-sequential rather than cross-sectional method may prove to be more useful. Unfortunately this was not possible due to time constraints and the practical problems involved in this type of design. Investigation into age effects on emotion regulation and affect states can be truly conducted only if the same participants are followed over time and any changes documented. Also, diary completion documenting life events or other influential factors alongside self-reports and peer reports, may prove to be useful and more helpful in better understanding such phenomena as emotional experience and emotional expression.

An initial aim of this research was to explore emotion regulation in terms of ethnicity, as the influence of culture may well prove to be an important factor (Matsumoto, Yoo, & Nakagawa, 2008; Miyamoto & Ma, 2011). With this in mind, an attempt was made to involve as many nationalities as possible. Unfortunately, due to the low number of international student participants, it was felt that comparing Irish students to International students would not do the topic justice. This would not have provided enough detail in terms of specific ethnic group influences. Exploring individual differences between Irish participants, other European participants, African participants, Asian participants and so on, was not possible. Future research examining emotion regulation with a much larger sample comprising sufficient numbers of participants from each ethnical background would prove to be of great interest.

Although an attempt was made to involve as many participants from different age groups and nationalities as possible, a limitation of the sample was that it involved only student participants, and this makes the generalizability of the results difficult. Furthermore, the sole use of questionnaires brings with it its own limitations. Although it has been argued that this may be the best way to examine the habitual use of emotion regulation strategies, it can only ever produce a snapshot in time of the psychological construct under investigation. Given that the internal validity of the measures used was acceptable, with lowest recorded being that of shyness ($\alpha = .63$), it may be that variables beyond those which were examined may have influenced the mood of the participant at the time of the research. This demonstrates that more in depth analysis is not possible with such methods. Closed questions do not allow for the interpretation of motivational factors not foreseen by the researcher. It may in fact be the case that other variables such as life events, be they negative or positive, may be more influential than emotion regulation strategies in relation to emotional experiences. Future research investigating an interaction effect between stressful life events, emotion regulation, and emotional experience would prove informative.

“I think that everyone will agree from what has been said, that the emotions may be compounded one with another in so many ways, and so many variations may arise therefrom, as to exceed all possibility of computation.” (Spinoza, 1677/1957, pg. 63).

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APPENDIX

Hello, my name is Marco Mcsweeney and I am a final year DBS psychology student. As part of my degree I am required to conduct an empirical study. This study is concerned with how people manage their emotional experience and emotional expression. I would greatly appreciate your participation. If you choose to participate, you do have the option of opting out at any time. Please answer each section as honestly as you can, do not spend too much time on each question as there are no right or wrong answers. This questionnaire packet takes between 10 to 15 minutes to complete. Please do not write your name anywhere on this document. Your responses are anonymous and any information that you give will remain strictly confidential. I hope that you will find this study interesting. If you have any questions or are interested in the outcome of the study, feel free to contact me at [REDACTED] I would like to thank you in advance for your time and co-operation.

To begin, please indicate which of the following applies to you.

Sex: *M* *F*

Age

Ethnicity: *Irish*

UK

Other EU

Other European

US

African

Asian

Other

PANAS-X Questionnaire

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way during the past few weeks. Use the following scale to record your answers:

1 very slightly or not at all	2 a little	3 moderately	4 quite a bit	5 extremely
_____ cheerful	_____ sad	_____ active	_____ angry at self	
_____ disgusted	_____ calm	_____ guilty	_____ enthusiastic	
_____ attentive	_____ afraid	_____ joyful	_____ downhearted	
_____ bashful	_____ tired	_____ nervous	_____ sheepish	
_____ sluggish	_____ amazed	_____ lonely	_____ distressed	
_____ daring	_____ shaky	_____ sleepy	_____ blameworthy	
_____ surprised	_____ happy	_____ excited	_____ determined	
_____ strong	_____ timid	_____ hostile	_____ frightened	
_____ scornful	_____ alone	_____ proud	_____ astonished	
_____ relaxed	_____ alert	_____ jittery	_____ interested	
_____ irritable	_____ upset	_____ lively	_____ loathing	
_____ delighted	_____ angry	_____ ashamed	_____ confident	
_____ inspired	_____ bold	_____ at ease	_____ energetic	
_____ fearless	_____ blue	_____ scared	_____ concentrating	
_____ disgusted with self	_____ shy	_____ drowsy	_____ dissatisfied with self	

The Cognitive Failures Questionnaire (Broadbent, Cooper, FitzGerald & Parkes, 1982)

The following questions are about minor mistakes which everyone makes from time to time, but some of which happen more often than others. We want to know how often these things have happened to you in the past 6 months. Please circle the appropriate number.

		Very Often	Quite often	Occasion- ally	Very rarely	Never
1.	Do you read something and find you haven't been thinking about it and must read it again?	4	3	2	1	0
2.	Do you find you forget why you went from one part of the house to the other?	4	3	2	1	0
3.	Do you fail to notice signposts on the road?	4	3	2	1	0
4.	Do you find you confuse right and left when giving directions?	4	3	2	1	0
5.	Do you bump into people?	4	3	2	1	0
6.	Do you find you forget whether you've turned off a light or a fire or locked the door?	4	3	2	1	0
7.	Do you fail to listen to people's names when you are meeting them?	4	3	2	1	0
8.	Do you say something and realize afterwards that it might be taken as insulting?	4	3	2	1	0
9.	Do you fail to hear people speaking to you when you are doing something else?	4	3	2	1	0
10.	Do you lose your temper and regret it?	4	3	2	1	0
11.	Do you leave important letters unanswered for days?	4	3	2	1	0
12.	Do you find you forget which way to turn on a road you know well but rarely use?	4	3	2	1	0
13.	Do you fail to see what you want in a supermarket (although it's there)?	4	3	2	1	0
14.	Do you find yourself suddenly wondering whether you've used a word correctly?	4	3	2	1	0

		Very Often	Quite often	Occasion- ally	Very rarely	Never
15.	Do you have trouble making up your mind?	4	3	2	1	0
16.	Do you find you forget appointments?	4	3	2	1	0
17.	Do you forget where you put something like a newspaper or a book?	4	3	2	1	0
18.	Do you find you accidentally throw away the thing you want and keep what you meant to throw away – as in the example of throwing away the matchbox and putting the used match in your pocket?	4	3	2	1	0
19.	Do you daydream when you ought to be listening to something?	4	3	2	1	0
20.	Do you find you forget people's names?	4	3	2	1	0
21.	Do you start doing one thing at home and get distracted into doing something else (unintentionally)?	4	3	2	1	0
22.	Do you find you can't quite remember something although it's "on the tip of your tongue"?	4	3	2	1	0
23.	Do you find you forget what you came to the shops to buy?	4	3	2	1	0
24.	Do you drop things?	4	3	2	1	0
25.	Do you find you can't think of anything to say?	4	3	2	1	0