An Implicit Theory Perspective on Emotion Regulation

Samira Moumne, M. A.

Department of Educational and Counselling Psychology

McGill University, Montreal

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Abstract

Despite evidence for the important relationship between emotion regulation (ER) and psychological functioning, still little is known about why some people habitually regulate their emotions in ways that are more, or less, adaptive than others. This dissertation applies an implicit theory perspective to address this question, proposing that individual differences in ER converge on the core belief one holds regarding the fundamental controllability of emotion (i.e., implicit theory of emotion). Specifically, this dissertation draws from previous research on beliefs about controllability in other self-regulation domains (e.g., learning and academic achievement) to hypothesize that: (a) implicit theories of emotion are associated with multiple dimensions of ER that, in turn, are associated with psychological functioning; (b) by guiding individuals to adopt different goals for ER, implicit theories of emotion are linked to more, or less, adaptive patterns of cognitive ER in the face of negative life events, and (c) implicit theories of emotion and goals for ER develop in relation to the emotion-related feedback received from important socialization figures during childhood.

Hypotheses were tested in three manuscripts using self-report data obtained from a sample of young adult university students (n = 483; female = 81%; M_{age} = 20.20). Manuscript 1 examines relations between implicit theories of emotion and six dimensions of ER. Lower emotion controllability beliefs were associated with greater difficulties in emotional acceptance and clarity, poorer perceived access to effective ER strategies, lower impulse control, and more problems maintaining goal-directed behaviour when experiencing emotional distress. Among these dimensions, parallel multiple mediation analyses indicated that perceived access to effective ER strategies most strongly mediated the relationship between implicit theories of emotion and psychological functioning (i.e., stress and well-being). Manuscript 2 investigates

relations between implicit theories of emotion, (learning and performance) goals for ER, and profiles of cognitive ER in response to negative life events. Higher emotion controllability beliefs were associated with lower performance-avoidance and higher performance-approach goals for ER, but were unrelated to learning goals for ER. A parallel multiple mediation analysis indicated that only lower performance-avoidance goals uniquely mediated the positive relationship between higher emotion controllability beliefs and an increased likelihood of endorsing an adaptive (vs. maladaptive) ER profile. Manuscript 3 investigates relations between implicit theories of emotion, learning and performance goals for ER, and retrospective reports of emotion-related feedback received from parents during childhood. Results indicated that higher perceived parental emotion coaching during childhood was associated with greater learning goals for ER in young adulthood, whereas higher perceived parental emotion dismissing was associated with greater performance (avoidance and approach) goals for ER.

Consistent with the implicit theory framework, results support the notions that emotion controllability beliefs are associated with significant differences in how individuals regulate their emotions, and that goals for ER (particularly performance-avoidance goals) may have an important role in mediating this link. Moreover, findings point to the possibility that the adaptive or maladaptive approach one takes towards their own emotional difficulties in young adulthood may be linked to different types of emotion-related feedback received during childhood. Directions for continued research on ER from an implicit theory perspective, as well as practical implications for mental health professionals, are discussed.

Keywords: implicit theories, goals, emotion regulation

Résumé

Bien que la relation entre la régulation émotionnelle et la santé mentale soit bien établie, les raisons expliquant pourquoi certaines personnes sont en mesure de réguler leurs émotions sainement demeurent inconnues. L'objectif de cette dissertation est d'élucider cette question en se basant sur une théorie implicite des émotions. Précisément, cette dissertation s'appuie sur des recherches antérieures portants sur d'autres domaines de régulation (ex., la réussite scolaire) afin de formuler les hypothèses suivantes: (a) les théories implicites des émotions sont associées à divers aspects de la régulation émotionnelle, lesquels sont liés à la santé mentale; (b) en guidant les individus à adopter des objectifs différents par rapport à la régulation émotionnelle, les théories implicites des émotions sont liées aux réponses cognitives plus ou moins adaptives; et (c) les théories implicites des émotions et les objectifs de régulation émotionnelle se développent en fonction des réactions émotionnelles des agents de socialisation durant l'enfance.

Ces hypothèses ont été vérifiées dans trois manuscrits utilisant des données fournies par un échantillon d'étudiants universitaires (n = 483; femmes = 81%; âge moyen = 20.20). Manuscrit 1 examine les relations entre les théories implicites des émotions et six aspects de la régulation émotionnelle. La faible perception de contrôle sur les émotions était liée aux difficultés d'acceptation émotionnelle, à un accès plus restreint aux stratégies de régulation émotionnelle, à une baisse dans le contrôle des pulsions, et à des difficultés à maintenir des comportements axés sur l'objectif en présence de détresse psychologique. Parmi ces aspects de la régulation émotionnelle, les analyses de médiation parallèle suggèrent que la relation entre les théories implicites des émotions et la santé mentale est principalement expliquée par l'accès aux stratégies de régulation émotionnelle. Manuscrit 2 explore les relations entre les théories implicites des émotions, les objectifs de régulation émotionnelle, et la régulation cognitive des

émotions. La forte perception de contrôle sur les émotions était associée à une baisse d'objectifs de performance-évitement et une hausse d'objectifs de performance-approche pour la régulation émotionnelle. Cependant, la forte perception de contrôle sur les émotions n'était pas liée aux objectifs d'apprentissage pour la régulation émotionnelle. Les résultats d'analyse de médiation parallèle indiquent que la relation positive entre la forte perception de contrôle sur les émotions et l'augmentation de régulation émotionnelle adaptées était expliquée principalement par une baisse au niveau des objectifs de performance-évitement. Manuscrit 3 examine les relations entre les théories implicites des émotions, les objectifs pour la régulation émotionnelle, et les souvenirs des jeunes adultes par rapport aux réactions émotionnelles perçues par leur parents durant l'enfance. Les résultats de cette étude ont révélé que le « coaching » émotionnelle par les parents durant l'enfance était associé à une hausse d'objectifs d'apprentissage pour la régulation émotionnelle à l'âge adulte. En revanche, le « dismissing » émotionnelle des parents était associée à une hausse d'objectifs performance pour la régulation émotionnelle à l'âge adulte.

En accord avec le modèle théorique implicite, les résultats de cette recherche montrent que la perception de contrôle émotionnel contribue aux différences individuelles au niveau des stratégies utilisées pour réguler les émotions. De plus, les objectifs de régulation émotionnelle (particulièrement les objectifs de performance-évitement) ont possiblement un rôle important dans cette association. Finalement, les résultats montrent que la capacité des jeunes adultes à comprendre et à approcher les difficultés émotionnelles est influencée par les réactions émotionnelles de leurs parents au cours de l'enfance. Des pistes de recherche sur la régulation émotionnelle dans le cadre de la théorie implicite et des implications pratiques pour les professionnels en santé mentale sont discutées dans cette dissertation.

Mots clés : théories implicites, objectifs, régulation émotionnelle, santé mentale

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Statement of Authorship

All three manuscripts in this dissertation were first-authored by myself. I was solely responsible for the conceptual framework, development of the research questions, data collection, statistical analyses, and writing of each manuscript. As my doctoral research supervisor, Dr. Nancy Heath advised me throughout the dissertation process and is a co-author on all three manuscripts. In addition, my thesis committee member Dr. Nathan Hall advised me in the writing of Manuscript 2, and is a co-author on this manuscript.

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Introduction

As a species, humans are distinguished for their advanced capacity to exercise control over their responses and guide current actions in pursuit of desired endpoints (Forgas, Baumeister, & Tice, 2009). Broadly defined, self-regulation refers to all self-directed changes in thought, feeling, or behaviour made in an effort to bring oneself closer to one's goals (Fishbach & Ferguson, 2007; Forgas, et al., 2009). While most goals that come easily to mind target behaviour, appearance, relationships, or achievement, other perhaps less obvious goals target emotion (Koole, Van Dillen, & Sheppes, 2011). In such cases - when the target of self-regulatory efforts is emotional responding - one is engaged in *emotion regulation* (Gross, 2015).

When regulating emotions, specifically, goals are centered on achieving desired emotional states (e.g., happiness, calmness), typically in the service of higher-order motivations (Bonanno, 2001; Tamir, 2009, 2016). Most often, people are hedonically motivated, implicitly or explicitly setting emotion goals to attain a phenomenological advantage that is perceived in a particular emotional state (Tamir, 2016). At other times, people are instrumentally motivated, such that the attainment of an emotion goal is viewed as a pathway through which one can achieve cognitive, behavioural, social, epistemic, or eudamonic benefits (Tamir, 2016). For example, one may seek to regulate their emotions to improve concentration (Gohm, 2003) or perform more aggressively in a competitive sport (Tamir, Mitchell, & Gross, 2008). At other times, people may seek to experience an emotion to elicit a desired social judgement from others (Hess & Fischer, 2013), gain information about themselves, others, and the world around them (Tamir, 2016), or draw a sense of meaning from life (Oliver & Raney, 2011). Given the array of superordinate motivations that emotions may serve, it is unsurprising that the ability to regulate emotions effectively has widespread implications for adaptive functioning and mental health

(Berking & Whitley, 2014). Whereas people who are able to effectively monitor, evaluate, and modulate their emotions in accordance with their goals are more likely to experience well-being, difficulty regulating emotion is an established risk factor for an array of emotional problems and internalizing and externalizing mental disorders (Berking & Whitley, 2014).

Despite consensus among emotion scholars in conceptualizing emotion regulation as a goal-driven process, little attention has been paid to the motivational processes guiding adaptive and maladaptive emotional responding (Tamir, 2016). In fact, the emotion regulation literature has evolved largely separate from other self-regulation literatures to date, focusing more on *how* people regulate their emotions than *why* people regulate their emotions in the ways that they do (Koole et al., 2011; Tamir & Mauss, 2011). Recognizing significant overlap between emotion regulatory and broader self-regulatory processes, scholars have called for an increase in research applying key theories of self-regulation to further our understanding of motivation in emotion regulation (Koole et al., 2011; Tamir & Mauss, 2011). Certainly, such endeavours would not only inform our understanding of the cognitive processes underlying emotion regulation and subsequently, psychological health, they would also shed light on potential avenues for treatment focused on guiding individuals towards more adaptive patterns of emotional responding.

Theoretical Framework

In contrast to emotion scholars, motivation theorists have long been concerned with the "whys" of human behaviour, focusing primarily on beliefs and goals as key determinants of self-regulatory behaviour and outcomes (Eccles & Wigfield, 2002). Drawing from the motivation literature, this dissertation focuses on one particular model of self-regulation, namely, the implicit theory framework, for two primary reasons. First, the implicit theory framework is a model that has already been successfully applied to conceptualize motivation and self-regulation

across various domains of human functioning (e.g., academic achievement, athletics, conflict resolution, health psychology; for a meta-analysis, see Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013). Second, a growing literature investigating relations between implicit theories of emotion, emotion regulation, and psychological functioning has supported the extension of this model to the domain of emotion (e.g., Rusk, Tamir, & Rothbaum, 2011; Tamir, John, Srivastava, & Gross, 2007). As such, the present dissertation draws from the implicit theory framework to shed light on the motivational processes underlying the self-regulation of emotion.

Specifically, the implicit theory framework of self-regulation stipulates that people hold different core beliefs, or implicit theories, about the extent to which various self-attributes (e.g., athletic ability, weight, personality, intelligence) can be changed and controlled (Dweck & Leggett, 1988). These beliefs are proposed to develop in response to the feedback one receives from important socialization figures (e.g., parents or teachers) during childhood, and have important implications for motivation and self-regulation in implicit theory related domains across the lifespan (Burnette et al., 2013; Dweck, 2000; Dweck, Chiu, & Hong, 1995). On one hand, ability-focused (sometimes called person-oriented) feedback from important socialization figures suggesting that a child's characteristics or abilities (e.g. goodness, intelligence) are permanent promote the belief that these traits are fundamentally fixed within the child (Dweck et al., 1995). In turn, believing that an important self-attribute is immutable to change or control (called an *entity* theory) increases the likelihood of adopting *performance goals* focused on measuring, comparing, and validating ability in relation to others (Dweck & Leggett, 1988). From this fixed performance-focused mindset, one is more likely to attribute difficulties in theory-relevant domains to internal-stable factors, and to engage in more helpless patterns of self-regulatory responding characterized by an avoidance of challenge and effort

withdrawal (Dweck & Grant, 2008). Supporting these notions, research on implicit theories in the academic achievement literature indicates that youth who perceive their parents as more focused on demonstrating intellectual ability (e.g., by agreeing with statement such as "my parents would be pleased if I could show that school is easy for me" and "my parents ask me how my work in school compares with the work of other students in my class") than effortful learning (e.g., "My parents want me to understand homework problems, not just memorize how to do them"; "My parents think how hard I work in school is more important than the grades I get") are more likely to believe that their own intelligence is more fixed than amenable to change (Haimovitz & Dweck, 2016). Entity theories of intelligence have also been linked to greater performance goals focused on measuring and proving one's intellectual ability, or avoiding potential evidence of intellectual deficiencies (Dweck, 2000). When faced with perceived threats to their intelligence (e.g., during challenging school transitions or when confronted with academic failure), individuals with this fixed mindset are more likely to attribute their difficulty to low inherent intellectual ability (Blackwell, Trzesniewski, & Dweck, 2007; Robins & Pals, 2002), and to engage in less effective (or no) learning strategies (Blackwell et al., 2007; Cury, Elliot, Da Fonseca, & Moller, 2006; Robins & Pals, 2002). These individuals also report a higher intent to cheat in the future (Blackwell et al., 2007) and lie about a poor score (Mueller & Dweck, 1998), as well as an increased tendency towards self-handicapping as indicated by a failure to adequately prepare for an upcoming task in an effort to defend against low-ability attributions (Rhodewalt, 1994).

On the other hand, process-oriented feedback suggesting that a child's characteristics or abilities (e.g. goodness, intelligence) can be improved with effort promote the belief that those traits are fundamentally malleable and amenable to change within the child (Dweck et al., 1995).

In turn, individuals who believe that a particular self-attribute is amenable to change or control through effort (called an *incremental* theory) are more likely to adopt *learning goals* focused on developing their theory-related competence and abilities, attribute difficulties in theory-related areas to a need for increased effort or change in strategy, and engage in a more mastery-oriented pattern of self-regulatory responding characterized by effort escalation and strategy change (Dweck & Leggett, 1988). For example, incremental theories of intelligence have been positively correlated with learning goals focused on understanding and growing from academic failures (Dweck, 2000). From this learning-focused growth mindset, individuals are more likely to view academic difficulty as an indication that increased effort or a change of learning strategies is required (Blackwell et al., 2007; Robins & Pals, 2002), engage in active and effective learning strategies when faced with academic setbacks (Blackwell et al., 2007; Cury et al., 2006; Robins & Pals, 2002), and report adaptive affective responses (e.g., determination, enthusiasm) when coping with academic challenges (Robins & Pals, 2002). Moreover, by promoting a mastery-oriented (vs. helpless) pattern of self-regulation, higher incremental theories of intelligence have been associated with more positive performance outcomes (i.e., higher grades) over time (Dweck & Grant, 2008).

In other words, implicit theories and the goals people pursue within the context of these beliefs create distinct psychological frameworks, or *meaning systems*, through which individuals come to understand and approach theory-related self-regulation tasks (Dweck, 2000). Whereas higher controllability beliefs and higher learning goals are associated with more adaptive, mastery-oriented responses to distress, lower controllability beliefs and higher performance goals are linked to more helpless and defensive self-regulatory responses. In turn, by engaging in these

adaptive versus maladaptive patterns of self-regulation, different implicit theories and goals are associated with diverging trajectories of self-regulatory success (Dweck & Grant, 2008).

Consistent with tenets of the implicit theory framework, a growing number of studies have supported that *emotion-related* implicit theories and goals may influence the type of strategies people use to regulate their emotions, and subsequently, impact their emotional functioning. On one hand, studies have supported that the more a person believes emotions can be changed and controlled with effort (i.e., an incremental emotion theory) the more likely they are to engage in adaptive emotion regulation strategies and to report a higher sense of well-being, positive affect, and personal control over their own emotional experiences (Schroder, Dawood, Yalch, Donnellan, & Moser, 2015; Tamir et al., 2007). Similarly, learning goals for emotion regulation focused on understanding and learning from one's emotional experiences have been linked to greater self-reflection, higher emotion regulation self-efficacy beliefs, and greater use of cognitive reappraisal (Rusk et al., 2011). On the other hand, the more a person believes emotions are entities immutable to change and attempts at control (i.e., an entity emotion theory) the more likely they are to report higher levels negative affect and greater psychological symptoms (De Castella et al., 2013; Schroder et al., 2015), greater emotional avoidance (De Castella, Platow, Tamir, & Gross, 2017; Kappes & Schikowski, 2013), and potentially, lower attempts to regulate emotion overall (Kneeland, Nolen-Hoeksema, Dovidio, & Gruber, 2016a). Moreover, performance goals for emotion regulation that are focused on documenting and proving one's emotional competence in relation to others (performance-approach goal) or avoiding the perception of a lack of emotional control (performance-avoidance goal) have been associated with higher depressive symptoms and greater use of maladaptive emotion regulation strategies such as rumination and thought suppression (Rusk et al., 2011).

To summarize, an extensive literature has supported the application of an implicit theory framework to conceptualize individual differences in motivation and self-regulation across domains. To date however, only few studies have applied an implicit theory perspective to the self-regulation of emotion. While these studies have indicated that implicit theories of emotion are associated with the use of certain emotion regulation strategies and various correlates of mental health, the relationship between implicit theories of emotion and other dimensions of emotion regulation, as well as the role of goals for emotion regulation in mediating relations between implicit theories of emotion and emotion-related outcomes, remain unclear. Moreover, potential developmental correlates of implicit theories of emotion and goals for emotion regulation have yet to be explored.

Dissertation Objectives and Outline

The overarching objective of this dissertation is to broaden the current understanding of why some people are more likely to respond to emotion-eliciting experiences in ways that are adaptive for psychological functioning, whereas others persist in their emotion regulation difficulties. Drawing from the implicit theory framework and growing evidence for the role of emotion-related implicit theories in mental health, this dissertation addresses three primary research questions. First, what is the relationship between implicit theories of emotion and emotion regulation, and what role does emotion regulation play in mediating the relationship between implicit theories of emotion and psychological functioning (Manuscript 1)? Second, how do implicit theories relate to learning and performance goals in the domain of emotion, and what role do goals for emotion regulation goals play in mediating the relationship between implicit theories of emotion and adaptive versus maladaptive patterns of emotional responding (Manuscript 2)? And finally, how do young adults' perceptions of parental feedback about

negative emotion experienced during childhood relate to implicit theories of emotion and goals for emotion regulation in young adulthood (Manuscript 3)?

This dissertation was written in accordance with McGill University's Graduate and Postdoctoral Studies thesis guidelines. Chapter 1 outlines the implicit theory framework, reviews current research on implicit theories and learning and performance goals in the domain of emotion, and ends with a statement of objectives and hypotheses. Chapters 2, 3, and 4 present three manuscripts, each addressing a different objective related to the application of the implicit theory framework to the domain of emotion[1]. Specifically, Manuscript 1 tests six dimensions of emotion regulation (emotional awareness, acceptance, and clarity, perceived access to emotion regulation strategies, impulse control, and maintenance of goal-directed behaviour under emotional distress) as parallel mediators in the relationship between implicit theories of emotion and stress and well-being. Manuscript 2 tests relations between implicit theories of emotion and learning and performance goals for emotion regulation, as well as investigates these goals for emotion regulation as parallel mediators in the relationship between implicit theories of emotion and multivariate profiles of adaptive versus maladaptive cognitive emotion regulation strategy use. Manuscript 3 examines the relationship between young adults' perceptions of their parents' process-oriented (i.e., emotion coaching) and ability-focused (i.e., emotion dismissing) feedback when experiencing negative emotion during childhood with implicit theories of emotion and goals for emotion regulation in young adulthood. Finally, Chapter 5 concludes with a summary of the findings and a discussion of the theoretical and practical contributions of this research.

[1] As the manuscripts share a similar overarching objective and use the same university student sample to test their respective hypotheses, it should be anticipated that there is an inevitable degree of overlap in the introductions and methods sections of the manuscripts.

CHAPTER 1

Review of the Literature

The notion that personal beliefs can guide people to think, feel, and behave differently in identical circumstances has formed the foundation of many seminal theories of personality (Kelly, 1955; Ross, 1989), motivation (Bandura, 1986; Weiner & Kukla, 1970), and mental health (Beck, 1976; Ellis, 1962; Lazarus & Folkman, 1984). In line with these venerable theoretical traditions, Carol Dweck and her colleagues proposed that one kind of belief - *implicit theories* - have especially consistent and widespread implications for they ways people ascribe meaning to their experiences and respond to the natural challenges, setbacks, and stressors of everyday life (Dweck, 2000, 2011, 2016; Dweck & Leggett, 1988). This section outlines the implicit theory framework as it has been applied to conceptualize motivation and self-regulation across domains, focusing particularly on empirical support for the role of implicit theories of intelligence in the self-regulation of learning. Current research supporting the application of the implicit theory framework in the domain of emotion, specifically, is then reviewed.

The Implicit Theory Framework

Implicit Theories: Definition and Domain-Specificity

Implicit theories refer to the non-conscious, basic assumptions people hold regarding the controllability of human attributes (Dweck & Leggett, 1988). Whereas an *incremental* theory refers to the belief that a particular self-attribute or ability can be changed or controlled through effort, an *entity* theory refers to the belief that these personal qualities are relatively immutable, regardless of one's efforts to change them. To date, researchers have developed an array of domain-specific measures of implicit theories, permitting conclusions about their effects both within and across self-regulation domains (Dweck, 2011). In general, this research has supported

the idea that although people hold implicit theories about a variety of traits, attributes, and abilities (e.g., morality, intelligence, athletic ability, interpersonal relationships), the effects of these beliefs are typically domain-specific (for a review, see Burnette et al., 2013). That is, (a) implicit theories held in one domain are only related to outcomes in implicit theory-relevant domains (e.g., implicit theories of intelligence affect academic achievement but not athletic performance), and (b) implicit theories held in one domain are not necessarily linked to implicit theories held in another (Dweck, 2000; Molden & Dweck, 2006). Moreover, research has supported the idea that, similar to other deep-rooted cognitive structures, core beliefs, or worldviews, implicit theories are relatively stable and create characteristic and persistent patterns of responding over time (Dweck et al., 1995; Plaks, Grant, & Dweck, 2005; Robins & Pals, 2002); although they can also be activated by strong situational cues (Rattan, Good, & Dweck, 2012; Murphy & Dweck, 2010), and changed through targeted intervention with both short- and long- term domain-specific effects (e.g., Blackwell et al., 2007; Burnette, 2010; Burnette & Finkel, 2012; Yeager et al., 2014; Yeager, Trzesniewski, & Dweck, 2013). Thus, implicit theories - like many other kinds of core beliefs or personality structures - may be viewed as relatively stable constructs, but also amenable to change through new experiences and targeted intervention (Dweck, 2016).

The Role of Implicit Theories in Motivation and Self-Regulation

A primary tenet of the implicit theory framework is the notion that the extent to which one endorses an incremental versus entity theory (i.e., higher vs. lower controllability beliefs) has important implications for the motivations they pursue, particularly when faced with discrepancies between their current and desired states (Dweck, 2000, 2011, 2016; Dweck & Leggett, 1988; Dweck & Grant, 2008; Molden & Dweck, 2006). When a person views an

important self-attribute as controllable and amenable to change through effort (i.e., an *incremental* theorist), motivations are more likely to organize around *learning goals* focused on understanding and learning from feedback in order to develop one's own competence and ability. For the incremental theorist then, challenge, difficulty, or any discrepancy between their current and desired states are more likely to be perceived as opportunities for learning, and a need to change strategies or increase effort (Dweck & Leggett, 1988). Conversely, for a person viewing the same self-attribute as relatively immutable to control or change (i.e., an *entity* theorist), motivations are more likely to organize around *performance goals*, focused on measuring, documenting, and validating one's competence in relation to others, as well as avoiding perceptions of incompetence (Dweck & Leggett, 1988). Through this performance-focus, entity theorists are then more likely to perceive discrepancies between their current and desired state as an indicator of their permanent inadequacy, a personal and immutable threat (Dweck & Leggett, 1988).

A second major tenet of the implicit theory framework is that, by generating these distinct attributions for failure, implicit theories and their allied goals are associated with different self-regulatory responses when faced with potential threats to their important self-attributes (Dweck, 2000, 2011, 2016; Dweck & Leggett, 1988; Dweck & Grant, 2008). On one hand, incremental theories (both directly and indirectly through learning goals) are associated with more *mastery-oriented* patterns of responding to discrepancies between their current and desired states, characterized by more active and direct attempts to cope with their presenting difficulties (Dweck & Leggett, 1988). On the other hand, entity theories (both directly and indirectly through performance goals) are associated with more *helpless* patterns of responding,

characterized by a defensive withdrawal of self-regulatory effort and diverted attention towards the emotional impact of their difficulty (Dweck & Leggett, 1988).

Empirical Support for the Implicit Theory Framework

To date, studies have supported tenets of the implicit theory framework in an array of self-regulation domains, ranging from interpersonal relationships (e.g., Beer, 2002; Knee, 1998), to athletic performance (Biddle, Wang, Chatzisaray, & Spray, 2003; Ommundsen, 2003; Sarrazin et al., 1996), work performance (e.g., Kray & Haselhuhn, 2007; Tabernero & Wood, 1999), and physical health (Biddle, Wang, Chatzisarantis, & Spray, 2003; Burnette, 2010; Burnette & Finkel, 2012). Nowhere, however, has research on implicit theories been more extensive than in the academic achievement domain. Indeed, several studies have indicated that higher incremental theories of intelligence are associated with higher learning goals focused on growing from academic failures (Blackwell et al., 2007; Cury et al., 2006; Dweck, Mangels, & Good, 2004; Robins & Pals, 2002). In turn, incremental theories and learning goals have been linked to more adaptive patterns of affective, cognitive, and behavioural self-regulation in response to academic difficulty (Blackwell et al., 2007; Dupeyrat & Marine, 2005; Dweck, 2000; Dweck et al., 2004; Robins & Pals, 2002). In contrast, higher entity theories of intelligence have been linked to greater anxiety over academic ability (Cury, Da Fonseca, Zahn, & Elliot, 2008) and higher performance goals focused on demonstrating intelligence or avoiding proof of low intellectual ability (Haimovitz, Wormington, & Corpus, 2011; Lerdpornkulrat, Koul, &Sujivorakuluu, 2012; Mueller & Dweck, 1998; Stipek & Gralinski, 1996). Despite heightened concern over academic performance however, entity theorists also report lower motivations to remedy academic difficulties as efforts to improve are viewed as futile and further confirming of an innate lack of intellectual ability (Hong, Chiu, Dweck, Lin, & Wan, 1999; Nussbaum & Dweck, 2008).

Longitudinal research has further supported that by orienting individuals towards mastery versus helpless patterns of self-regulation, implicit theories, learning, and performance goals in the academic domain are also associated with diverging patterns of adaptation across challenging school transitions. In middle school, junior high, and college student samples, this research has supported that entity theorists tend to experience reductions in self-esteem and lower grades over time, whereas incremental theorists are more likely to report growths in self-esteem and increasing grades, despite having equal academic ability compared to entity theorists at the start of the school year (Blackwell et al., 2007; Cury et al., 2006; Robins & Pals, 2002). In each of these studies, significant paths were found from implicit theories of intelligence both directly and indirectly through (learning vs. performance) goals to the helpless versus mastery patterns of responding to academic difficulty, which in turn, played a key role in predicting these divergent trajectories. Consistent with the implicit theory framework, entity theories of intelligence and performance goals predicted more helpless patterns of responding to academic difficulty, characterized by more ability-based attributions (Blackwell et al., 2007; Robins & Pals, 2002), greater use of ineffective (or an absence of) learning strategies (Blackwell et al., 2007; Cury et al., 2006; Robins & Pals, 2002), and more negative affective responses, such as higher levels of shame and distress (Robins & Pals, 2002). Conversely, incremental theories of intelligence and learning goals predicted more mastery-oriented self-regulatory responses, characterized by effort or strategy based attributions for failure (Blackwell et al., 2007; Robins & Pals, 2002), more active and effective use of remedial strategies when faced with setbacks (Blackwell et al., 2007; Cury et al., 2006; Robins & Pals, 2002), and more positive affective responses, such as heightened determination and enthusiasm (Robins & Pals, 2002). In turn, these helpless versus mastery-oriented self-regulatory responses were key components in the path models leading

from implicit theories to changes in students' self-esteem and grades over time (for a review of these studies, see Dweck & Grant, 2008).

Further evidence for the link between implicit theories, learning versus performance goals, and self-regulation has come from neuroscience research, using event-related potentials (ERP) to track young adults' attention to different types of feedback (Mangels, Butterfield, Lamb, Good, & Dweck, 2006). An analysis of participants' patterns of neural activity while completing a challenging general information test suggested that although participants with both entity and incremental theories of intelligence equally attended to performance-related feedback indicating whether their answer was correct or not, only those with an incremental theory maintained their attention when self-corrective feedback indicating the correct answer was presented. In turn, students with an incremental theory of intelligence were able to correct significantly more errors than entity theorists on an unanticipated retest of the material they had missed. Taken together, findings support that although incremental and entity theorists equally perceive discrepancies between their current and desired states, entity theorists may be less likely to engage in the sustained semantic processing of feedback that would help to improve their chances at future success (Mangels et al., 2006). On the other hand, the tendency for incremental theorists to engage in deeper, more meaningful processing of self-corrective feedback may explain why those with stronger incremental (vs. entity) theories are better able to rebound following academic failure (Mangels et al., 2006).

Developmental Origins of Implicit Theories

With respect to the antecedents of implicit theories, it has been suggested that feedback from important socialization figures has significant consequences for the beliefs and goals that a child internalizes within implicit theory-relevant domains (Dweck et al., 1995; Dweck & Grant,

2008; Dweck & Master, 2009). Supporting this notion, studies have indicated that children are acutely responsive to subtle differences in both the praise and criticism of their parents and teachers that, in turn, is linked to their self-beliefs, motivation, and self-regulation when experiencing difficulty (Dweck et al., 1995). Specifically, studies have demonstrated that when a child perceives their parents' responses as conveying a judgement of their fundamental traits and abilities (e.g., their goodness/badness, intelligence), they are more likely to display helpless responses to subsequent failure and to endorse a belief that their own traits and abilities cannot be changed (e.g., Burhans & Dweck, 1995; Heyman, Dweck, & Cain, 1992). Conversely, when a child perceives their parents responses as learning-oriented (e.g., focused on increasing effort or identifying new strategies), they are more likely to display mastery responses to subsequent failure and to endorse a belief that their own traits and abilities can be improved with effort (e.g., Heyman et al., 1992).

In line with these notions, a study by Kamins and Dweck (1999) demonstrated that children who perceived a teacher's response to failure as conveying a judgement of their person ("I'm very disappointed in you") were significantly more likely to report entity theories of goodness/badness, harsher self-judgements, increased sadness, and lower problem-solving when experiencing difficulty on a subsequent task, compared to children who received feedback guiding them towards future strategies, or feedback focused on the outcome itself. Interestingly, similar findings emerged for teachers' responses to children's successes as well, such that children who were praised for their personal ability (e.g., "You're really good at this") versus their effort (e.g., "You must have tried really hard") after successful performance on an initial task subsequently reported higher entity theories and greater helpless responses (i.e., higher

negative affect, lower self-assessments, decreased persistence) when experiencing difficulty on a later task (Kamins & Dweck, 1999; also see Mueller & Dweck, 1998).

To further test these notions, Haimovitz and Dweck (2016) conducted a series of studies examining the role of parent socialization practices in the academic achievement domain, in which they investigated relations between parent- and child- reported implicit theories of intelligence, parent-reported perceptions of and responses to child academic failure, and children's perceptions of their parents' focus on academic performance versus learning from failure. Results demonstrated that parents who themselves held a view of academic failure as more debilitating than enhancing were more likely to endorse an entity theory of intelligence as well as to report more performance-oriented parenting practices that conveyed worry, pity, and doubt over their child's ability (or lack of it) in response to their child's hypothetical failure, and were less likely to endorse learning-oriented responses such as discussing what their child might learn from their experience or ways for their child to improve in the future. Moreover, the children of parents who viewed failure as more debilitating seemed to pick up on their parents' performance versus learning focus that, in turn, predicted the extent to which they endorsed an entity theory of intelligence themselves. Based on these findings, Haimovitz and Dweck (2016) suggested that parental beliefs about the nature of intelligence may indeed translate into specific performance or learning oriented concerns and behaviours that are tangibly perceived by their children and, in turn, shape their children's own intelligence-related beliefs and attitudes.

Summary

To summarize, implicit theories are core beliefs that critically guide the ways in which people derive meaning from, and subsequently respond to, their experiences. These beliefs are proposed to develop in childhood, in response to the kinds of (ability-focused vs. process-

oriented) feedback children receive from important socialization figures. On one hand, incremental theories orient people to seek challenge, viewing all experiences as opportunities for developing competence, and fostering more mastery-oriented, active, and engaged self-regulatory responses when faced with the inevitable challenges that come with learning. On the other hand, entity theories orient people to view their experiences as threatening tests of their ability, fostering more defensive and avoidant self-regulatory responses, particularly when faced with discrepancies between their current and desired states. By generating these distinct patterns of self-regulatory responding, different implicit theories and goals are, in turn, associated with divergent trajectories of adaptation and success. Whereas a persistent pattern of helpless self-regulation renders entity theorists more vulnerable to decreased performance and maladaptation, the mastery-oriented self-regulatory responses displayed by incremental theorists are associated with improved performance and adaptation over time.

Current Applications of the Implicit Theory Framework to the Domain of Emotion

In recent years, there has been an increase in research on the role that implicit theories may play in the self-regulation of emotion, as well as associations between implicit theories of emotion with various indices of mental health. After defining emotion regulation, current findings on implicit theories of emotion are reviewed below.

Defining Emotion Regulation

Multidimensional emotion regulation. Emotions are defined as loosely-coupled changes in subjective experience, behaviour, and peripheral physiology (Mauss, Leveson, McCarter, Wilhelm, & Gross, 2005) that unfold quickly in response to contextually-based evaluations of what an internal or external event means in light of one's current goals (Cunningham & Zelazo, 2007; Moors, Ellsworth, Scherer, & Frijda, 2013). Broadly, emotion

regulation refers to any and all conscious or nonconscious, intrinsic or extrinsic, behavioral or cognitive processes involved in the monitoring, evaluation, and/or modulation of emotional responses (Gross, 2015). In particular, clinical perspectives have emphasized six core dimensions of emotion regulation: (a) emotion awareness, (b) emotional clarity, and (c) emotional acceptance; the ability to (d) control impulses and (e) maintain goal-directed behavior when experiencing emotional distress, and (e) the ability to access strategies perceived as effective in regulating negative emotion (Gratz & Roemer, 2004; Gratz & Tull, 2010). Whereas skill in these areas constitute effective emotion regulation and have been linked to greater mental health, difficulties in these areas constitute emotion dysregulation, a key diagnostic feature of several mental disorders (Berking & Wupperman, 2014).

Emotion regulation strategies. Complementing clinical perspectives on emotion regulation, a large body of research has focused on documenting and describing the specific means (i.e., strategies) through which they regulate their emotions (Gross, 1998; 2007; 2015). A majority of this work has stemmed from Gross' (1998, 2013, 2015) process model of emotion regulation, which proposes that the emotions one experiences and how one's emotions are expressed depends on the type of emotion regulation strategy one uses. In particular, Gross (1998, 2013, 2015) delineates five families of emotion regulation strategies, distinguished as antecedent or response focused depending on the point at which they influence the emotion generative process. These include attempts to: (a) influence the situation one is exposed to (situation selection) or (b) alter some pertinent aspect of an emotion-eliciting situation (situation modification); (c) modify the aspect of a situation one attends to (attentional deployment); (d) change one's cognitive representation of an emotion-eliciting stimulus or situation (cognitive change); and (e) alter the experiential, behavioural, or physiological components associated with

an emotional response (response modulation). Whereas situation selection, situation modification, attentional deployment, and cognitive change are considered antecedent-focused emotion regulation strategies given their influence on emotion generative processes prior to an emotion being fully experienced, response modulation is considered a response-focused emotion regulation strategy, given it's targets are the response tendencies associated with a completed emotional response (Gross, 2007).

The cognitive emotion regulation strategies. While individuals may engage in cognitive and/or behavioural strategies to regulate both positive and negative emotion, the present dissertation focuses on *cognitive* emotion regulation strategies in response to *negative* life events - that is, the specific thoughts people typically have in response to self-perceived adversity that serve to modify the magnitude, duration, and/or quality of their emotional experience (Garnefski, Kraaij, and Spinhoven, 2001; Garnefski et al., 2002). In particular, nine cognitive emotion regulation strategies are identified in the literature: (1) positive reappraisal (i.e., reframing a negative event in terms of its positive impact), (2) acceptance (i.e., accepting what has happened), (3) positive refocusing (i.e., turning ones attention towards unrelated positive experiences), (4) putting into perspective (i.e., downplaying the significance of the negative event), (5) planning (i.e., identifying practical steps to cope with the situation at hand), (6) rumination (i.e., repetitive thinking about one's thoughts and feelings about what they have experienced), (7) catastrophizing (i.e., overemphasizing the negative consequences of the event), (8) self-blame (i.e., blaming oneself for the negative event), and (9) other-blame (i.e., believing others are responsible for what has happened to oneself; Garnefski et al., 2001).

Although scholars are moving away from the classification of emotion regulation strategies as inherently adaptive or maladaptive, research has supported that trait-level

engagement in certain cognitive emotion regulation strategies may moderate one's risk of long-term mental health problems (Troy & Mauss, 2011). For example, studies have supported that habitual catastrophizing, rumination, or self- and other-blame are linked to greater psychological symptoms and trait-level negative emotion (e.g., Garnefski & Kraaij, 2006, 2007; Lei et al., 2014; Martin & Dahlen, 2005; Martins, Freire, & Ferreira-Santos, 2016; Vanderhasselt et al., 2014; Zlomke & Hahn, 2010). As such, catastrophizing, rumination, and self- and other- blame are commonly referred to as maladaptive emotion regulation strategies, not because they are deliberately maladaptive, but because they represent a means through which individuals emotions are altered in a maladaptive way (Aldao & Nolen-Hoeksema, 2010; Garnefski et al., 2001). Conversely, planning, positive reappraisal, acceptance, putting into perspective, and positive refocusing are generally considered adaptive cognitive emotion regulation strategies, given their negative associations with emotional problems and psychological symptoms (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Lei et al., 2014; Martin & Dahlen, 2005).

Implicit Theories of Emotion: Definition, Measurement, and Domain-Specificity

Applying an implicit theory framework to the domain of emotion, Tamir et al. (2007) developed the Implicit Theory of Emotion Scale (ITES), consisting of four items assessing the extent to which one believes emotions can be controlled. Specifically, the ITES asks participants about their agreement with a series of statements, in which half tap into an entity emotion theory ("The truth is, people have very little control over their emotions"; "No matter how hard they try, people can't really change the emotions that they have") and half tap into an incremental emotion theory ("Everyone can learn to control their emotions"; "If they want to, people can change the emotions they have"). Entity theory items are reverse-scored and an average of the four items is calculated, such that higher scores indicate higher emotion controllability beliefs.

Although implicit theories of emotion and implicit theories in other domains (e.g., intelligence) may be moderately correlated, research has supported their domain-specificity. For example, Tamir et al. (2007) found that after controlling for implicit theories of intelligence, the relationships between implicit theories of emotion and emotion-relevant outcomes such as cognitive reappraisal and emotion regulation self-efficacy remained significant and largely unchanged, whereas controlling for implicit theories of emotion rendered implicit theories of intelligence uncorrelated with these variables. Similarly, other researchers have found implicit theories of emotion to be uniquely related to depression and well-being but unrelated to grades or enrolment in an academically challenging course, whereas implicit theories of intelligence were uniquely related to academic variables but not emotional outcomes (Romero et al., 2014). Taken together, these findings support the idea that implicit theories of emotion are distinct from implicit theories in other domains, and are uniquely associated with emotion-related outcomes.

Implicit Theories of Emotion: Relations to Emotion Regulation and Psychological Functioning

To date, most empirical work on implicit theories of emotion has focused on their relationship with various indices of mental health. In community samples, higher emotion controllability beliefs have been linked to more favourable psychological outcomes and adjustment across challenging school transitions (Romero, Master, Paunesku, Dweck, & Gross, 2014; Tamir et al., 2007). Conversely, lower emotion controllability beliefs have been associated with less favourable outcomes, such as greater negative affect (Kappes & Schikowski, 2013), lower self-esteem and poorer satisfaction with life (De Castella et al., 2013), as well as higher levels of stress, depression, anxiety, maladaptive perfectionism, and interpersonal problems (Schroder et al., 2015). Although a majority of studies on implicit theories of emotion have been

conducted in community samples of university students, research in clinical samples has also supported their role in mental health. For example, De Castella et al. (2015) found that therapy-related increases in social anxiety disorder (SAD) patients' emotion controllability beliefs (about anxiety in particular) explained reductions in their clinical symptoms following CBT, and even continued to predict SAD symptoms one year post-treatment. Taken together, findings suggest that implicit theories of emotion have significant links to psychological outcomes, and may be an important mechanism through which clinical interventions maintain their effects post-treatment.

Proposing potential mechanisms of the relationship between implicit theories of emotion and mental health, several scholars have emphasized the mediating role of emotion regulation (John & Gross, 2007; Kneeland, Dovidio, Joormann, & Clark, 2016; Tamir et al., 2007; Tamir & Mauss, 2011). According to these scholars, higher emotion controllability beliefs should orient people to engage in earlier (i.e., antecedent-focused) and more active attempts to regulate their unwanted emotions before their negative effects can fully manifest. Through this active regulatory stance, individuals with higher emotion controllability beliefs should ultimately be more effective in regulating their unwanted emotions over time, which in turn, has been associated with more favourable emotional and psychological functioning (Gross, 2013; Kring & Sloan, 2010; Vingerhoets, Nyklicek, & Denollet, 2008). Conversely, individuals with lower emotion controllability beliefs are proposed to engage in less active emotion regulatory attempts, allowing unwanted emotions to persist unregulated. Through this less active regulatory stance, individuals with lower emotion controllability beliefs should be more likely to experience difficulties regulating their emotions over time. In turn, such difficulties have been associated with less favourable emotional functioning and greater psychological symptoms (Berking & Whitley, 2014; Gross & Jazaieri, 2014; Sheppes, Suri, & Gross, 2015).

Supporting the mediating role of emotion regulation, correlational studies have found that lower emotion controllability beliefs are indeed linked to lower attempts to change one's construal of emotion eliciting events before an emotion is fully generated (i.e., cognitive reappraisal) which, in turn, may partially mediate the relationship between emotion controllability beliefs with stress and well-being (De Castella et al., 2013). Moreover, experimental studies manipulating implicit theories of emotion have supported the idea that lower (vs. higher) emotion controllability beliefs may not only be associated with lower use of cognitive reappraisal (Kneeland, Nolen-Hoeksema, Dovidio, & Gruber, 2016b), but may also lower efforts to cognitively regulate emotion overall (Kneeland et al., 2016a). Taken together, these findings provide preliminary support for the notion that emotion controllability beliefs are linked to distinct emotion regulation tendencies that, in turn, may help to explain why implicit theories of emotion have been consistently linked to psychological functioning.

Learning and Performance Goals in the Domain of Emotion

Although the implicit theory framework advocates the importance of learning and performance goals in mediating relations between implicit theories and self-regulation, only two studies have examined learning and performance goals in relation to emotion regulation, and none have investigated relations between these goals and implicit theories of emotion. As first defined by Rusk et al. (2011), *learning goals for emotion regulation* are characterized by a valuing of emotions as feedback, as well as an orientation to understand and learn from emotional experiences as opportunities for personal development. On the other hand, performance goals for emotion regulation have been differentiated based on their approach versus avoidance orientation, such that performance-approach goals for emotion regulation are characterized by a focus on documenting and proving one's emotional competence in relation to

others, and performance-avoidance goals for emotion regulation are characterized by motivations focused on avoiding the perception of a lack of emotional competence (Rusk et al., 2011). Using these definitions, Rusk et al. (2011) were the first to demonstrate that, consistent with the implicit theory framework, learning goals for emotion regulation are associated with more adaptive emotion regulation tendencies including greater self-reflection, higher emotion regulation self-efficacy beliefs and greater use cognitive reappraisal. Conversely, performance (approach and avoidance) goals for emotion regulation were associated with less favourable emotion-related outcomes, including higher depressive symptoms and greater use of maladaptive emotion regulation strategies such as rumination and thought suppression (Rusk et al., 2011).

Building on these findings, Fredericks, Uliaszek & Daros (2017) investigated the main and interaction effects of emotion regulation goals measured as both primed (called an "imposed" orientation) and trait-level variables (called a "natural" orientation), on state-level emotion regulation; that is, how individuals regulate their emotions immediately after a negative emotion induction task. Although results did not support a main effect of natural or imposed emotion regulation goal orientations on emotion regulation strategy use, significant interaction effects were found. Specifically, results indicated that when those with a natural performance goal for emotion regulation were primed with a learning goal for emotion regulation, the exhibited lower levels of rumination following the negative emotion induction task. Moreover, an increase in problem-solving was observed when one's natural (learning or performance) goal orientation was congruent with their imposed (learning or performance) goal orientation for emotion regulation. Explaining these findings, Fredericks et al. (2017) suggested that for individuals with a natural performance goal for emotion regulation, encouraging learning goals for emotion regulation may help to reduce ruminative tendencies. When trying to increase

problem-solving however, it may be more effective for a clinician to assist their client's in responding to their negative emotions from the (learning or performance focused) perspective that comes most naturally to them. That is, for a person with a natural learning goal orientation, it may be more effective to emphasize learning from negative emotional experiences when trying to increase problem-solving, whereas a focus on proving emotional control may be more effective for individuals with a natural performance goal orientation. While this study offers new insight regarding the complexity of the relationship between learning and performance goals for emotion regulation with emotion regulation at the state-level, still more work is needed to understand how these variables relate to emotion regulation strategy use - and more specifically, individuals' general patterns of emotion regulation strategy use - at the trait-level. Moreover, the positioning of these goals for emotion regulation within the larger implicit theory framework (i.e., the relationship between learning and performance goals for emotion regulation with implicit theories of emotion) has yet to be explored.

Research Questions and Hypotheses

To summarize, separate lines of study have supported the idea that implicit theories of emotion and (learning and performance) goals for emotion regulation are associated with individual differences in emotion regulation and various indices of mental health. Lower emotion controllability beliefs (i.e., entity emotion theories) and greater performance goals for emotion regulation have been linked to lower use of adaptive emotion regulation strategies and greater psychological symptoms; and higher emotion controllability beliefs and higher learning goals for emotion regulation have been associated with greater use of adaptive emotion regulation strategies and higher well-being. While the reviewed literature has been critical in establishing the social, emotional, and psychological correlates of implicit theories of emotion and goals for

emotion regulation, still several tenets of the implicit theory framework remain to be tested in the domain of emotion. In this section, I outline three specific questions addressed in this dissertation, and draw from past research on the implicit theory framework in other self-regulation domains to develop my hypotheses.

Question 1: What is the relationship between implicit theories of emotion and emotion regulation, and what role does emotion regulation play in mediating the established relationship between implicit theories of emotion and psychological functioning? As previously defined, emotion regulation refers to any conscious or nonconscious, intrinsic or extrinsic, behavioural or cognitive process involved in the monitoring, evaluation, and modulation of emotional responses (Gross, 2015). Despite the breadth of this definition, research on implicit theories of emotion has narrowly focused on relations between emotion controllability beliefs and how people regulate their emotions through the use of single cognitive emotion regulation strategies (e.g., cognitive reappraisal), leaving their associations with emotion monitoring and evaluative processes, as well as the behavioural correlates of emotion regulation, unknown. As such, the first objective of this dissertation is to understand how implicit theories of emotion may be associated with other dimensions of emotion regulation that, in turn, have been consistently associated with differences in psychological functioning. In particular, I consider relations between implicit theories of emotion and six distinct, albeit related, dimensions of emotion regulation: (a) emotional awareness, (b) emotional clarity, and (c) emotional acceptance; (d) the ability to flexibly implement emotion regulation strategies so as to modulate emotional responses in accordance with ones goals and contextual demands; and the abilities to (e) control maladaptive impulses and (f) persist in goal-directed behaviour when experiencing negative emotions (Gratz & Roemer, 2004; Gratz & Tull, 2010).

Guided by research linking entity theories of intelligence to poorer processing of self-corrective feedback (e.g., Mangels et al., 2006; Moser, Schroder, Heeter, Moran, & Lee, 2011), I propose that lower emotion controllability beliefs (i.e., entity emotion theories) will be similarly associated with poorer processing of emotional feedback, as evidenced by greater difficulties with emotional awareness and emotional clarity. Moreover, I propose that, just as entity theories of intelligence are associated with a tendency towards more self-deprecating affective responses to setbacks in the academic domain (e.g., Robins & Pals, 2002), lower emotion controllability beliefs will be associated with greater shame and embarrassment about one's own negative emotion (i.e., lower emotional acceptance). Consistent with previous research linking lower emotion controllability beliefs to lower emotion regulation self-efficacy (Tamir et al., 2007), I further hypothesize that lower emotion controllability beliefs will be associated with poorer access to strategies viewed as effective in regulating one's own emotions, suggesting that one views oneself as helpless in modulating the intensity and/or temporal features of one's own emotional responses. Finally, I hypothesize that lower emotion controllability beliefs will be associated with greater difficulty controlling maladaptive behavioural impulses and persisting in goal-directed behaviour when experiencing negative emotions. This hypothesis is supported by research on implicit theories of intelligence in the academic domain which suggests that the tendency for individuals with higher entity theories of intelligence to experience greater negative affect in response to academic difficulty is more likely to interfere with their attention and concentration on a task at hand (Dweck & Leggett, 1988). Given established links between emotion regulation difficulties and emotional problems (Berking & Whitley, 2014), I further propose that greater difficulties in each of these dimensions of emotion regulation will, in turn, be associated with higher stress and lower well-being.

Question 2: How do implicit theories relate to learning and performance goals in the domain of emotion, and what role do these goals for emotion regulation play in mediating the relationship between implicit theories of emotion and adaptive versus maladaptive patterns of emotional responding? As previously indicated, research has supported links between implicit theories of emotion and learning and performance goals for emotion regulation with individual differences in emotional functioning and psychological symptoms, but has yet to examine relations between implicit theories of emotion and goals for emotion regulation. Moreover, the implicit theory framework views implicit theories as both directly and indirectly related to mastery versus helpless patterns of self-regulatory responding through one's learning and performance goals (Dweck & Leggett, 1988). As such, the second objective of this dissertation is to examine relations between implicit theories of emotion with learning and performance goals for emotion regulation, as well as to test the direct and indirect effects (through learning and performance goals for emotion regulation) of implicit theories of emotion on multivariate profiles of adaptive versus maladaptive patterns of cognitive emotion regulation in response to negative life events.

Based on research linking implicit theories of intelligence to learning and performance goals in academic achievement (Dweck, 2000), I propose that higher emotion controllability beliefs should be associated with higher learning goals for emotion regulation, whereas lower emotion controllability beliefs should be associated with higher performance goals for emotion regulation. Just as incremental theories and learning goals have been associated with more adaptive response patterns in other self-regulation domains (Dweck, 2000), it is likely that higher emotion controllability beliefs and higher learning goals for emotion regulation are associated with greater use of adaptive (vs. maladaptive) self-regulation strategies in the domain of

emotion. Moreover, it is proposed that learning goals for emotion regulation will mediate the relationship between higher emotion controllability beliefs and adaptive emotion regulation. Conversely, entity theories and performance goals have been associated with more maladaptive response patterns in other self-regulation domains (Dweck, 2000), suggesting that lower emotion controllability beliefs may be associated with greater use of maladaptive (vs. adaptive) emotion regulation strategies, with higher performance goals for emotion regulation potentially mediating this relationship.

Question 3: how do young adults' perceptions of parental feedback about negative emotion experienced during childhood relate to implicit theories of emotion and goals for emotion regulation in young adulthood? The final objective of this dissertation is to begin to understand how implicit theories of emotion and goals for emotion regulation may develop. As previously indicated, current research suggests that feedback from important socialization figures may have significant consequences for the motivational meaning systems that a child internalizes within implicit theory-relevant domains (Dweck et al., 1995; Dweck & Grant, 2008; Dweck & Master, 2009). Although no studies have examined the effects of parental feedback on implicit theories of emotion or goals for emotion regulation specifically, research has supported relations between different kinds of parent emotion socialization practices with other emotion-related variables in childhood (e.g., Katz & Hunter, 2007; Silk et al., 2011), adolescence (e.g., Havighurst, Kehoe, & Harley, 2015; Hunter et al., 2011), and young adulthood (e.g., Guo, Mrug, & Knight, 2017; Leerkes, Supple, Su, & Cavanaugh, 2015; Lugo-Candelas, Harvey, Breaux, & Herbert, 2016; Magai, Consedine, Gillespie, O'Neal, & Vilker, 2004). Broadly, parental emotion socialization refers to the array of practices parents may use to teach their children about the appropriate expression, causes, consequences, and regulation of emotion (Eisenberg et al., 1998).

Emotion socialization practices are commonly divided into supportive (e.g., emotion validation, encouragement of emotional expression, emotion labelling, problem-solving) versus non-supportive (e.g., minimizing, punishing, ignoring) reactions, and have been theorized to stem from parents' own meta-emotion philosophies, comprised of their beliefs about the value and validity of emotional experience and expression, as well as their view of their own role in their child's emotion regulation (Dix, 1991; Goodnow & Collins, 1990; Eisenberg, Cumberland, & Spinrad, 1998; Gottman, Katz, & Hooven, 1996; Parker et al., 2012; Sheffield-Morris, Silk, Steinberg, Myers, & Robinson, 2007).

Specifically, scholars have distinguished between two primary meta-emotion philosophies, emotion coaching and emotion dismissing (Gottman et al., 1996). Parents holding an emotion coaching philosophy value the exploration and expression of emotion, and view their role as helping their child understand their emotions and develop effective emotion regulation strategies (Gottman et al., 1996). Emotion coaching parents are more likely to adopt supportive emotion socialization strategies that, in turn foster an emotional climate that is conducive to adaptive emotional expression, self-regulation, and social-emotional competence in youth (Denham, Bassett, & Wyatt, 2007; Gottman et al., 1996; Katz, Maliken, & Stettler, 2012; Sheffield-Morris et al., 2007). Conversely, an emotion dismissing philosophy is characterized by parental devaluing of emotional exploration and expression; these parents tend to view (particularly negative) emotion as potentially harmful to the child, and see their parental role as helping them ride out and rid of their emotions as quickly as possible (Gottman et al., 1996, 1997). Parents with an emotion dismissing philosophy are more likely to use non-supportive emotion socialization strategies – ignoring or dismissing their child's emotions, or reassuring that their negative feelings pass quickly and without lasting effects (Gottman et al., 1996).

Relative to emotion coaching, emotion dismissing is associated with poorer emotion regulation, as well as greater internalizing symptoms and externalizing behaviours in youth (Johnson, Hawes, Eisenberg, Kohlhoff, & Dudeney, 2017; Lunkenheimer, Shields, & Cortina, 2007; Pasalich, Waschbusch, Dadds, & Hawes, 2014; Ramsden & Hubbard, 2002).

While a majority of research on parental meta-emotion philosophies has been conducted in childhood or adolescence, there is research to suggest that emotion coaching and dismissing continue to have an effect on emotional and psychological functioning into young adulthood (e.g., Garside & Klimes-Dougan, 2002; Guo et al., 2017; Leerkes et al., 2015; Lugo-Candelas et al., 2016; Magai et al., 2004). Supporting this notion, young adults' remembered non-supportive parental emotion socialization practices during childhood have been associated with various physiological and psychological indicators of emotional dysfunction in young adulthood, including blunted cortisol reactivity and heightened negative affect in response to stress (Guo et al., 2017), higher resting vagal tone (Leerkes et al., 2015), lower trait positive and higher trait negative emotion (Magai et al., 2004), and higher psychological distress (Garside & Klimes-Dougan, 2002). On the other hand, reverse associations between young adults' remembered supportive emotion socialization practices have been found for each of these physiological and psychological outcomes (Guo et al., 2017; Leerkes et al., 2015; Magai et al., 2004).

While these studies support the idea that distinct parental emotion socialization styles predict important differences in emotional functioning from childhood to young adulthood, the mechanisms through which this process occurs remain poorly understood. Drawing from an implicit theory perspective, one possibility is that the process-oriented versus ability-focused feedback children receive about their negative emotions during childhood may lead them to internalize different emotion-related beliefs and goals, with important implications for how they

come to regulate their own negative emotions, and ultimately experience psychological health. Specifically, it is possible that children whose parents respond to their negative emotions with process-oriented feedback encouraging emotional understanding and focusing on problem-solving and strategy change (characteristic of an emotion coaching style) come to internalize a belief that emotions can be changed and controlled with effort, and value their emotional experiences as opportunities for learning and personal growth. Conversely, children whose parents view their negative emotions as something to get over with quickly, ride out, and not dwell on (characteristic of an emotion dismissing style) may come to internalize beliefs that emotions cannot be fundamentally controlled with effort. Moreover, this kind of emotion feedback may be interpreted by the child as a personal judgement of their innate ability to regulate their emotional experiences and expression, leading to goals of proving their own emotional control in the hopes of gaining the esteem of themselves, their parents, and other important socialization figures (i.e., a performance-approach goal for emotion regulation), or evading negative emotional experiences altogether in an effort to avoid the threat of losing emotional control (i.e., a performance-avoidance goal for emotion regulation).

To summarize, it is hypothesized that young adults' retrospective reports of their parents' emotion socialization style during childhood will be associated with their own emotion-related belief and goals in young adulthood. Whereas parental emotion coaching should be associated with higher emotion controllability beliefs and higher learning goals for emotion regulation, parental emotion dismissing should be associated with lower emotion controllability beliefs and higher performance (avoidance and approach) goals for emotion regulation.

Summary of Dissertation Objectives and Description of the Manuscripts

By applying an implicit theory framework to the domain of emotion, the overarching goal of this dissertation is to broaden current perspectives on the psychological processes underlying individual differences in emotion regulation, with important implications for mental health. To maintain consistency and enable comparison with the majority of published literature on implicit theories of emotion, the present study specifically focused on exploring these constructs in a sample of young adults. The first objective is to understand the role emotion regulation may play in mediating the relationship between implicit theories of emotion and emotional functioning. Addressing this objective, Manuscript 1 will investigate the mediating role of six dimensions of emotion regulation (emotional awareness, clarity, acceptance, strategy access, impulse control, and goal persistence) in the relationship between implicit theories of emotion and stress and well-being. The second objective is to examine how implicit theories relate to learning and performance goals in the domain of emotion, as well as determine the role that goals for emotion regulation may play in mediating the relationship between implicit theories of emotion and adaptive versus maladaptive patterns of cognitive emotion regulation in response to negative life events. Addressing this objective, Manuscript 2 will investigate associations between implicit theories of emotion and (learning, performance-avoidance, and performance-approach) goals for emotion regulation, as well as test the direct and indirect associations (through learning and performance goals for emotion regulation) of implicit theories of emotion with adaptive versus maladaptive multivariate profiles of cognitive emotion regulation strategy use. The final objective of this dissertation is to explore potential developmental correlates of implicit theories of emotion and goals for emotion regulation. Manuscript 3 addresses this objective by investigating relations between young adults' retrospective reports of their parents' emotion-

related feedback during childhood with implicit theories of emotion and goals for emotion regulation in young adulthood[2]. By exploring an implicit theory perspective on emotion regulation, the collective findings of this research not only help to further our understanding of the psychological processes underlying individual differences in emotion regulation, they also provide insight on how broader motivation and self-regulation paradigms may be used to conceptualize self-regulatory processes in the domain of emotion, specifically.

[2] Based on recommendations provided by Fritz and MacKinnon (2007), a minimum sample size of 462 was required to attain adequate power (.8) to detect a small mediated effect (i.e., a mediated effect produced from *a* and *b* paths of $\beta = .14$).

CHAPTER 2

MANUSCRIPT 1

Dimensions of Emotion Regulation as Mediators of the Relationship Between Implicit Theories of Emotion with Stress and Well-Being

Samira Moumne[1] and Nancy L. Heath[1]

[1]Department of Educational and Counselling Psychology, McGill University

3700 McTavish

H3A 1Y2

Montreal, Quebec, Canada

Abstract

Although beliefs about the extent to which emotions are amenable versus immutable to control (i.e., implicit theories of emotion) have been linked to various mental health indices, mediators of this relationship remain unclear. This study extends prior research by examining difficulties in multiple dimensions of emotion regulation (ER) as parallel mediators in the relationship between implicit theories of emotion and stress and well-being. In a sample of university students (n = 483), higher emotion controllability beliefs were associated with fewer difficulties in five dimensions of ER: emotional clarity, emotional acceptance, perceived access to effective ER strategies, impulse control, and maintenance of goal-directed behaviour when experiencing distress. Multiple mediator analyses revealed that, together, the five dimensions of ER fully mediated the relationship between implicit theories of emotion and stress and well-being, although specific indirect effects were only significant through emotional clarity and strategy access. Results implicate difficulties understanding one's own emotions and problems accessing effective ER strategies as key mechanisms through which lower emotion controllability beliefs may be associated with higher stress and lower well-being. Conversely, better emotional clarity and having higher perceived access to effective ER strategies may explain why higher emotion controllability beliefs are associated with better psychological functioning.

Keywords: emotion controllability beliefs, implicit theories, emotion regulation, stress, well-being

Introduction

The ability to effectively manage emotional responses in everyday life is fundamental to mental health (Berking & Wupperman, 2012; Gross & Muñoz, 1995; Troy & Mauss, 2011). Conversely, difficulties regulating emotion have been linked to a range of psychological symptoms and are a central feature of several mental disorders (Berking & Whitley, 2014; Gross & Jazaieri, 2014; Sheppes, Suri, & Gross, 2015). With many formative theories of mental health, stress, and coping rooted in the premise that cognition play a causal role in emotional responding, significant empirical attention has been paid to the cognitive processes contributing to emotional problems (Aldao & Nolen-Hoeksema, 2010; Gross, 2015; Hofmann, Asmundson, & Beck, 2013; Izard et al., 2011; Mathews & Macleod, 2005). In the current study, we focus on a particular type of cognition – peoples' beliefs about the controllability of emotion – and how they relate to emotion regulation, stress, and well-being, so as to add to further our understanding of the cognitive processes facilitating and hindering mental health.

Emotion Controllability Beliefs and Indices of Mental Health

Research suggests that people hold varying beliefs about the fundamental controllability of a variety of human attributes and traits (e.g., intelligence, athletic ability, shyness; Burnette et al., 2013). Broadly, these beliefs about controllability are referred to as implicit theories (Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988). In the domain of emotion, implicit theories refer to the core beliefs people hold about the controllability of emotional experience (Tamir, John, Srivastava, & Gross, 2007). Whereas people with higher emotion controllability beliefs (i.e., an *incremental* emotion theory) believe that everyone can learn to control and change the emotions that they have, people with lower emotion controllability beliefs (i.e., an *entity* emotion theory) believe that people have relatively little control over their emotions and cannot really change the

emotions they have (Tamir et al., 2007)[3]. Notably, empirical work in both clinical and community samples has supported that emotion controllability beliefs are associated with a range of mental health indices. Higher emotion controllability beliefs have been linked to more favorable emotional experiences, greater satisfaction with life, and better emotional, social, and psychological adjustment (e.g., Romero, Master, Paunesku, Dweck, & Gross, 2014; Tamir et al., 2007). Lower emotion controllability beliefs have been associated with higher levels of stress, interpersonal problems, and psychological symptoms including anxiety and depression (e.g., De Castella et al., 2013, 2014, 2015; Schroder, Dawood, Yalch, Donnellan, & Moser, 2015).

The Mediating Role of Emotion Regulation

While researchers have highlighted important associations between emotion controllability beliefs and psychological functioning, more work is needed to clarify why these relations exist. Proposing potential mediating mechanisms, a leading hypothesis within the implicit theory of emotion literature is that emotion controllability beliefs are associated with differences in key emotion regulation tendencies that, in turn, are associated with more, or less, adaptive emotional and psychological health (for a review, see Kneeland, Dovidio, Joormann, & Clark, 2016). Specifically, scholars have proposed that the more a person believes emotions are controllable, the more likely they are to believe that their own efforts to regulate emotion will be effective (Tamir et al., 2007). In turn, higher emotion controllability beliefs may prompt individuals to engage in earlier and more active attempts to regulate their own maladaptive emotional responses before their deleterious effects can be fully experienced, facilitating more favorable emotional functioning and better mental health over time (also see John & Gross,

[3] Although researchers describe implicit theories of emotion in categorical terms, they are in fact measured on a continuum of emotion controllability beliefs. Thus, a positive relationship between incremental emotion theories and a particular outcome may be equally interpreted as a negative relationship between entity emotion theories and the same outcome, and vice versa.

2007; Tamir & Mauss, 2011). On the other hand, people who believe emotions to be relatively immutable may be less likely to view their own emotions as amenable to control (Tamir et al., 2007). From this perspective, lower emotion controllability beliefs may lower one's engagement in early-stage emotion regulation, making it more difficult to modulate maladaptive emotions as they unfold and increasing the risk of long-term mental health difficulties (John & Gross, 2007; Tamir & Mauss, 2011; Kneeland et al., 2016).

Emotion regulation broadly refers to any conscious or nonconscious, intrinsic or extrinsic process involved in the monitoring, evaluation, and modulation of emotional responses (Gross, 2015). Nevertheless, empirical work on emotion controllability beliefs to date has narrowly focused on the use of single cognitive emotion regulation strategies as potential mediators in the relationship between emotion controllability beliefs and psychological outcomes. Such longitudinal (Tamir et al., 2007), cross-sectional (De Castella et al., 2013), and experimental (Kneeland, Nolen-Hoeksema, Dovidio, & Gruber, 2016a) studies have supported that higher emotion controllability beliefs are associated with greater use of cognitive reappraisal - a generally adaptive antecedent-focused cognitive emotion regulation strategy that involves active attempts to change one's construal of emotion-eliciting events so as to alter their meaning and emotional impact (John & Gross, 2004). In turn, cognitive reappraisal has been found to partially mediate the effect of emotion controllability beliefs on both well-being and psychological symptoms, such that lower emotion controllability beliefs were associated with less cognitive reappraisal, which in turn, was associated with lower well-being and greater psychological distress (De Castella et al., 2013). On the other hand, lower emotion controllability beliefs have been linked to greater emotional avoidance, which has been associated with less effective regulation of unwanted affect (Kappes & Schikowski, 2013). Taken together, these findings offer

preliminary support for the notion that emotion controllability beliefs are linked to distinct emotion regulation tendencies that, in turn, are related to individual differences in psychological functioning. However, the relationship between emotion controllability beliefs and other important aspects of emotion regulation have yet to be explored.

Broadening the Scope of Emotion Regulation: A Multidimensional Approach

While this literature has been essential in identifying the emotional, social, and psychological correlates of emotion controllability beliefs, more work is needed to understand how these beliefs are associated with other aspects of emotion regulation. Drawing from key conceptualizations of emotion regulation in clinical psychology (e.g., Berking et al., 2008; Berking & Whitley, 2014; Compas et al., 2013), we posited that a broader understanding could be developed by considering how emotion controllability beliefs relate to the broader emotion-related skills underlying the effective monitoring, evaluation, and modulation of emotional experiences, as opposed to the isolated cognitive strategies. Specifically, we adopted Gratz and Roemer's (2004) popular conceptualization of emotion regulation as a multidimensional construct involving the awareness, understanding, and acceptance of emotion, as well as the ability to modulate the urgency associated with emotional responses enough to inhibit maladaptive impulses and behave in accordance with one's goals when experiencing negative emotion (also see Gratz & Tull, 2010). Whereas strength in the aforementioned dimensions of emotion regulation supports positive emotional functioning, greater difficulties in these areas indicate emotion dysregulation, a transdiagnostic risk factor for a range of mental disorders (Berking & Whitley, 2014; Berking & Wupperman, 2012).

The Current Study

Recent research has supported significant associations between emotion controllability

beliefs and an array of mental health correlates (Schroder et al., 2015). While scholars have advocated that individual differences in emotion regulation likely mediate these links (John & Gross, 2007; Kneeland et al., 2016; Mauss & Tamir, 2011), studies investigating this hypothesis have only investigated the mediating role of single emotion regulation strategies (e.g., cognitive reappraisal), and none have explored more than one potential mediator at a time. This study extends previous research by exploring associations between emotion controllability beliefs and multidimensional emotion regulation. Specifically, we hypothesized that higher emotion controllability beliefs would be associated with fewer difficulties in multidimensional emotion regulation, as evidenced by fewer difficulties in emotion awareness, clarity, and acceptance, perceived access to emotion regulation strategies, impulse control, and goal persistence when experiencing negative emotion (H1). Additionally, the present study sought to deepen current understanding of the relationship between emotion controllability beliefs and psychological health by investigating difficulties in multidimensional emotion regulation as mediators in the relationship between emotion controllability beliefs and stress and well-being. Consistent with trends in the literature finding higher emotion controllability beliefs to be associated with lower stress, higher well-being, and more adaptive emotion regulation tendencies (De Castella et al., 2013; Schroder et al., 2015; Tamir et al., 2007), we hypothesized that higher emotion controllability beliefs would be associated with lower stress and higher well-being (H2), and that this relationship would be significantly mediated by fewer difficulties in multidimensional emotion regulation (H3).

Method

Participants and Procedure

Participants were recruited from a large Canadian university using contact information

obtained from a database of students who had expressed interest in participating in future studies related to stress and coping, as well as through recruitment advertisements posted on student webpages. Irrespective of recruitment method, all participants received identical surveys. Compensation included a raffle ticket for one of ten $30 gift certificates. At the end of the survey, participants were also offered feedback about their current stress and a list of mental health resources. Participants were considered for analyses if they correctly responded to all three attention items dispersed throughout the survey, indicated that they were currently registered in university, and were between 18 and 25 years old. Of the 573 participants who submitted their survey responses, 483 met these criteria (female = 391, male = 92; M_{age} = 20.20 years, SD_{age} = 1.46). Most of these students were in their first (34.8%) or second (32.9%) year of undergraduate studies in the faculty of arts (39.07%) or science (32.45%). Self-reported ethnicities were as follows: 59.01% White, 15.53% East Asian, 8.07% mixed, 3.73% Southeast Asian, 3.52% South Asian, 2.48% Arab, 1.66% Latin American, 1.24% Black, 0.21% Aboriginal, and 3.52% other (1.04% preferred not to answer).

Measures

Implicit theories of emotion. Emotion controllability beliefs were measured using the Implicit Theories of Emotion scale (ITES; Tamir et al., 2007), which includes two incremental theory items (e.g., "if they want to, people can change the emotions that they have") and two entity theory items (e.g., "the truth is, people have very little control over their emotions"), rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Entity theory items were reverse-scored and an average was calculated such that higher scores reflected higher emotion controllability beliefs, and lower scores reflected lower emotion controllability beliefs (range: 1-5). The ITES has demonstrated acceptable internal consistency (α = .77 – .78) in

college student samples (De Castella et al., 2013; Tamir et al., 2007) and was also acceptable in the current study (α = .75).

Multidimensional emotion regulation. The Difficulties in Emotion Regulation Scale Short Form (DERS-SF; Kaufman et al., 2015) was used to measure multidimensional emotion regulation. This 18-item measure adapted from the original 36-item DERS (Gratz & Roemer, 2004) assesses self-reported difficulties in six dimension of emotion regulation: emotional awareness (e.g., "I pay attention to how I feel", reverse-coded), emotional clarity (e.g., "I have difficulty making sense out of my feelings"), emotional acceptance (e.g., "when I'm upset, I become embarrassed for feeling that way"), access to strategies perceived as effective in regulating negative emotion (e.g., "when I'm upset, I believe there is nothing I can do to make myself feel better"), impulse control (e.g., "when I'm upset, I become out of control"), and goal persistence when experiencing negative emotion (e.g., "when I'm upset, I have difficulty getting work done"). Participants rated how often each item was true for them on a five-point Likert scale (1 = never to 5 = almost always). Ratings for each subscale were summed to produce scores for each of the six dimensions, such that higher values indicated greater difficulties within that emotion-related competency (range: 3 – 15); and subscale ratings were summed to produce a total emotion dysregulation score (range: 18 – 90). In the initial validation study of the DERS-SF using a college student sample, the total scale yielded demonstrated excellent internal consistency (α = .89) and a correlation of .97 with the original DERS (Kaufman et al., 2015). The subscales also demonstrated strong psychometric properties, with internal consistencies ranging from .78 to .91(Kaufman et al., 2015). Internal consistency was also acceptable in the present study (awareness = .75, strategies = .80, clarity = .81, acceptance = .84, impulse control = .89, goals = .93; total scale α = .90).

Stress. Stress was measured using the Perceived Stress Scale (PSS-4; Cohen, Kamarck, & Mermelstein, 1983). This four-item measure assesses the extent to which individuals appraise their life as having been stressful over the past month (e.g., "in the past month, how often have you felt difficulties were piling up so high that you could not overcome them?"). Participants rated the frequency with which they endorsed each item on a four-point Likert scale (0 = never to 4 = very often). After reverse-scoring two items, scores were summed to produce a total stress score such that higher scores indicated greater stress. The PSS-4 has demonstrated acceptable psychometric properties in previous studies (Warttig, Forshaw, South, & White, 2013), and internal consistency in the present sample was also acceptable ($\alpha = .83$).

Well-Being. Well-being was measured using the Mental Health Continuum-Short Form (MHC-SF; Keyes, 2005). This 14-item measure asks participants to indicate how often during the past month they have experienced various aspects of emotional (e.g., "during the past month, how often did you feel happy?"), social (e.g., "during the past month, how often did you feel that people are basically good?"), and psychological (e.g., "during the past month, how often did you feel that your life has a sense of direction or meaning to it?") well-being on a six-point Likert scale (1 = never to 6 = every day). Items were summed to produce a total well-being score, such that higher scores indicate higher overall well-being (range: 0 – 70). The MHC-SF has demonstrated good psychometric properties in samples of varying ages and nationalities (see Keyes, 2009). In the present study, internal consistency for the total well-being score was excellent ($\alpha = .92$).

Results

Handling Missing Data and Identifying Covariates

Analyses were conducted using the Statistical Package for the Social Sciences version 20

software (SPSS; IBM Corp, 2011). A missing value analysis indicated that item-level missing responses were very low (< 1%) and that data were missing completely at random as evidenced by a non-significant Little's MCAR test. As such, all missing values were imputed using the expectation-maximization method in SPSS (Tabachnick & Fidell, 2013). Data were then examined to identify potential covariates. Age and race were unrelated to the study variables, and are not discussed further. Point-biserial correlations revealed that gender (male = 92, female = 391) was significantly associated with emotional awareness and acceptance, such that females tended to report greater difficulties accepting their negative emotions, and males tended to report greater difficulties in emotion awareness. Point-biserial correlations also revealed that recruitment source (email = 336, website = 147) was significantly associated with pertinent study variables, such that individuals recruited via webpages reported higher difficulties in emotional clarity, acceptance, and strategy access, as well as higher stress and lower well-being than individuals recruited via email. As such, partial correlations controlling for gender and recruitment source were computed. Fisher's r-to-z transformations indicated no significant differences between the partial and Pearson correlations (all p's > .05). Moreover, controlling for gender and recruitment source did not alter the significance of the mediation analyses, and so reported results are without covariates. Descriptive statistics and (biserial, partial, and Pearson) correlations among the study variables are reported in Table 1.

Implicit Theories of Emotion and Multidimensional Emotion Regulation Difficulties

Significant correlations were found between emotion controllability beliefs and emotion regulation difficulties (Table 1). Consistent with hypotheses, higher emotion controllability beliefs were associated with fewer difficulties regulating emotion overall (H1), as well as lower stress and higher well-being (H2). With respect to each dimension of emotion regulation

difficulty, higher emotion controllability beliefs were associated with fewer difficulties in emotional clarity and acceptance, strategy access, impulse control, and goal persistence. Inconsistent with hypotheses, emotion controllability beliefs were unrelated to emotion awareness. As such, emotion awareness was not included in the subsequent mediation models.

Mediated Effects of Implicit Theories of Emotion on Stress and Well-Being Through The Dimensions of Emotion Regulation

Two multiple mediator analyses were conducted to evaluate five dimensions of emotion regulation (acceptance, clarity, strategy access, impulse control, and goal persistence) as parallel mediators in the relationship between emotion controllability beliefs and stress and well-being. Specifically, mediation describes a process in which the effect of one variable (X) on another variable (Y) is transmitted through one or more other variables (M): the mediator(s). When modeling mediation, the relationship between X and Y not accounting for M(s) is termed the total effect (*c*), and the relationship between X and Y after accounting for M(s) is termed the direct effect (*c'*). In simple mediation models, only one M is proposed, and the indirect effect (*ab*) signifies the effect of X on Y that is transmitted through the X→M (path *a*) and M→Y (partialling out the effects of X; path *b*) sequence (Preacher & Hayes, 2008). In parallel multiple mediator models, two or more intervening variables compete within the same mediation model such that the (specific) indirect effect for each mediator (a_ib_i) represents the effect of X on Y that is uniquely transmitted through the X→M_i (path a_i) and M_i→ Y (path b_i) sequence, after controlling for the effects of all other mediators on Y (Preacher & Hayes, 2008). Specific indirect effects are summed to produce a total indirect effect (equivalent to $c - c'$), representing the total effect of X on Y that is accounted for by the set of mediators (Hayes, 2013; Preacher & Hayes, 2008). According to Preacher and Hayes (2008), testing multiple mediator models in this

way (vs. conducting a series of simple mediation analyses) is advantageous in that it permits researchers to determine whether a total indirect effect through a set of mediators exists, as well as the extent to which specific variables within that set have unique mediating effects, controlling for the effects of all other mediators and covariates in the model. Relative to simple mediation analyses, multiple mediator models also reduce the likelihood of parameter bias due to omitted variables, and permit the magnitude of the indirect effects for each mediator to be directly compared (Preacher & Hayes, 2008).

The indirect effects of emotion controllability beliefs on stress and well-being through the five dimensions of emotion regulation difficulties were estimated using the SPSS add-on, PROCESS (Model 4; Hayes, 2013). In particular, PROCESS employed a non-parametric bootstrap resampling procedure with 5000 resamples to estimate the total and specific indirect effects and their associated 95% bias-corrected and accelerated confidence interval (CI). Mediation was said to have occurred when the 95% CI for a total indirect effect excluded zero (MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2008; Williams & Mackinnon, 2008). Assuming a significant total effect, full mediation is supported when the direct effect is not statistically different from zero, and partial mediation is supported when the direct effect is reduced relative to the total effect, but still statistically different from zero ($p < .05$; Shrout & Bolger, 2002). Completely standardized indirect effects are reported as measures of effect size (.01 = small, .09 = medium, .25 = large; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Preacher & Kelley, 2011). Ratios of the indirect effects to the total effects are also reported as estimates of the proportion of the association between X and Y that is accounted for by the mediating effect (P_M = proportion of the total effect mediated; Shrout & Bolger, 2002).

Path coefficients and total, direct, and total indirect effects for the parallel mediation models are reported in Figure 1. As the 95% CIs for the total indirect effects excluded zero and the direct effects were non-significant in both models, results supported full mediation through the five dimensions of emotion regulation difficulty (H3). Together, the five dimensions of emotion regulation difficulty accounted for approximately 70% of the total effect of emotion controllability beliefs on stress (P_M= .70 [.49, 1.06), and 73% of the total effect of emotion controllability beliefs on well-being (P_M= .73 [.49, 1.22]). Strategy access was a unique mediator relative to the other dimensions of emotion regulation in both parallel mediation analyses (stress: $ab_{strategy}$ = -.12 [-.17, -.07], well-being: $ab_{strategy}$ = .13 [.08, .19]). Emotional clarity also uniquely mediated the effects of emotion controllability beliefs (stress: $ab_{clarity}$ = -.02 [-.05, -.01]; well-being: $ab_{clarity}$ = .02 [.01, .05]), although the 95% CIs for the contrasts of the specific indirect effects supported that strategy access was a significantly stronger mediator than emotional clarity in both analyses (stress: CI [.04, .15]; well-being: CI [-.16, -.06]). Controlling for the other mediators, strategy access uniquely accounted for approximately 51% of the total effect of emotion controllability beliefs on stress (P_M = .51 [.32, .82]) and 63% of the total effect on well-being (P_M = . .63 [.39, 1.09]). Emotional clarity uniquely accounted for a smaller amount (10 and 12%, respectively) of the total effects on stress (P_M = .10 [.03, .21]) and well-being (P_M = .12 [.04, .27]). Confidence intervals for the specific indirect effects of emotional acceptance, impulse control, and goal persistence included zero indicating that these dimensions did not uniquely mediate the effect of implicit theories on stress or well-being.

Discussion

Consistent with previous research (De Castella et al., 2013; Schroder et al., 2015; Tamir et al., 2007), higher emotion controllability beliefs were associated with lower stress and higher

well-being. Extending previous research, results indicated that emotion controllability beliefs were also associated with multiple dimensions of emotion regulation. The lower one's emotion controllability beliefs, the more likely they were to have difficulty making sense out of their own feelings (low clarity) and to report guilt, embarrassment, and irritation with themself when experiencing negative emotion (non-acceptance). Additionally, low emotion controllability beliefs were associated with greater difficulties modulating the intensity and duration of one's own negative emotions (poor access to emotion regulation strategies), as well as greater difficulties controlling one's behaviors (impulse control) and concentrating on important tasks (goal persistence) when experiencing distress. Taken together, findings support significant relations between implicit theories of emotion and trait-level difficulty in important dimensions of emotion regulation.

Whereas previous studies have investigated only specific cognitive emotion regulation strategies as mediators in the relationship between emotion controllability beliefs and mental health indices (e.g., cognitive reappraisal), the present study extends current literature by examining multiple dimensions of emotion regulation as parallel mediators in the relationship between implicit theories of emotion and stress and well-being. Results indicated that, together, difficulties with emotional clarity, emotional acceptance, accessing effective emotion regulation strategies, impulse control, and goal persistence fully mediated the effects of emotion controllability beliefs on stress and well-being. Among these five dimensions of emotion regulation however, only strategy access and emotional clarity exhibited unique indirect effects.

Current findings highlight the importance of general beliefs regarding one's ability to access strategies perceived as effective in modulating the duration and intensity of one's own negative emotional experiences as a primary mechanism through which emotion controllability

beliefs may be associated with indices of mental health. Specifically, higher emotion controllability beliefs were associated with fewer difficulties accessing strategies perceived as effective in regulating one's own emotion, and in turn, were associated with lower stress and higher well-being. These results might also mean that lower emotion controllability beliefs are associated with poorer expectations regarding one's own ability to access effective emotion regulation strategies, which in turn, is associated with higher stress and lower well-being. As perceived access to effective emotion regulation strategies uniquely mediated a large majority of the relationship between emotion controllability beliefs and stress and well-being (approximately 51 and 63%, respectively), it is suggested that future research more closely investigate the different profiles of emotion regulation strategy use that may be associated with implicit theories of emotion. Indeed, investigating emotion regulation strategy use from a multivariate perspective (e.g., through cluster analysis) may help to further our understanding of whether higher emotion controllability beliefs are associated with an increased likelihood of engaging in adaptive (vs. maladaptive) emotion regulation strategies, or greater attempts to regulate emotion overall.

Current findings further implicate emotion processing as a novel pathway through which implicit theories of emotion may be linked to indices of mental health. Although implicit theories of emotion were unrelated to emotional awareness, they were associated with individual differences in emotional clarity and acceptance. Specifically, higher emotion controllability beliefs were associated with fewer difficulties understanding and accepting one's own emotions, although in turn, only emotional clarity uniquely mediated the relationship between emotion controllability beliefs and stress and well-being.

As this is the first study to investigate the relationship between implicit theories of emotion and emotion processing variables, we draw from research on implicit theories in other

domains of self-regulation to explain current findings. Specifically, decades of research on controllability beliefs in the academic achievement domain has indicated that although individuals holding entity (low controllability beliefs) versus incremental (high controllability beliefs) theories of intelligence are equally aware of academic challenges, they understand and approach these discrepancies in very different ways (for reviews, see Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013; Dweck, 2000; Dweck & Leggett, 1988). Incremental intelligence theorists are more likely to view their academic difficulties as non-threatening indicators of their current level of ability and engage in deeper semantic processing of self-corrective feedback so as to maximize their potential for growth and academic success. Entity theorists are more likely to view academic difficulties as internal-stable threats to their ability, limiting their processing of self-corrective feedback, increasing their over-identification with their failures, and reducing their potential for academic success (e.g., Blackwell, Trzesniewski, & Dweck, 2007; Mangels, Butterfield, Lamb, Good, & Dweck, 2006; Robins & Pals, 2002).

Applying this logic to implicit theories in the domain of emotion, it may be that individuals with incremental (i.e., high emotion controllability beliefs) and entity (i.e., low emotion controllability beliefs) emotion theories are equally aware of their emotions, but differ in their understanding of the discrepancies between their current and desired emotional states. A view of emotions as relatively immutable to control may promote the view that discrepancies between current and desired emotional states are threats to well-being, limiting effective processing of self-corrective emotional feedback (as evidenced by greater difficulties in emotional clarity), and increasing the likelihood of experiencing shame and guilt about emotional states (i.e., non-acceptance). On the other hand, a view of emotions as amenable to control may encourage an understanding of discrepancies between current and desired emotional

states that is less personally threatening, enabling deeper emotional processing and encouraging a more curious, open, and accepting stance to emotional difficulties. While further studies are needed to explore links between emotion controllability beliefs and emotional processing, these findings highlight substantive conceptual continuity between implicit theories in the domain of emotion and implicit theories in other domains of self-regulation. As such, continuing to draw from the implicit theory framework of self-regulation may be particularly useful in clarifying associations between implicit theories of emotion, emotional clarity, and other emotion regulation processes.

Limitations

While the present study indicates that emotion regulation is an important mechanism through which emotion controllability beliefs may be associated with psychological functioning, there are several methodological limitations. To begin, our sample consisted of predominantly female, Caucasian, university students, and so individuals of varying gender identities, ethnicities, ages, and sociodemographic backgrounds are not well represented. As such, future studies using more diverse samples are necessary to qualify current findings. Another key limitation relates to the correlational nature of our study. Throughout, we have presented a model in which beliefs temporally precede multidimensional emotion regulation. Although these hypotheses are consistent with previous studies on emotion controllability beliefs (e.g., De Castella et al., 2013; Tamir et al., 2007) as well as prominent cognitive theories of mental health (Hofmann et al., 2013), current findings cannot rule out the possibility that difficulties in emotion regulation or general mental health issues precede emotion controllability beliefs. For example, it is possible that the repeated experience of stress and emotion regulation difficulties orient individuals to view their emotions as generally immutable to control. Moreover, the cross-

sectional nature of this study cannot eliminate the possibility of reciprocal interaction. For example, it may be that lower emotion controllability beliefs lead to greater emotion regulation difficulties and increased distress, which in turn, strengthen the view that emotions are fundamentally immutable. Carefully implemented experimental and longitudinal studies are needed to confirm the chronological precedence of emotion controllability beliefs in the prediction of emotion regulation and mental health. Additionally, it should be emphasized that the current study employed self-report measures, and as such, the findings are limited by both self-knowledge and social desirability. Moreover, the use of self-report data restricts our assumption that implicit theories of emotion indeed predict individual differences in actual emotion-regulatory ability. Future work would be strengthened by the use of other assessment methods (e.g., behavioural observations, psychophysiological assessments, experience sampling techniques, qualitative interviews), which may be more effective in capturing how emotion controllability beliefs are linked to individual differences in emotion regulation and affective experiences in everyday life.

Conclusion

To conclude, the present study offers new insight regarding the specific emotion regulatory mechanisms through which emotion controllability beliefs may be associated with mental health. In line with broader implicit theory models of self-regulation, implicit theories of emotion appear to be linked to distinct affective, cognitive, and behavioural responses to emotional challenges. Although individuals with high versus low emotion controllability beliefs may be equally aware of their emotions, individuals with lower emotion controllability beliefs are more likely to report difficulties understanding, accepting, and regulating their emotions. These difficulties are characterized by lower emotional clarity and acceptance, poorer access to

effective emotion regulation strategies, and greater problems controlling maladaptive impulses and engaging in goal-directed behaviours when experiencing negative emotion. In turn, emotional clarity and perceived access to effective emotion regulation strategies may be two unique mechanisms through which emotion controllability beliefs are associated with emotional functioning. Findings suggest that implicit theories of emotion may help to clarify broad patterns of adaptive versus maladaptive emotional responding, as well as shed light on the cognitive processes underlying individual differences in emotion regulation and subsequently, mental health.

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Table 1

Descriptive statistics and correlations among emotion controllability beliefs, multidimensional emotion regulation difficulties, stress, and well-being

	1	2	3	4	5	6	7	8	9	10
1. Implicit theory	1	*.01*	*-.14**	*-.16***	*-.27***	*-.18***	*-.15***	*-.23***	*-.23***	*.21***
2. Awareness	.01	1	*.25***	*.12**	*.05*	*.15**	*-.08*	*.30***	*.12**	*-.20***
3. Clarity	-.13*	.26**	1	*.42***	*.46***	*.38***	*.28***	*.66***	*.41***	*-.38***
4. Acceptance	-.17**	.11†	.43**	1	*.54***	*.45***	*.41***	*.75***	*.37***	*-.30***
5. Strategy access	-.27**	.06	.47**	.55**	1	*.63***	*.59***	*.83***	*.60***	*-.54***
6. Impulse control	-.18**	.15*	.39**	.46**	.64**	1	*.49***	*.78***	*.43***	*-.38***
7. Goal persistence	-.16**	-.08	.29**	.42**	.60**	.50**	1	*.70***	*.41***	*-.31***
8. Total DERS	-.23**	.30**	.67**	.75**	.83**	.78**	.70**	1	*.58***	*-.52***
9. Stress	-.23**	.12*	.42**	.38**	.61**	.44**	.42**	.59**	1	*-.66***
10. Well-being	.20**	-.21**	-.39**	-.31**	-.56**	-.39**	-.32**	-.53**	-.66**	1
Age	.03	-.02	-.03	.05	.06	.05	.01	.04	.03	-.02
Gender [a]	-.07	-.10†	.03	.15*	.07	.08	.07	.09	.06	.00
Recruitment [b]	.01	.07	.13*	.12*	.18**	.12†	.08	.17**	.12*	-.16**
M	3.41	6.33	7.23	8.12	7.59	6.28	10.98	46.53	7.55	40.66
SD	0.80	2.30	2.61	3.36	3.16	3.08	3.27	12.31	3.29	13.71
Observed range	1.25-5	3-14	3-15	3-15	3-15	3-15	3-15	19-84	0-16	6-70

Note. Pearson correlations are reported for bivariate associations among the continuous study variables. Point-biserial correlations are reported for associations between continuous and dichotomous variables (gender and recruitment source). Italicized numerals denote partial correlations, controlling for gender and recruitment source ($df = 479$).

[a] Gender: males = 0, females = 1. [b] Recruitment: email = 0, webpages = 1.

** $p < .001$. * $p < .01$. † $p < .05$.

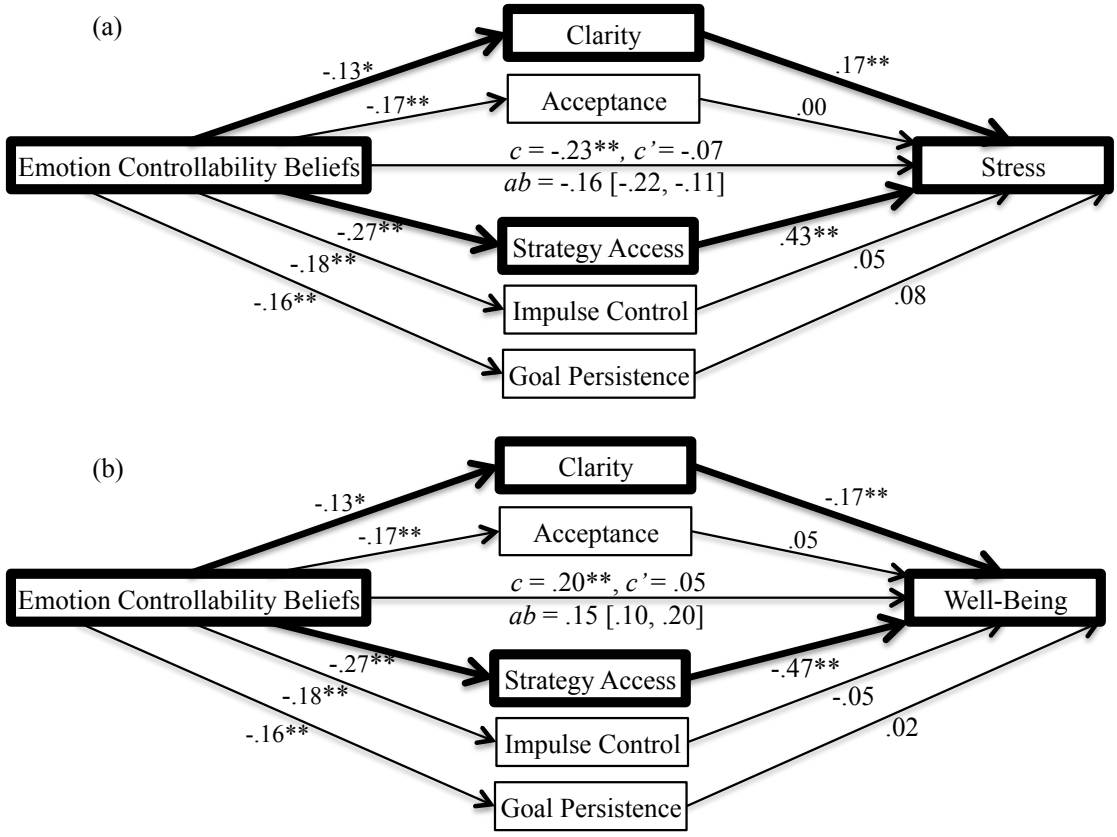

Figure 1. Parallel mediation models illustrating the total (*c*), direct (*c'*), and total indirect effects (*ab*) of emotion controllability beliefs on stress (part a) and well-being (part b) through five dimensions of emotion regulation difficulty. Note that higher clarity, acceptance, strategy access, impulse control, and goal persistence indicate higher levels of difficulty in each of these dimensions of emotion regulation. All point estimates are standardized regression coefficients. Bolded paths indicate significant indirect effects as evidenced by a 95% CI excluding zero.

** $p < .001$. * $p < .01$.

Bridging Section

The first objective of this dissertation was to investigate associations between implicit theories of emotion and multidimensional emotion regulation, as well as to further understand the mediating role that emotion regulation may play in the relationship between implicit theories of emotion and psychological functioning. Results of Manuscript 1 indicated that lower emotion controllability beliefs were associated with greater difficulties in multiple dimensions of emotion regulation, including lower emotional clarity and acceptance, poorer perceived access to effective emotion regulation strategies, and greater problems controlling impulses and maintaining goal-directed behaviour when experiencing distress. Although greater difficulties in each of these areas were associated with higher stress and lower well-being, results of a parallel mediation analysis indicated that only greater difficulties in emotional clarity and poorer perceived access to effective emotion regulation strategies uniquely mediated relations between lower emotion controllability beliefs with higher stress and lower well-being. Moreover, results supported that perceived access to emotion regulation strategies was a significantly stronger mediator of these relationships compared to emotional clarity, accounting for 51% of the total effect of implicit theories of emotion on stress and 63% of the total effect of implicit theories of emotion on well-being. Using the same sample of university students, Manuscript 2 adds to these findings by investigating relations between implicit theories of emotion and multivariate profiles of (adaptive versus maladaptive) cognitive emotion regulation in response to negative life events. Additionally, Manuscript 2 tests the implicit theory framework more explicitly by examining links between implicit theories of emotion with learning and performance goals for emotion regulation, as well as by testing these goals as mediators in the relationship between implicit theories of emotion and emotion regulation.

CHAPTER 3

MANUSCRIPT 2

Implicit Theories of Emotion, Goals for Emotion Regulation, and Multivariate Profiles of Cognitive Emotion Regulation in Response to Negative Life Events

Samira Moumne[1], Nathan C. Hall[1], and Nancy L. Heath[1]

[1]Department of Educational and Counselling Psychology

McGill University

Montreal, QC

Abstract

Why do some people routinely respond to emotional difficulty in ways that foster resilience, while others habitually engage in responses associated with deleterious consequences over time? This study examined relations between implicit theories of emotion and goals for emotion regulation (ER) with peoples' multivariate profile of cognitive ER strategy use. Cluster analysis classified 481 university students (81% female) as adaptive, maladaptive, or low regulators based on their multivariate profile of engagement in five adaptive and four maladaptive cognitive ER strategies. A discriminant function analysis predicting the multivariate profiles supported that lower emotion controllability beliefs and lower performance-avoidance goals for ER significantly distinguished maladaptive regulators from adaptive regulators. Moreover, lower learning, performance-avoidance, and performance-approach goals for ER significantly distinguished low regulators from maladaptive and low regulators. Taken together, findings support that emotion-related beliefs and goals may help to clarify why some people habitually engage in more adaptive patterns of cognitive ER in response to negative life events than others.

Keywords: beliefs, goals, emotion regulation, implicit theories, cluster analysis

Implicit Theories of Emotion, Goals for Emotion Regulation, and Multivariate Profiles of Cognitive Emotion Regulation in Response to Negative Life Events

The ability to effectively regulate emotional responding is central to adaptive functioning across the lifespan (Rawana, McPhie, Nguyen, & Norwood, 2014; Zeman, Cassano, Perry-Parrish, & Stegall, 2006). Conversely, difficulties regulating emotion are associated with difficulties throughout life and are even considered a transdiagnostic risk factor for the development and maintenance of various psychopathologies (Berking & Wupperman, 2012; Kring & Sloan, 2010). Indeed, the critical role of emotion regulation in healthy development has sparked decades of research leading to notable progress in our understanding of emotion, the strategies people use to regulate their emotions, and the links between various emotion regulation strategies and mental health (e.g., Webb, Miles, & Sheeran, 2012). Nevertheless, the psychological processes motivating people to persistently differ in their responses to emotional distress that, in turn, have important implications for psychological functioning, remain unclear.

In contrast to the emotion regulation literature, a wealth of theory and empirical work on motivation in other self-regulation domains has sought to delineate the types of goals people pursue that, in turn, serve to organize their characteristic patterns of self-regulatory responding (e.g., Wormington & Linnenbrink-Garcia, 2016). To date, the most fundamental distinction made by motivation scholars has been between *learning* (also called *mastery*) *goals* focused on developing or improving competence, and *performance goals* focused on proving (or avoiding proof of low) ability (Dykman 1998; Grant & Dweck 2003; Kaplan & Maehr, 2007). Moreover, decades of research spearheaded by Carol Dweck and colleagues has supported that learning and performance goals may stem from, and work in concert with, peoples' core beliefs, or implicit theories, about the controllability of their self-attributes to shape their interpretations of self-

relevant stimuli and guide subsequent responding (Dweck & Grant, 2008). Broadly, this research has supported that higher controllability beliefs (called an incremental theory) and higher learning goals are associated with a pattern of adaptive, mastery-oriented self-regulatory responding, whereas lower controllability beliefs (called an entity theory) and higher performance goals are linked to more maladaptive patterns (Dweck & Grant, 2008; Dweck & Leggett, 1988). In light of empirical support for an implicit theory framework in explaining distinct patterns of adaptive and maladaptive patterns of self-regulation in several other domains (e.g., academia, athletics, health psychology; for a review, see Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013), the present study sought to examine relations between implicit theories, learning and performance goals, and adaptive versus maladaptive patterns of emotional responding, so as to add to current understanding of the psychological processes that inform the self-regulation of emotion. In the following sections, we outline the implicit theory framework and the multivariate patterns of self-regulation that have been identified in the emotion regulation literature. We then proceed with a review of current research on emotion controllability beliefs and goals for emotion regulation leading to the specific hypotheses for the current study.

The Implicit Theory Framework: Controllability Beliefs, Goals, and Self-Regulation

According to the implicit theory framework, patterns of adaptive versus maladaptive self-regulation can be conceptualized as converging on two main factors: the core beliefs people hold regarding the fundamental controllability of their important self-attributes (i.e., their implicit theories), and the goals they are oriented to pursue in the context of these beliefs (Dweck & Leggett, 1988). People holding entity theories tend to view their personal attributes (e.g., intelligence, morality) as fixed characteristics that are relatively immutable to attempts at change

or control (Dweck & Leggett, 1988). From this perspective, individuals' motivations are more likely to be organized around performance goals focused on documenting and validating competence (and avoiding potential threats to competence) in relation to others (Dweck, 2000; Hong, Chiu, Dweck, Lin, & Wan, 1999). People holding incremental theories tend to view their personal attributes as more malleable characteristics that are amenable to change or control (Dweck & Leggett, 1988). From this incremental perspective, individuals' motivations are more likely to be organized around learning goals focused on personal growth through the cultivation of their competencies (Dweck, 2000; Hong et al., 1999).

A second major tenet of the implicit theory framework is that, implicit theories (both directly and indirectly through learning and performance goals) have critical implications for the self-regulatory responses of individuals facing setbacks (Dweck & Grant, 2008). Entity theories (i.e., lower controllability beliefs) and allied performance goals have been found to predict a more maladaptive pattern of self-regulation characterized by attributing failure to low ability, heightened distress and shame, increased defensiveness, and a withdrawal of self-regulatory effort (Blackwell, Trzsniewski, & Dweck, 2007; Cury, Elliot, Da Fonseca, & Moller, 2006; Magno, 2012; Robins & Pals, 2002; Trzsniewski & Robins, 2003). Incremental theories (i.e., higher controllability beliefs) and allied learning goals have been found to predict a more adaptive pattern of self-regulation, characterized by effort and strategy attributions for failure, heightened enthusiasm and determination, and more active and effective use of self-regulatory strategies (Doron, Stephan, Boiché, & Le Scanff, 2009; Dweck, 2000; Grant & Dweck, 2003; Gucciardi, Jackson, Hodge, Anthony, & Brooke, 2015; Howell & Buro, 2009; Robins & Pals, 2002). Finally, it is through these distinct patterns of responding that different implicit theories and goals are associated with different trajectories of adaptation and psychological health

(Dweck & Grant, 2008). Whereas entity theories and performance goals predict lowered self-esteem and reduced achievement over time, incremental theories and learning goals predict increases in self-esteem and an increased likelihood of goal success (Blackwell et al., 2007; Cury et al., 2006; Robins & Pals, 2002).

Adaptive and Maladaptive Patterns of Self-Regulation in the Domain of Emotion

Considerable differences exist in the ways people cognitively respond to negative life events, with important implications for their psychological health (Aldao, Nolen-Hoeksema, & Schweizer, 2010). In the emotion regulation literature, the array of conscious, cognitive means through which individuals respond to the emotion-eliciting information resulting from negative life events are commonly referred to as cognitive emotion regulation strategies (Garnefski, Kraaij, & Spinhoven, 2001; Thompson, 1994). Although the adaptiveness of any particular cognitive emotion regulation strategy clearly depends on the context and skill with which it is applied (Aldao, 2013; Bonanno & Burton, 2013), several studies have supported the idea that habitual engagement in certain strategies is associated with different levels of risk for long-term emotional problems (for reviews, see Aldao & Nolen-Hoeksema, 2011; Aldao et al., 2010; Berking & Whitley, 2014; Kring & Sloan, 2010; Naragon-Gainey, McMahon, & Chacko, 2017; Webb et al., 2012). For example, strategies that involve habitually overemphasizing the negative consequences of an unpleasant event (catastrophizing), repetitively thinking about ones thoughts and feelings about what one has experienced (rumination), and blaming oneself (self-blame) or others (other-blame) have been associated with higher levels of negative affect and greater psychological symptoms (Garnefski & Kraaij, 2006, 2007; Lei et al., 2014; Martin & Dahlen, 2005; Martins, Freire, & Ferreira-Santos, 2016; Vanderhasselt et al., 2014; Zlomke & Hahn, 2010). Conversely, accepting negative emotion (acceptance), generating neutral or positive

interpretations of distressing events (cognitive reappraisal), downplaying the significance of a negative event (putting into perspective), turning one's attention towards unrelated positive experiences (positive refocusing), and making deliberate attempts to alter a distressing event or manage its consequences (planning/problem solving) are examples of cognitive emotion regulation strategies that typically have negative associations with psychopathology (Aldao et al., 2010; Lei et al., 2014; Martin & Dahlen, 2005). Based on these associations, catastrophizing, rumination, and self- and other- blame are commonly characterized as maladaptive cognitive emotion regulation strategies, whereas acceptance, putting into perspective, positive refocusing, and planning are generally considered adaptive for mental health (Aldao & Nolen-Hoeksema, 2010; Garnefski et al., 2001).

Although individuals realistically engage in more than one emotion regulation strategy at a time (Brans, Koval, Verduyn, Lim, & Kuppens, 2013), most research has focused on bivariate associations between cognitive emotion regulation strategies and indices of mental health. As such, several scholars have emphasized the added value of considering the multivariate "profile" or unique combination of emotion regulation strategies people use, as opposed to focusing solely on their reported engagement in any discrete strategy (Eisenbarth, 2012; Sideridis, 2006). In line with this notion, multiple studies have indicated that different profiles of emotion regulation strategy use are associated with differing levels of well-being and psychological symptoms (e.g., Chesney & Gordon, 2016; Dixon-Gordon, Aldao, & Los-Reyes, 2014; Doron, Thomas-Ollivier, Vachon, & Fortes-Bourbousson, 2013; Doron, Trouillet, Maneveau, Neveu, & Ninot, 2014; Eftekhari, Zoellner, & Vigil, 2009; Van Eck, Warren, & Flory, 2017). A brief review of this body of work suggests that at least three profiles of emotion regulation have consistently emerged across studies: an "adaptive" profile characterized by high use of active (vs.

passive/avoidant) strategies, a "maladaptive" profile characterized by high use of passive and avoidant (vs. active) strategies, and an "intermediate" profile characterized by equal (high or low) endorsement of active and passive/avoidant strategies overall. In turn, individuals who have an adaptive profile tend to report the most adaptive psychological functioning, those reporting a maladaptive profile tend to report the greatest psychological symptoms, and those in an intermediate group tend to lie somewhere in between (e.g., Doron et al., 2013, 2014). Taken together, research on multivariate profiles of emotion regulation indicates that different profiles of emotion regulation are indeed associated with important differences in psychological functioning. Nevertheless, why some people may be more likely to engage in one profile of emotion regulation or another has yet to be investigated.

Implicit Theories and Self-Regulation in the Domain of Emotion

In recent years, a growing number of studies have shown that just as individuals hold implicit theories about a variety of traits and abilities (e.g., athleticism, intelligence, personality), they also hold implicit theories about more transient self-attributes, like emotion (De Castella et al., 2013; Schroder, Dawood, Yalch, Donnellan, & Moser, 2015; Tamir, John, Srivastava, & Gross, 2007). Whereas some people believe strongly that emotions are immutable to attempts at change or control (i.e., an entity emotion theory), others believe emotions to be relatively amenable to change and control through effort (i.e., an incremental emotion theory; Tamir et al., 2007). Moreover, several correlational studies have found significant links between peoples' implicit theories of emotion and a range of mental health correlates (e.g., Schroder et al., 2015). Consistent with the implicit theory framework, higher emotion controllability beliefs have been linked to greater adaptation in the emotional domain, characterized by more favourable emotional experiences, greater satisfaction with life, and better emotional, social, and

psychological adjustment (e.g., Romero, Master, Paunesku, Dweck, & Gross, 2014; Tamir et al., 2007). On the other hand, lower emotion controllability beliefs have been associated with poorer adaptation in the emotional domain, characterized by higher levels of stress, interpersonal problems, and psychological symptoms including anxiety and depression (e.g., De Castella et al., 2013, 2014, 2015; Schroder et al., 2015).

Several scholars have also suggested that implicit theories of emotion may influence adaptation in the emotional domain through their effect on self-regulation. In particular, scholars have proposed that higher emotion controllability beliefs are associated with more active emotion-regulatory attempts that promote more adaptive psychological functioning (John & Gross, 2007; Tamir et al., 2007; Tamir & Mauss, 2011). Supporting this notion, higher emotion controllability beliefs have been associated with greater cognitive reappraisal (De Castella et al., 2013; Kneeland, Nolen-Hoeksema, Dovidio, & Gruber, 2016a; Schroder et al., 2015; Tamir et al., 2007), an adaptive cognitive emotion regulation strategy involving changing the construal of emotion-eliciting events to alter their psychological impact before emotional response tendencies are elicited (Gross & John, 2003). Moreover, De Castella et al. (2013) found cognitive reappraisal to partially mediate relations between emotion controllability beliefs and psychological health, such that lower emotion controllability beliefs predicted lower cognitive reappraisal that, in turn, predicted lower well-being and greater perceived stress. Recently, some scholars have suggested that emotion controllability beliefs may not only be associated with individual differences in cognitive reappraisal, but also with one's level of engagement in cognitive emotion regulation overall (Kneeland, Dovidio, Joorman, & Clark, 2016). Supporting this notion, Kneeland, Nolen-Hoeksema, Dovidio, and Gruber (2016b) found that individuals primed with lower (vs. higher) emotion controllability beliefs were more likely to report feeling

there was nothing they could change about their emotional difficulty in response to a negative emotion induction task, and engaged in less use of adaptive (e.g., putting into perspective) and maladaptive (e.g. self-blame) cognitive emotion regulation strategies. Taken together, these findings are consistent with the implicit theory framework in suggesting that emotion controllability beliefs may indeed be linked to individual differences in the use of certain emotion-related self-regulation strategies. Nevertheless, how emotion controllability beliefs may be related to multivariate patterns of cognitive emotion regulation remains unclear. Moreover, relations between implicit theories of emotion and learning versus performance goals in the domain of emotion have yet to be explored.

Goals and Self-Regulation in the Domain of Emotion

To date, only two studies have investigated performance and learning goals in the domain of emotion. In line with the implicit theory framework, performance goals for emotion regulation refer to motivations focused on documenting and proving one's emotional competence in relation to others (performance-approach goal), or avoiding the perception of a lack of emotional competence (performance-avoidance goal; Rusk, Tamir, & Rothbaum, 2011). Learning goals for emotion regulation are motivations focused on understanding and learning from one's emotional experiences, and view emotional challenges as opportunities for personal growth (Rusk et al., 2011). Correlational studies have supported that higher performance (avoidance and approach) goals for emotion regulation are associated with higher depressive symptoms and greater use of maladaptive emotion regulation strategies such as rumination and thought suppression, whereas learning goals for emotion regulation are associated with greater self-reflection, higher emotion regulation self-efficacy beliefs, and greater use of cognitive reappraisal (Rusk et al., 2011). Moreover, experimental research has linked learning (vs. performance) goals for emotion

regulation to more adaptive emotion regulatory responses immediately after completing a negative emotion induction task (Fredericks, Uliaszek, & Daros, 2017). While further studies are needed to confirm these links, current findings are consistent with the implicit theory framework and offer preliminarily support for the notion that goals for emotion regulation are significantly linked to individual differences in self-regulation and adaptation in the domain of emotion. Nevertheless, whether goals for emotion regulation in are associated with different profiles of cognitive emotion regulation has yet to be explored, and as previously stated, the relationship between implicit theories of emotion and goals for emotion regulation is unknown.

The Current Study

An implicit theory framework of self-regulation stipulates that major patterns of adaptive and maladaptive responding converge on the implicit theories one holds about the controllable versus immutable nature of their self-attributes, and the learning versus performance goals they are oriented to pursue in the context these beliefs (Dweck & Leggett, 1988). Although research on implicit theories and goals in the domain of emotion has linked these constructs to differences in the use of single cognitive emotion regulation strategies, the relationship between implicit theories of emotion and goals for emotion regulation, as well as their roles in predicting peoples' patterns (or "profiles") of emotion regulation strategy use, have yet to be investigated.

The present study has three primary objectives. First, we sought to understand the relationship between implicit theories of emotion with learning and performance goals for emotion regulation. In line with the implicit theory framework, we hypothesized that higher emotion controllability beliefs would be associated with lower performance goals for emotion regulation and higher learning goals for emotion regulation. Next, we investigated whether implicit theories of emotion and goals for emotion regulation would predict multivariate profiles

of self-regulation in the domain of emotion. Also drawing from the implicit theory framework, we hypothesized that higher emotion controllability beliefs and higher learning goals for emotion regulation would be associated with an increased likelihood of engaging in an "adaptive" profile of cognitive emotion regulation in response to negative life events, characterized by higher use of adaptive cognitive emotion regulation strategies (i.e., acceptance, reappraisal, positive refocusing, planning, putting into perspective), and lower use of maladaptive cognitive emotion regulation strategies (i.e., catastrophizing, rumination, self-blame, and other blame). Conversely, we hypothesized that lower emotion controllability beliefs and higher performance goals for emotion regulation would be associated with an increased likelihood of engaging in a "maladaptive" emotion regulation profile, characterized by lower use of adaptive and higher use of maladaptive cognitive emotion regulation strategies. The final objective was to examine learning and performance goals for emotion regulation as mediators in the relationship between implicit theories of emotion and the profiles of cognitive emotion regulation strategy use. Specifically, it was hypothesized that higher performance goals for emotion regulation would mediate the relationship between lower emotion controllability beliefs and an increased likelihood of engaging in a maladaptive emotion regulation profile. Conversely, it was hypothesized that higher learning goals for emotion regulation would mediate the relationship between higher emotion controllability beliefs and an increased likelihood of engaging in an adaptive emotion regulation profile.

Method

Participants

Participants were 483 university students (81% female) ages 18 to 25 (M_{age} = 20.20, SD_{age} = 1.46). A majority of participants were in their first (34.8%) or second (32.9%) year of

undergraduate studies, and currently enrolled in four (40.80%) or five (47.36%) courses in the faculty of arts (39.07%) or science (32.45%). Self-reported ethnicities were as follows: 59.01% Caucasian, 15.53% East Asian, 8.07% mixed, 3.73% Southeast Asian, 3.52% South Asian, 2.48% Arab, 1.66% Latin American, 1.24% Black, 0.21% Aboriginal, and 3.52% other (1.04% preferred not to answer).

Procedure

Students were invited to participate in an online study about dealing with difficult emotions using contact information obtained from a database of students who had previously expressed interest in participating in studies related to stress and coping, as well as through advertisements posted on student webpages. Compensation included a raffle ticket for one of ten $30 gift certificates, and at the end of the survey, participants were offered feedback about their current stress and a list of student, community, and online mental health resources. A total of 573 individuals submitted their survey responses, but were only considered for analysis if they were between 18 and 25 years of age, currently enrolled at a Canadian post-secondary institution, and successfully responded to three attention items dispersed throughout the survey (n = 483).

Measures

Implicit theory of emotion (emotion controllability beliefs). The Implicit Theories of Emotion scale (ITES; Tamir et al., 2007) included two *incremental* theory items (e.g., "if they want to, people can change the emotions that they have") and two *entity* theory items (e.g., "the truth is, people have very little control over their emotions"), rated on a five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). Entity items were reverse-scored and an average was calculated such that higher scores reflected higher emotion controllability beliefs (i.e., an incremental emotion theory), and lower scores reflected lower emotion controllability beliefs

(i.e., an entity emotion theory; range: 1-5). The ITES has demonstrated acceptable internal consistency (α = .77 – .78) in college student samples (De Castella et al., 2013; Tamir et al., 2007) and was also acceptable in the present investigation (α = .75).

Cognitive emotion regulation strategies. The 18-item Cognitive Emotion Regulation Questionnaire (CERQ-Short; Garnefski & Kraaij, 2006) was used to assess trait-level engagement in five adaptive cognitive emotion regulation strategies: acceptance (e.g., "I think that I have to accept that this has happened"), planning (e.g., "I think about a plan of what I can do best"), refocusing (e.g. "I think of pleasant things that have nothing to do with it"), reappraisal (e.g., "I think I can learn something from the situation"), putting into perspective (e.g., "I think that it hasn't been too bad compared to other things"); and four maladaptive cognitive emotion regulation strategies: rumination (e.g., "I am preoccupied with what I think and feel about what I have experienced"), catastrophizing (e.g., "I continually think about how horrible the situation has been"), self-blame (e.g., "I think that basically the cause must lie within myself"), and other-blame (e.g., "I feel that others are responsible for what has happened"). Participants rated each item on a five-point Likert scale (1 = *almost never*, 5 = *almost always*) and ratings were summed for each scale (range: 2-10). An initial validation study supported the nine-factor structure and internal consistency of the CERQ-Short subscales (α = .68 [self-blame] to .81 [catastrophizing and positive reappraisal]), and it's convergent validity with the original 36-item measure (Garnefski & Kraaij, 2006). In the present study, internal consistency (α) was acceptable for a majority of the scales (catastrophizing = .86, acceptance = .82, perspective = .80, refocusing = .80, reappraisal = .78, other-blame = .77, self-blame = .76) but may questionable for the planning (α = .67) and rumination (α = .63) subscales. This is consistent with previous research finding

relatively lower internal consistency values for these particular subscales (e.g., Chesney & Gordon, 2016; Ireland, Clough, & Day, 2017).

Goals for emotion regulation. Goals for emotion regulation were measured using the adapted version of the Achievement Goal Scale (AGS; Elliot & Church, 1997) established by Rusk et al. (2011). Five items assessed learning goals (e.g., "I want to learn as much as possible from my emotions") and performance goals were divided into approach and avoidance orientations, such that four items assessed a performance-approach orientation (e.g., "it is important to me to handle my emotions better than other people do"), and four items assessed a performance-avoidance orientation (e.g., "I just want to avoid being unable to change how I feel"). Items were rated on a seven-point Likert scale (1 = *not at all true of me*, 7 = *very true of me*), and ratings were averaged for each subscale such that higher scores reflected higher learning, performance-avoidance, or performance-approach goals (ranges: 1-7). Rusk et al. (2011) found this adapted version of the AGS to have acceptable internal consistency for learning ($\alpha = .90$), approach goals ($\alpha = .93$), and avoidance goals ($\alpha = .78$). Internal consistency was similarly acceptable in the present sample (α: avoidance goals = .76; learning goals = .85; approach goals = .89).

Stress. Stress was measured using the four-item Perceived Stress Scale (PSS-4; Cohen, Kamarck, & Mermelstein, 1983), which assesses the extent to which individuals appraise their life as having been stressful over the past month (e.g., "in the past month, how often have you felt difficulties were piling up so high that you could not overcome them?") on a four-point Likert scale (0 = *never*, 4 = *very often*). After reverse-scoring two items, scores were summed to produce a total stress score such that higher scores indicated greater stress. The PSS-4 has demonstrated acceptable psychometric properties in previous studies ($\alpha = .77$; Warttig, Forshaw,

South, & White, 2013), and internal consistency in this sample was good (α = .83).

Well-being. Well-being was measured using the 14-item Mental Health Continuum-Short Form (MHC-SF; Keyes, 2005), which asks participants to indicate how often during the past month they have experienced various aspects of emotional (e.g., "during the past month, how often did you feel happy?"), social (e.g., "during the past month, how often did you feel that people are basically good?"), and psychological (e.g., "during the past month, how often did you feel that your life has a sense of direction or meaning to it?") well-being on a six-point Likert scale (1 = *never*, 6 = *every day*). Items were summed to produce a total well-being score (range: 0 – 70). The MHC-SF has demonstrated good psychometric properties in samples of varying ages and nationalities (α > .80; for an overview, see Keyes, 2009) and internal consistency for the total well-being score was excellent (α = .92).

Emotion dysregulation. Trait-level emotion dysregulation was assessed using the Difficulties in Emotion Regulation Scale Short Form (DERS-SF; Kaufman et al., 2015). This 18-item summed measure adapted from the original 36-item DERS (Gratz & Roemer, 2004) assesses self-reported deficits in six areas on a five-point Likert scale (1 = *never* to 5 = *almost always*): emotional awareness, clarity, and acceptance, the perceived ability to effectively modulate negative emotion, and the perceived ability to control behavioral impulses and maintain goal-directed behavior when experiencing negative emotion (range: 18 – 90). Consistent with Kaufman et al.'s (2015) initial validation study which indicated strong internal consistency for the total DERS-SF score (α = .89), internal reliability for the total score in the current sample was also strong (α = .90).

Results

Preliminary Analyses

Item-level missing data was low (<1%) and missing completely at random, as evidenced by a non-significant Little's MCAR test ($p > .05$). Missing values were thus imputed using expectation maximization (Tabachnick & Fidell, 2013). Two multivariate outliers were identified and excluded from analyses (analyzed $n = 481$; female = 390, male = 91). Correlation, ANOVA, and *t*-test analyses were conducted to explore differences among the study variables in terms of age, race, and gender ($p < .05$). Age ($M_{age} = 20.20$, $SD_{age} = 1.46$) and race were not significantly related to the study variables. Participants significantly differed in rumination, $F(1, 479) = 5.77$, $p = .017$ based on gender, such that males ($M = 6.80$, $SD = 1.91$) reported significantly lower rumination compared to females ($M = 7.35$, $SD = 1.95$). Participants also significantly differed based on performance-avoidance goals, $F(1, 479) = 7.69$, $p = .006$, such that males ($M = 3.78$, $SD = 1.36$) reported significantly lower performance-avoidance goals compared to females ($M = 4.23$, $SD = 1.41$) compared to females. As results showed that the pattern of significance for all analyses did not change with and without controlling for gender, analyses without controlling for gender are reported.

Descriptive statistics and correlations among the variables in the overall sample are reported in Table 1. Results revealed that the three goals for emotion regulation (performance-avoidance, performance-approach, and learning goals) were weakly positively correlated. Fisher's *r*-to-*z* transformations were conducted to examine potential differences in the strengths of these correlations. Results indicated that performance-approach goals were more strongly positively correlated with performance-avoidance (vs. learning) goals for emotion regulation ($z = 2.04$, $p = .04$), and learning goals were more strongly positively correlated with performance-

approach (vs. performance-avoidance) goals for emotion regulation ($z = 2.43$, $p = .01$). Correlation analyses further indicated that emotion controllability beliefs were weakly negatively correlated with performance-avoidance goals, weakly positively correlated with performance-approach goals, and non-significantly correlated with learning goals for emotion regulation.

Bivariate correlations between the nine cognitive emotion regulation strategies with stress and well-being were as expected, indicating that the five characteristically adaptive cognitive emotion regulation strategies (acceptance, reappraisal, refocusing, putting into perspective, and planning) were indeed negatively correlated with stress and positively correlated with well-being, and three of the four characteristically maladaptive cognitive emotion regulation strategies (catastrophizing, rumination, and self-blame) were positively correlated with stress and negatively correlated with well-being. The remaining maladaptive strategy, other-blame, was not significantly correlated with neither stress nor well-being. Finally, correlations among the nine cognitive emotion regulation strategies were below .70 (ranging from .00 to .54), supporting the independence of these constructs and suitability for cluster analysis (Nunnally, 1994).

Creating the Multivariate Profiles of Cognitive Emotion Regulation

Following guidelines provided by Hair, Black, Babin, and Anderson (2010), a hierarchical followed by a non-hierarchical cluster analysis was conducted to classify participants according to similarities in their patterns of engagement across nine cognitive emotion regulation strategies: acceptance, positive reappraisal, putting into perspective, positive refocusing, catastrophizing, rumination, self-blame, and other-blame. First, a hierarchical cluster analysis using Ward's linkage clustering algorithm and the minimized squared Euclidean distances similarity measure was conducted to identify and compare a range of possible cluster solutions in the data. Based on the percentage changes in heterogeneity of the agglomeration

schedule coefficients, the dendogram, and the interpretability of the cluster solution, results supported a three-cluster solution (Aldenderfer & Blashfield, 1984; Hair et al., 2010). Hierarchical (i.e., k-means) cluster analysis was then used to optimize the three-cluster solution. In this iterative procedure, cluster means from the hierarchical analysis were used as starting points for each cluster, then, an algorithm reassigned participants among clusters until maximum homogeneity within clusters was achieved (Hair et al., 2010). Supporting the tenability of the three-cluster solution, cross-classification analysis indicated that a large majority (82%) of participants retained their original cluster membership across the hierarchical and non-hierarchical clustering methods. Moreover, the result of a MANOVA examining the multivariate effect the nine cognitive emotion regulation strategies on cluster membership was significant, Wilk's $\lambda = .17$, $F(18, 940) = 74.36$, $p < .001$, and a follow-up discriminant function analysis predicting cluster membership from the nine CERQ-Short scales correctly classified 96.3% of cases, supporting that the three clusters were adequately separated in discriminant space.

Descriptive statistics and ANOVA results confirming group differences between the three clusters on each of the nine cognitive emotion regulation strategies are presented in Table 2. Results of a series of one-way ANOVAs indicated that Cluster 1 was characterized by the highest use of adaptive cognitive emotion regulation strategies (acceptance, reappraisal, positive refocusing, planning, and putting into perspective), whereas Cluster 2 was characterized by the highest use of maladaptive strategies (self-blame, other-blame, rumination, and catastrophizing) among the three clusters. Cluster 3 was characterized by the lowest use of planning, reappraisal, self-blame, and rumination among the three clusters, but exhibited equal levels of acceptance, refocusing, and perspective taking compared to Cluster 2, and equal levels of other-blame and catastrophizing compared to Cluster 1. To facilitate interpretation, a graphical depiction of the

final cluster centroids (mean z-scores) for each strategy in each cluster is provided in Figure 1. The intra-individual pattern of cognitive emotion regulation strategy use exhibited in Cluster 1 suggests that this cluster was characterized by simultaneously high use of adaptive and low use of maladaptive emotion regulation strategies, whereas Cluster 2 showed the opposite pattern. Finally, Cluster 3 exhibited an intra-individual pattern characterized by lower use of adaptive and maladaptive cognitive emotion regulation strategies overall. Based on differences in their relative and individual patterns of engagement across the nine cognitive emotion regulation strategies, Clusters 1, 2, and 3 were labelled the "*adaptive regulators*" (n = 182), "*maladaptive regulators*" (n = 132), and "*low regulators*" (n = 167), respectively.

Validating the Clusters

To validate the clusters, a series of univariate ANOVAs were conducted examining group differences with respect to age, past-month stress and well-being, and trait emotion dysregulation (cluster means and univariate F statistics reported in Table 2). Results indicated that the three clusters significantly differed in stress, well-being, and emotion dysregulation, such that adaptive regulators reported the highest well-being and lowest stress/dysregulation, low regulators reported moderate well-being and moderate stress/dysregulation, and maladaptive regulators reported the lowest well-being and highest stress/dysregulation. No significant differences between clusters were found for age, $F(2, 478) = 2.82$, $p = .061$. A series of chi-square analyses further indicated that the three clusters did not significantly differ with respect to race, $\chi^2(20) = 21.16$, $p = .388$, or gender, $\chi^2(2) = 2.59$, $p = .274$.

Predicting the Multivariate Profiles of Cognitive Emotion Regulation Strategies

Results of a MANOVA indicated that the three clusters significantly differed in their implicit theory of emotion and the three goals for emotion regulation, Wilks' $\lambda = .75$, $F(8, 950) =$

19.30, $p < .001$, $\eta_p^2 = .14$. Results were followed up with a discriminant function analysis specifying implicit theory of emotion and learning, performance-avoidance, and performance-approach goals as the independent variables (i.e., forming the discriminating predictor variate), and cluster membership (adaptive, maladaptive, and low regulators) as the three-group dependent variate. Two significant discriminant functions were extracted that, together, explained 28% of the total variance among clusters, Functions 1 through 2: Wilk's $\lambda = .74$, $X^2(8) = 143.50$, $p < .001$; step-down Function 2: Wilk's $\lambda = .92$, $X^2(3) = 39.09$, $p < .001$. Function 1 was dominant, accounting for 74% of total explained variance, Eigenvalue = .24, $R_c^{2=}$ .20, and Function 2 accounted for the remaining 26%, Eigenvalue = .09, $R_c^2 = .08$. Centroids (i.e., multivariate means) for each cluster on the weighted linear combination of predictor variables represented by Functions 1 and 2 are illustrated in Figure 2.

An analysis of the structure coefficients (i.e., discriminant loadings) indicated that higher levels of the latent construct represented by Function 1 were primarily represented by higher performance-avoidance goals for emotion regulation (.87) followed by lower emotion controllability beliefs (-.39). Discriminant loadings on Function 1 for performance-approach (.10) and learning (-.25) goals were less than .30 and thus considered to be of lesser importance in terms of their impact on Function 1. Cluster centroids indicated that Function 1 primarily distinguished between the maladaptive and adaptive regulators, suggesting that higher performance-avoidance goals and lower emotion controllability beliefs were associated an increased likelihood of engaging in a maladaptive versus adaptive pattern of cognitive emotion regulation. Consistent with this notion, results of a follow-up ANOVA indicated that maladaptive regulators reported significantly lower emotion controllability beliefs and higher performance-avoidance goals compared to adaptive regulators (means and descriptive statistics

are reported in Table 2). Results of the follow-up ANOVA also supported that adaptive regulators reported significantly higher emotion controllability beliefs compared to low regulators whom, in turn, did not significantly differ from maladaptive regulators in their emotion controllability beliefs.

Function 2 was primarily associated with higher levels of learning goals (.91), followed by higher levels of performance-approach (.50) and performance-avoidance (.44) goals for emotion regulation. The loading for implicit theory of emotion (.20) on Function 2 was less than .30, and was thus considered non-impactful. As Function 2 primarily distinguished between the low and non-low (i.e., adaptive and maladaptive) regulators, findings suggest that higher goals for emotion regulation overall were associated with a decreased likelihood of endorsing a profile characterized by low engagement in cognitive emotion regulation. Consistent with this notion, results of a series of follow-up ANOVAs revealed that low regulators reported significantly lower learning, performance-avoidance, and performance-approach goals compared to the maladaptive regulators, and significantly lower learning and performance-approach goals compared to the adaptive regulators. Low regulators did not significantly differ from adaptive regulators in their performance-avoidance goals, and adaptive regulators did not significantly differ from maladaptive regulators in their performance-approach goals.

Results of a leave-out-one cross-validation classification analysis using prior probabilities computed from initial cluster sizes (adaptive regulators = .38, maladaptive regulators = .27, low regulators = .35) are illustrated in Table 3. Press' Q statistic was significant, $X^2(1) = 102.49$, $p < .001$, indicating that the independent predictor variate (i.e., implicit theories of emotion and the three goals for emotion regulation) reliably distinguished between the adaptive, maladaptive, and low regulators at a better-than-chance level. Overall classification accuracy was 55%, with 63%

of adaptive, 61% of maladaptive, and 42% of low regulators correctly classified. Misclassification was primarily due to a high proportion of low regulators being misclassified as either adaptive or maladaptive regulators (35 and 23%, respectively).

Indirect Effects of Implicit Theories of Emotion on Emotion Regulation Through Learning and Performance Goals for Emotion Regulation

A nonparametric bootstrap resampling procedure with 5000 resamples was used to estimate the total (*c*), direct (*c'*), and indirect effects (*ab*) of implicit theories of emotion on the likelihood of engaging in an adaptive versus maladaptive emotion regulation profile through the three goals for emotion regulation (learning, performance-avoidance, and performance-approach) using the SPSS add-on PROCESS (Model 4; Hayes, 2012). PROCESS is especially useful for testing this mediation model because it permits researchers to include more than one intervening variable as parallel mediators in the regression model, such that the specific indirect effects for each mediator (a_ib_i) denote the effect of the independent variable (X) on the outcome variable (Y) that is uniquely transmitted through the X→M_i (path a_i) and M_i→ Y (path b_i) sequence, after controlling for the effects of all other mediators on Y (Preacher & Hayes, 2008). As such, the specific indirect effects reported denote the unique indirect effects for each emotion regulation goal on the relationship between implicit theories of emotion and the multivariate profile of cognitive emotion regulation. Moreover, PROCESS is advantageous in that it can combine ordinary least squares and maximum likelihood logistic regression techniques when testing for indirect effects, permitting researchers to analyze mediation models with dichotomous outcome variables (also called mediated logistic regression; Hayes, 2012).

As our hypotheses were concerned with the mediating effects of learning and performance goals for emotion regulation on the relationship between implicit theories of

emotion and the adaptive versus maladaptive profiles of cognitive emotion regulation only, low regulators were excluded from this analysis. Adaptive regulators were coded as 1 and maladaptive regulators were coded as 0. Following guidelines provided by Preacher and Hayes (2008), regression coefficients for each path in the mediated logistic regressions were evaluated at an alpha level of .05 and mediation was assumed if the 95% bias-corrected bootstrapped confidence interval (CI) for an indirect effect excluded zero. Implicit theory of emotion and the three goals for emotion regulation were standardized prior to analysis, and so resulting paths (*a* and *b*) are standardized regression coefficients. A diagram illustrating results of the mediated logistic regression model is provided in Figure 3.

Results indicated that the total effect of implicit theory of emotion on adaptive (vs. maladaptive) emotion regulation was positive and significant, $c = .47$, $p < .001$, $OR = 1.62$, 95% CI [1.28, 2.04], suggesting that individuals with higher emotion controllability beliefs were more likely to report an adaptive (vs. maladaptive) emotion regulation profile. After including the three goals for emotion regulation in the model, the direct effect of implicit theory of emotion on adaptive (vs. maladaptive) emotion regulation was reduced but remained significant, $c' = .38$, $p = .007$, $OR = 1.46$, 95% CI [1.11, 1.92]. Moreover, the confidence interval for the total indirect effect excluded zero, supporting that mediation had occurred through the three goals for emotion regulation, $ab_{total} = .25$, 95% CI [.09, .45]. An analysis of the specific indirect effects revealed that, among the three goals for emotion regulation, only performance-avoidance goals uniquely mediated this relationship, $ab_{avoidance} = .21$, 95% CI [.07, .38], such that participants who reported higher emotion controllability beliefs also reported lower performance-avoidance goals for emotion regulation that, in turn, predicted a higher likelihood of endorsing an adaptive (vs. maladaptive) emotion regulation profile. Unique mediating effects were not found through

performance-approach, $ab_{approach}$ = .02, 95% CI [-.01, .10], or learning goals for emotion regulation, $ab_{learning}$ = .02, 95% CI [-.02, .08].

Discussion

Research adopting an implicit theory framework for conceptualizing motivation in various self-regulation domains has indicated that major patterns of adaptive versus maladaptive responding can be explained by peoples' core beliefs, or implicit theories, regarding the controllable versus immutable nature of their self-attributes, and the goals they are oriented to pursue in the context of these beliefs (Dweck & Grant, 2008; Dweck & Leggett, 1988). Drawing from the implicit theory framework, the present study is the first to investigate associations between implicit theories, goals, and adaptive versus maladaptive patterns of self-regulation in the domain of emotion.

Relations Between Implicit Theories of Emotion and Goals for Emotion Regulation

As the only study examining both implicit theories and goals in the domain of emotion to date, a primary objective was to explore relations between these constructs. While, consistent with an implicit theory framework, we anticipated a negative association between emotion controllability beliefs and performance goals for emotion regulation, findings were partially inconsistent with these hypotheses. Although lower emotion controllability beliefs were indeed associated with higher performance-avoidance goals, higher emotion controllability beliefs were unexpectedly positively correlated with performance-approach goals, suggesting that the more one endorsed a belief that emotions are controllable the more likely they were to value demonstrating their emotional competence. Despite inconsistency with the implicit theory framework, these findings may be understood in light of previous research linking higher emotion controllability beliefs to greater emotion regulation self-efficacy (Tamir et al., 2007).

Specifically, it may be that individuals with higher emotion controllability beliefs tend to also view themselves as better able to regulate their emotions, and are thus more motivated to prove emotional competence because they feel that their attempts will be successful. Conversely, because individuals with lower emotion controllability beliefs tend to also view themselves as less effective at regulating their own emotions, they may feel more threatened by prospects of having to demonstrate their emotional competence, lowering their likelihood of endorsing performance-approach goals for emotion regulation. Nonetheless, additional studies are required to replicate these results, and future research may wish to investigate the moderating role of emotion regulation self-efficacy beliefs on the relationship between implicit theories of emotion and goals for emotion regulation.

Also inconsistent with hypotheses, implicit theories of emotion were unrelated to learning goals for emotion regulation, suggesting that higher controllability beliefs may not be an important precursor for learning goals in the domain of emotion. Future research examining relations between learning goals for emotion regulation and other kinds of emotion-related implicit theories may help to clarify this finding. One possibility is that learning goals for emotion regulation are more strongly linked to implicit theories regarding one's ability to control their *reaction towards* their emotions, as opposed to their beliefs about the controllability of emotional experience itself. Indeed, several emotion scholars have emphasized important distinctions between one's ability to modify their reactions towards their emotional responses (emotion regulation) versus how these emotions arise (emotion generation) and the characteristic nature of one's emotional responses (emotional reactivity; Gross, Sheppes, & Urry, 2011; Linehan, Bohus, & Lynch, 2007; Mennin, Heimberg, Turk, & Fresco, 2005). It may be that lay people also hold different implicit beliefs about emotion regulation, emotion generation, and

emotional reactivity, each with different implications for their goals in the domain of emotion. Future research may thus seek to clarify other kinds of emotion-related implicit theories people may hold and their unique roles in predicting learning, and other, goals for emotion regulation.

Predicting the Multivariate Profiles of Cognitive Emotion Regulation

Past research has supported significant relations between implicit theories of emotion and goals for emotion regulation with individual differences in the use of single cognitive emotion regulation strategies (e.g., Rusk et al., 2011; Schroder et al., 2015; Tamir et al., 2007). The present study extends this literature by demonstrating links between implicit theories of emotion and goals for emotion regulation with multivariate profiles of cognitive emotion regulation strategy use. In line with the findings of previous studies using cluster analysis to categorize individuals according to their multivariate profiles of cognitive emotion regulation (Doron et al., 2013), three intra-individual patterns of cognitive emotion regulation were identified in the current study: the adaptive, maladaptive, and low regulators. Adaptive regulators exhibited simultaneously high use of adaptive (reappraisal, refocusing, putting into perspective, acceptance, and planning) and low use of maladaptive (self-blame, other-blame, catastrophizing, and rumination) strategies, and reported lower stress, lower overall emotion regulation difficulties, and higher well-being compared to maladaptive and low regulators. Maladaptive regulators exhibited simultaneously low use of adaptive and high use of maladaptive strategies, and reported higher stress, higher emotion regulation difficulties, and lower well-being compared to adaptive and low regulators. Finally, low regulators exhibited a pattern of low adaptive and maladaptive strategies overall, and reported moderate stress, emotion regulation difficulties, and well-being compared to the adaptive and maladaptive regulators. Whereas past research has traditionally focused on associations between single cognitive emotion regulation strategies and

mental health, current findings add to a growing literature suggesting that one's overall pattern of cognitive emotion regulation strategy use is importantly related to psychological adjustment (Doron et al., 2013).

Examining group differences with respect to implicit theories of emotion and goals for emotion regulation, results indicated that adaptive regulators reported significantly higher emotion controllability beliefs and learning goals for emotion regulation, as well as significantly lower performance-avoidance goals, compared to the maladaptive regulators. Low regulators reported significantly lower performance-approach goals compared to the adaptive and maladaptive regulators, who in turn, did not significantly differ in their performance-approach goals. Moreover, results of a discriminant function analysis supported that the tendency for maladaptive regulators to report lower emotion controllability beliefs and, particularly, higher performance-avoidance goals for emotion regulation, primarily distinguished them from the adaptive regulators. Low regulators, however, were primarily distinguished from adaptive and maladaptive regulators by their tendency to report lower (learning, performance-approach, and performance-avoidance) goals for emotion regulation overall.

Together, these findings support two main conclusions. First, they suggest that, although individuals who report habitually engaging in a maladaptive (vs. adaptive) pattern of emotion regulation indeed report lower goals of understanding and learning from their difficult emotions, it is their tendency to be overly concerned with the appearance of emotional instability coupled with lower beliefs in the fundamental controllability of emotion that are the most distinguishing characteristics of this group. Second, results support that one's overall level of engagement in cognitive emotion regulation may be more importantly tied to one's goals for emotion regulation than one's beliefs in the controllability of emotion. Specifically, individuals with lower learning,

performance-approach, *and* performance-avoidance goals for emotion regulation may be more likely to report a pattern of low (vs. adaptive or maladaptive) cognitive emotion regulation overall. Nevertheless, it is important to note that a classification analysis predicting the three profiles of cognitive emotion regulation from emotion controllability beliefs and learning, performance-approach, and performance-avoidance goals for emotion regulation suggested that these constructs were relatively less successful at classifying low regulators compared to the adaptive and maladaptive regulators (42% of low regulators were correctly classified, compared to 61 and 63% of adaptive and maladaptive regulators, respectively). As such, further research is needed to clarify additional psychological processes that may contribute to a pattern of low cognitive emotion regulation, specifically.

Performance-Approach Goals for Emotion Regulation

The present study revealed some interesting findings pertaining to performance-approach goals for emotion regulation. Specifically, correlation analyses indicated that although performance-approach goals were more strongly positively correlated with performance-avoidance goals for emotion regulation, they were also significantly positively correlated with learning goals for emotion regulation, and positively correlated to a small degree with nearly all of the adaptive *and* maladaptive cognitive emotion regulation strategies. Moreover, results indicated that, while the adaptive and maladaptive regulators significantly differed in their learning and performance-avoidance goals for emotion regulation, they did not significantly differ in their performance-approach goals. As such, the relevance of performance-approach goals for emotion regulation remains unclear.

Drawing from research on learning and performance goals in other domains, one possibility is that the adaptiveness of performance-approach goals depends on extent to which

other (i.e., learning and performance-avoidance) goals are simultaneously endorsed (Wormington & Linnenbrink-Garcia, 2016). For example, several scholars have argued that a combination of high learning and high performance-approach goals in the academic achievement domain is the most adaptive for learning and academic functioning (Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Senko, Hulleman, & Harackiewicz, 2012), whereas a combination of high performance-approach and high performance-avoidance goals is associated with a range of negative academic outcomes (Law, Elliot, & Murayama. 2012; Linnenbrink-Garcia et al. 2012; Murayama & Elliot, 2009). Similarly, it is possible that performance-approach goals for emotion regulation are not inherently adaptive or maladaptive - rather, the adaptiveness of performance-approach goals for emotion regulation may vary depending on how much learning versus performance-avoidance goals for emotion regulation are simultaneously endorsed. To test this notion, future research may use cluster analysis to determine how people typically combine learning, performance-approach, and performance-avoidance goals for emotion regulation, followed by analyses of variance to examine group differences between the resulting goal profiles in terms of their emotion regulation and psychological symptoms. Indeed, such analyses would provide a more nuanced perspective on when performance-approach goals are adaptive for emotional responding and mental health.

The Mediating Role of Performance-Avoidance Goals

Drawing from the implicit theory framework, a final goal of this study was to investigate learning and performance goals for emotion regulation as mediators in the relationship between emotion controllability beliefs and the profiles of emotion regulation. Findings suggested that, compared to learning and performance-approach goals, only performance-avoidance goals for emotion regulation uniquely mediated the relationship between implicit theories of emotion and

adaptive versus maladaptive emotional responding. In line with theoretical expectations, higher emotion controllability beliefs predicted lower performance-avoidance goals for emotion regulation that, in turn, predicted a higher likelihood of engaging in an adaptive (vs. maladaptive) pattern of emotion regulation. Although the cross-sectional nature of this study precludes causal conclusions, findings are consistent with the original implicit theory framework (Dweck & Leggett, 1988), suggesting that lower emotion controllability beliefs may predispose individuals towards a preoccupation with avoiding emotional difficulty that increases the likelihood of maladaptive cognitive responding in the face of emotional distress. Conversely, by lowering one's motivations to avoid emotional difficulty, higher emotion controllability beliefs may increase one's likelihood of engaging in a more adaptive pattern of emotion regulation.

Limitations

A limitation of this study is it's cross-sectional design. Throughout, we have presented a model in which implicit theories of emotion and goals for emotion regulation precede peoples' profiles of cognitive emotion regulation. Although these hypotheses are firmly rooted in the implicit theory framework (Dweck & Leggett, 1988) and empirical support for its tenets (e.g., Burnette al., 2013; Dweck, 2000), true causal inferences are not possible given the correlational nature of this study. Likewise, we cannot rule out the potential for reciprocal interaction. For example, it is possible that lower emotion controllability beliefs and performance-avoidance goals for emotion regulation both increase maladaptive cognitive emotion regulation strategy use and, at the same time, are strengthened when one experiences repeated emotion regulation difficulties. Carefully implemented longitudinal studies are thus needed to confirm chronological links between these constructs. Additionally, it should be emphasized that implicit theories of emotion and goals for emotion regulation accounted for only 28% of the variance between the

three profiles of cognitive emotion regulation. Future studies that include factors such as emotion regulation self-efficacy, and other types of emotion related beliefs may improve the predictive ability of the current model. Finally, all results are subject to replication in other samples, which would also help to evaluate the generalizability of present findings beyond university students.

Conclusion

The present study is the first to examine relations between implicit theories, goals, and multivariate profiles of self-regulation in the domain of emotion. Results corroborate previous research indicating that individuals combine multiple cognitive emotion regulation strategies to cope with distress in unique ways. The results also complement existing literature by suggesting specific types of emotion-related beliefs and goals that may increase the likelihood of engaging in particular emotion regulation profiles. In line with an implicit theory framework, findings highlight the importance of conceptualizing peoples' habitual responses to emotional distress as part of the broader meaning system from which they may arise. Whereas a meaning system that encourages an emphasis on the immutability of emotion and preoccupations with the avoidance of emotional difficulty may lead to less adaptive responses to emotional distress, a meaning system that emphasizes the controllable nature of emotion and goals of learning from emotional experiences may encourage more adaptive responses. Through these distinct response tendencies emotion controllability beliefs and goals for emotion regulation may have important consequences for psychological functioning.

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Table 1

Descriptive statistics and correlations among emotion controllability beliefs, goals for emotion regulation, and the cognitive emotion regulation strategies (n = 481)

	1	2	3	4	5	6	7	8
1. Acceptance	1							
2. Planning	.26**	1						
3. Reappraisal	.37**	.54**	1					
4. Perspective	.27**	.35**	.36**	1				
5. Refocusing	.11†	.13*	.13*	.29**	1			
6. Rumination	.16**	.16**	.18**	-.02	-.08	1		
7. Catastrophizing	-.12*	-.08	-.22**	-.21**	-.11†	.42**	1	
8. Self-blame	.00	.06	-.04	.01	-.07	.24**	.45**	1
9. Other-blame	-.08	.06	-.03	.03	.14*	.13*	.31**	-.12*
10. Dysregulation	-.18**	-.20**	-.31**	-.13*	-.11†	.19**	.58**	.48**
11. Perceived stress	-.14*	-.22**	-.31**	-.21**	-.17**	.14*	.46**	.36**
12. Well-being	.18**	.34**	.40**	.25**	.21**	-.10†	-.41**	-.31**
13. Implicit theory [a]	.08	.16**	.16**	.09†	.07	-.12*	-.15*	-.07
14. Learning goal	.18**	.27**	.46**	.10†	.00	.35**	-.05	-.01
15. Avoidance goal	-.08	-.08	-.15*	-.09†	-.10†	.30**	.43**	.44**
16. Approach goal	.06	.16**	.11†	.11†	.11†	.10†	.12*	.22**
M	7.59	6.89	7.22	6.21	4.34	7.24	5.25	6.31
SD	1.90	1.94	2.13	2.15	1.91	1.95	2.24	2.07
Range	2-10	2-10	2-10	2-10	2-10	2-10	2-10	2-10

	9	10	11	12	13	14	15	16

9. Other-blame	1							
10. Dysregulation	.13*	1						
11. Perceived stress	.06	.59**	1					
12. Well-being	-.06	-.53**	-.66**	1				
13. Implicit theory	.05	.23**	.22**	-.19**	1			
14. Learning goal	-.02	-.20**	-.13*	.19**	.07	1		
15. Avoidance goal	.13*	.60**	.44**	-.36**	-.12*	.09†	1	
16. Approach goal	.08	.14*	.06	-.01	.14*	.25**	.37**	1
M	3.85	46.46	7.53	40.74	3.41	4.85	4.15	4.21
SD	1.48	12.29	3.28	13.67	0.80	1.24	1.41	1.56
Range	2-10	19-84	0-16	6-70	1.25-5	1-7	1-7	1-7

Note. Pearson correlations are reported for bivariate associations among the continuous study variables.

[a] Higher implicit theories denote higher emotion controllability beliefs, whereas lower implicit theories denote lower emotion controllability beliefs.

** $p < .001$. * $p < .01$. † $p < .05$.

Table 2

Means, standard deviations, ANOVAs, and pairwise comparisons examining group differences between adaptive, maladaptive, and low regulators

Variable	Cluster 1: Adaptive regulators *n* = 182 *M (SD)*	Cluster 2: Maladaptive regulators *n* = 132 *M (SD)*	Cluster 3: Low regulators *n* = 167 *M (SD)*	df	*F*	η_p^2
Acceptance†	8.64^{A} (1.42)	7.15^{B} (1.98)	6.79^{B} (1.76)	2, 394	54.59**	.19
Planning†	8.04^{A} (1.36)	6.62^{B} (2.06)	5.85^{C} (1.72)	2, 373	69.61**	.24
Reappraisal†	8.76^{A} (1.31)	6.65^{B} (1.96)	5.98^{C} (1.94)	2, 390	115.39**	.34
Refocusing†	5.11^{A} (2.10)	3.92^{B} (1.69)	3.84^{B} (1.56)	2, 458	27.05**	.10
Perspective†	7.83^{A} (1.67)	5.30^{B} (1.94)	5.15^{B} (1.62)	2, 419	124.93**	.35
Self-blame	5.99^{A} (1.88)	7.83^{B} (1.81)	5.45^{C} (1.82)	2, 478	65.71**	.22
Other-blame†	3.68^{A} (1.32)	4.43^{B} (1.77)	3.57^{A} (1.26)	2, 369	14.21**	.06
Catastrophizing	4.08^{A} (1.46)	7.93^{B} (1.53)	4.41^{A} (1.53)	2, 478	291.12**	.55
Rumination†	7.31^{A} (1.74)	8.71^{B} (1.42)	6.01^{C} (1.69)	2, 477	103.25**	.29
Stress	6.16^{A} (2.74)	9.70^{B} (3.23)	7.31^{C} (2.96)	2, 478	55.19**	.19
Well-being†	47.05^{A} (11.21)	32.32^{B} (13.19)	40.54^{C} (12.88)	2, 433	53.12**	.19
Dysregulation	40.44^{A} (9.28)	56.20^{B} (10.97)	45.33^{C} (11.44)	2, 478	86.99**	.27
Implicit theory	3.60^{A} (0.78)	3.21^{B} (0.82)	3.36^{B} (0.75)	2, 478	9.92**	.04
Learning goal†	5.25^{A} (1.16)	4.85^{B} (1.19)	4.43^{C} (1.23)	2, 478	20.45**	.08
Avoidance goal	3.72^{A} (1.28)	5.08^{B} (1.31)	3.88^{A} (1.28)	2, 478	48.19**	.17

Approach goal†	4.31^{A} (1.62)	4.47^{A} (1.58)	3.90^{B} (1.41)	2, 451	5.62*	.02
Age	20.01 (1.37)	20.23 (1.30)	20.38 (1.64)	2, 478	2.82	

† Variable violated the assumption of homogeneity of variance and, as such, Brown-Forsythe *F* statistic and Games-Howell post-hoc tests are reported. For all other variables, the homogeneity of variance assumption was met and conventional *F* tests with Bonferroni-corrected pairwise comparisons are reported.

** Main effect is significant at $p < .001$. * Main effect is significant at $p = .004$. Means within a row that are superscripted with different letters (i.e., A, B, C) were significantly different at $p < .05$.

Table 3

Cross-validated classification matrix predicting multivariate profile of emotion regulation from implicit theories of emotion, and learning, performance-avoidance, and performance-approach goals for emotion regulation

		Predicted group membership			
	Group membership	Mastery regulators	Helpless regulators	Low regulators	Total
Count	Adaptive regulators	115	26	41	182
	Maladaptive regulators	30	80	22	132
	Low regulators	59	38	70	167
Percent	Adaptive regulators	63.2	14.3	22.5	100
	Maladaptive regulators	22.7	60.6	16.7	100
	Low regulators	35.3	22.8	41.9	100

Note. 55.1% of cross-validated grouped cases were correctly classified.

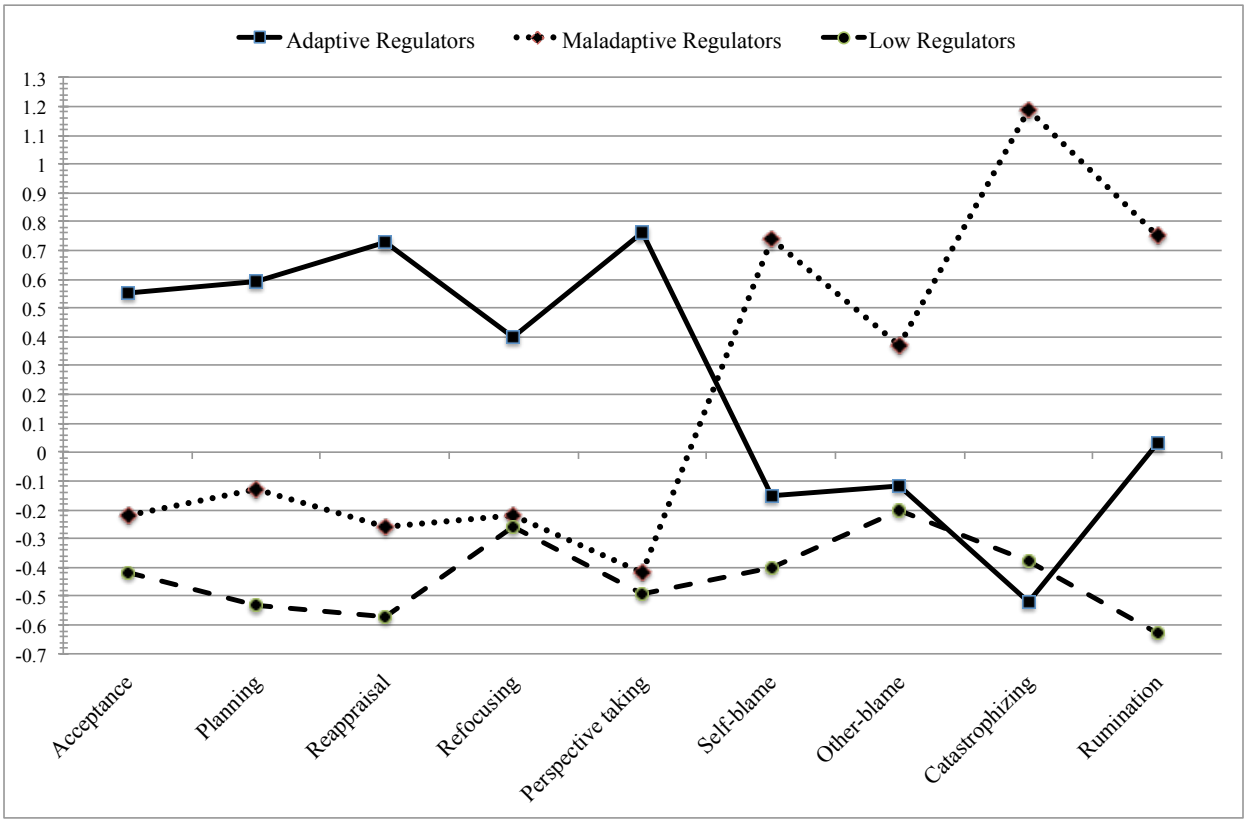

Figure 1. Cluster centers representing the mean z-scores for the nine cognitive emotion regulation strategies for each multivariate profile of emotion regulation

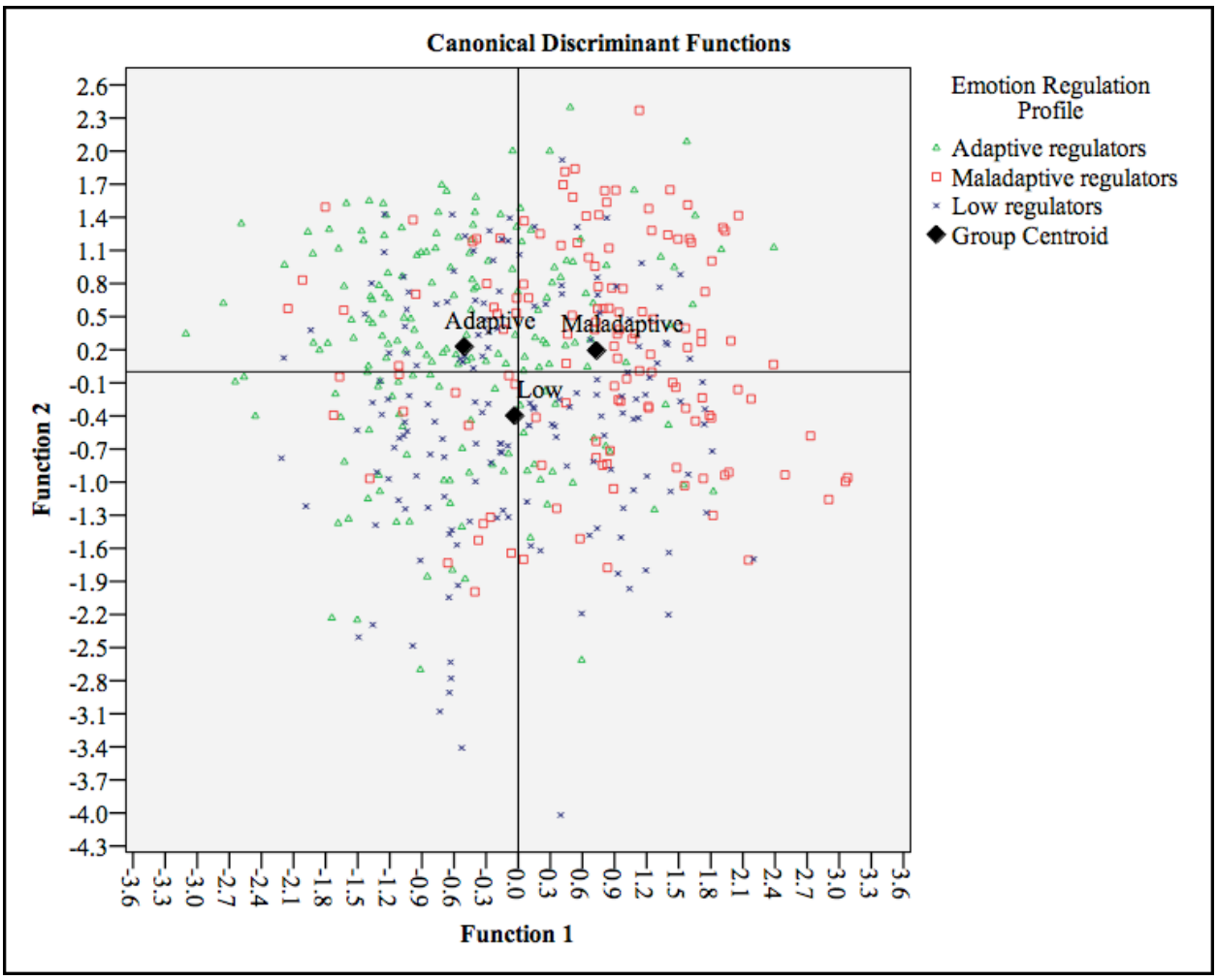

Figure 2. Combined-group plot illustrating the separation of group centroids among the multivariate emotion regulation profiles by each discriminant function. Group centroids for Function 1: adaptive regulators = -.50, maladaptive regulators = .73, low regulators = -.03. Group centroids for Function 2: adaptive regulators = .23, maladaptive regulators = .19, low regulators = -.40.

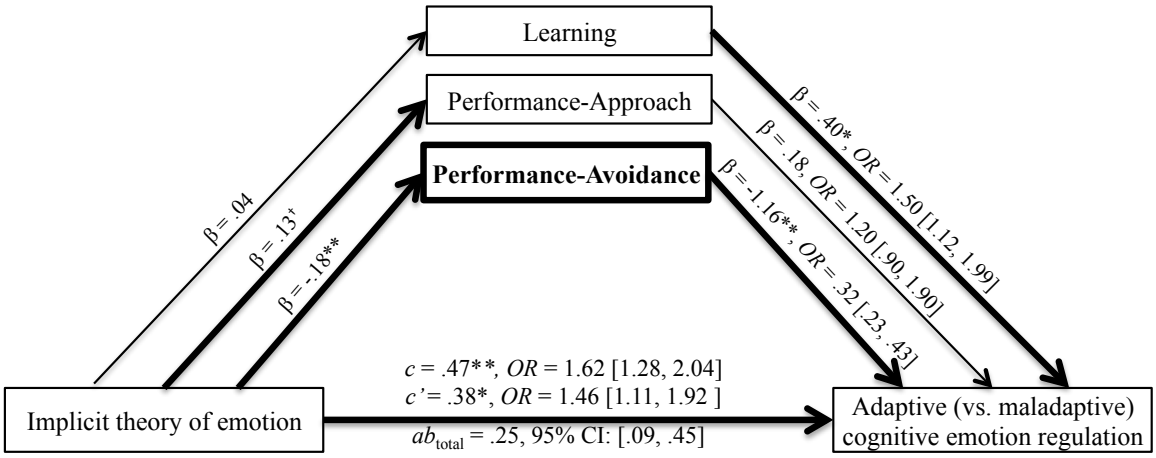

Figure 3. Parallel mediation model illustrating the total (*c*), direct (*c'*), and total indirect effect (ab_{total}) of implicit theory of emotion on adaptive (vs. maladaptive) cognitive emotion regulation[4]. All point estimates are standardized regression coefficients. Odds ratios (*OR*) and associated 95% CI's are reported for the logistic regression analyses. Bolded lines indicate significant path coefficients, and bolded variables indicate significant specific indirect effects for the designated mediator, as evidenced by a 95% CI excluding zero for the specific indirect effect. ** $p < .001$. * $p < .01$. † $p < .05$.

[4] Maladaptive regulators were coded as 0 and adaptive regulators were coded as 1. Note that when using a dichotomous outcome variable, as in the present model, the indirect and total effects of the independent variable on the outcome variable are differently scaled. As such, the total effect cannot be calculated from the sum of the direct and indirect effects, nor does the difference between the total and direct effect produce the indirect effect (MacKinnon & Dwyer, 1993).

Bridging Section

The second objective of this dissertation was to investigate relations between implicit theories of emotion and learning and performance goals for emotion regulation, and their roles in predicting adaptive versus maladaptive patterns of emotional responding. Manuscript 2 reported that lower emotion controllability beliefs were associated with higher performance-avoidance goals for emotion regulation and a more maladaptive pattern of emotion regulation, whereas higher emotion controllability beliefs were associated with higher performance-approach goals for emotion regulation and a more adaptive pattern of emotion regulation. Moreover, mediation analyses supported the hypothesis that the effects of implicit theories of emotion on peoples' profiles of emotion regulation may be partially explained by performance-avoidance goals for emotion regulation. Taken together, the results of Manuscripts 1 and 2 indicate that implicit theories of emotion and goals for emotion regulation are associated with individual differences in emotional responding that have potential implications for psychological functioning. Whereas higher emotion controllability beliefs and greater learning goals for emotion regulation appear to be linked to more adaptive emotion regulation tendencies, lower emotion controllability beliefs and greater performance-avoidance goals for emotion regulation appear to be linked to more maladaptive emotion regulation tendencies. As such, a final objective of this dissertation was to further our understanding of factors that may contribute to these emotion-related beliefs and goals, to gain insight on the avenues through which these constructs may be changed. Addressing this objective, Manuscript 3 draws from research supporting the role of parental feedback in the development of implicit theories in other self-regulation domains to suggest that parental feedback about negative emotion during childhood may be associated with different emotion-related implicit theories and goals in young adulthood.

CHAPTER 4

Manuscript 3

Retrospective Reports of Parental Emotion Coaching and Dismissing During Childhood: Relations to Implicit Theories of Emotion and Goals for Emotion Regulation in Young Adulthood

Samira Moumne and Nancy L. Heath

Department of Educational and Counselling Psychology

McGill University

Montreal, QC

Abstract

Despite support for the relationship between implicit theories of emotion and goals for emotion regulation with various indices of mental health, still little is known about the possible origin of these emotion-related beliefs and goals. Drawing from research on the implicit theory framework as it has been applied to other domains of self-regulation, this study tested the hypothesis that young adults' retrospective report of their parents' responses to their negative emotions during childhood would significantly correlate with their emotion-related implicit theories and goals in young adulthood. Correlation analyses indicated that higher parental (i.e., maternal and paternal) emotion coaching was associated with greater learning goals for emotion regulation, whereas higher parental emotion dismissing was associated with greater performance goals for emotion regulation. Moreover, a series of mediation analyses indicated that learning and performance goals for emotion regulation at least partially explained relations between perceived parental emotion coaching and dismissing during childhood with emotion regulation difficulties in young adulthood. Findings are consistent with the notion that perceived emotion-related feedback from important socialization figures during childhood is related to the way in which a person comes to approach, and subsequently regulate, their emotions in young adulthood.

Keywords: implicit theories, goals, emotion regulation, emotion socialization

Retrospective Reports of Parental Emotion Coaching and Dismissing During Childhood: Relations to Implicit Theories of Emotion and Goals for Emotion Regulation in Young Adulthood

An implicit theory perspective of self-regulation stipulates that adaptive and maladaptive patterns of responding across key domains of human functioning converge on peoples' core beliefs - or implicit theories - regarding the controllability of their important self-attributes, and the kinds of goals they are oriented to pursue in the context of these beliefs (Dweck & Leggett, 1988). Applying the implicit theory perspective to the domain of emotion, several studies have demonstrated that people differ considerably in their beliefs about the controllability of emotion and goals for emotion regulation, with significant consequences for how they regulate their emotions and their psychological functioning (e.g., Rusk, Tamir, & Rothbaum, 2011; Tamir, John, Srivastava, & Gross, 2007). An important question that remains, however, is the origin of these beliefs and goals. Addressing this question, the present study draws from research regarding the developmental correlates of implicit theories in other domains of self-regulation (i.e., implicit theories of intelligence) to investigate the potential origins of implicit theories of emotion and goals for emotion regulation.

The Implicit Theory Framework

The notion that different beliefs orient people to think, feel, and behave differently in identical circumstances has formed the foundation of many cognitive theories of mental health (Beck, 1976; Ellis, 1962; Lazarus & Folkman, 1984). One type of belief that has gained considerable attention in the self-regulation literature are peoples fundamental assumptions, or *implicit theories*, about the extent to which personal attributes are amenable versus immutable to

attempts at change and control (Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013; Dweck & Leggett, 1988).

An implicit theory framework states that, for any important self-attribute (e.g., intelligence, personality), some people ascribe to an entity theory, believing that their traits or abilities are fundamentally immutable to change or control, whereas others ascribe to an incremental theory, believing that the same trait or ability is fundamentally amenable to change or control through effort (Dweck & Leggett, 1988). These beliefs set up the kind of goals one adopts when approaching implicit theory related self-regulation tasks, with far-reaching consequences for the adaptiveness (vs. maladaptiveness) of their self-regulation (Dweck & Leggett, 1988). On one hand, when a person views an important self-attribute (e.g., intelligence) as amenable to change or control through effort, they are more likely to report learning goals centered on growing and developing these self-attributes (Dweck & Leggett, 1988). Conversely, when a person views an important self-attribute as relatively immutable to change or control, they are more likely to report performance goals centered on demonstrating their possession of that self-attribute, or avoiding potential displays of incompetence (Dweck & Leggett, 1988). In turn, higher controllability beliefs and higher learning goals are associated with more adaptive, mastery-oriented self-regulatory attempts characterized by effort escalation and strategy change; whereas lower controllability beliefs and higher performance goals are associated with more maladaptive, helpless-oriented self-regulatory attempts characterized by a withdrawal of effort and avoidance (Dweck & Leggett, 1988).

Implicit Theories of Emotion

Decades of empirical work on the implicit theory framework have supported the relationship between implicit theories, learning and performance goals, and self-regulation across

a variety of domains (e.g., academia, athletics, health psychology; for a meta-analysis, see Burnette et al., 2013). In the domain of emotion specifically, a growing number of studies have similarly suggested that, just as individuals hold implicit theories about a variety of human traits and abilities, they also hold implicit theories about more transient attributes, like emotion (De Castella et al., 2013; Schroder, Dawood, Yalch, Donnellan, & Moser, 2015; Tamir et al., 2007). Whereas some people believe more strongly that emotions are immutable to attempts at change or control (called an entity emotion theory), others believe emotions to be relatively amenable to change and control through effort (called an incremental emotion theory; Tamir et al., 2007).

Consistent with the implicit theory framework, research on implicit theories of emotion has indicated that lower emotion controllability beliefs are associated with poorer emotion-related self-regulatory outcomes. For example, longitudinal studies investigating the role of implicit theories of emotion in the transition to college have found that lower emotion controllability beliefs are associated with fewer positive and more negative emotion over time, as well as poorer socioemotional functioning as indicated by greater feelings of isolation, loneliness, and depression (Tamir et al., 2007). Cross-sectional studies have further indicated that young adults with lower emotion controllability beliefs tend to also view their own emotions as less amenable to control and report greater psychological symptoms of depression, anxiety, poorer well-being, and higher stress (De Castella et al., 2013; Schroder et al., 2015). To explain the relationship between implicit theories of emotion and psychological health, several scholars have proposed the potential mediating role of regulation (e.g., Tamir et al., 2007; Tamir & Mauss, 2011). Lower emotion controllability beliefs may orient individuals to engage in more maladaptive, avoidance-based emotion regulation strategies, whereas higher emotion

controllability beliefs foster more active emotion regulatory attempts (De Castella, Platow, Tamir, & Gross, 2017; Kappes & Schikowski, 2013; Kneeland, Dovidio, Joorman, & Clark, 2016; Tamir et al., 2007). By engaging in more maladaptive strategies to regulate emotion, individuals with lower emotion controllability beliefs may then be less effective at regulating their emotions over time and experience poorer emotional functioning and more psychological symptoms (Berking & Whitley, 2014). Conversely, by engaging in more active emotion regulatory attempts, individuals with higher emotion controllability beliefs may be more effective at regulating their emotions, and ultimately experience more favourable emotional and psychological functioning (Tamir & Mauss, 2011).

Goals for Emotion Regulation

As previously indicated, an important mechanism through which implicit theories may impact self-regulation is by orienting people to pursue different goals. In line with these notions, learning and performance goals for emotion regulation have been associated with individual differences in the use of several emotion regulation strategies and psychological health. Higher learning goals for emotion regulation, focused on understanding and learning from one's emotional experiences have been linked to greater self-reflection, higher emotion regulation self-efficacy beliefs, and greater use of cognitive reappraisal (Rusk et al., 2011). On the other hand, higher performance goals for emotion regulation focused on documenting and proving one's emotional competence in relation to others (performance-approach goal) and avoiding the perception of a lack of emotional competence (performance-avoidance goal) have been associated with higher depressive symptoms and greater use of maladaptive emotion regulation strategies such as rumination and thought suppression (Rusk et al., 2011). Despite the potential role of implicit theories of emotion and goals for emotion regulation in adaptive versus

maladaptive emotional functioning, no research has addressed potential origins of these constructs, and consequently, the avenues through which more adaptive emotion-related beliefs and goals may be promoted.

The Development of Implicit Theories: Insight from Other Self-Regulation Domains

Theory and research on the development of implicit theories in other domains have suggested that parental socialization practices during childhood may play an important role in determining the implicit theory that a child internalizes about their self-attributes (Dweck, Chiu, & Hong, 1995; Dweck & Grant, 2008; Dweck & Master, 2009; Haimovitz & Dweck, 2016). Failure feedback that is performance-oriented and conveys a judgment of the child based on their behaviour is likely to be internalized by the child as an irrefutable ruling of some permanent entity within his or her self (i.e., as an indication of their innate ability, adequacy, or worth; Kamins & Dweck, 1999). Supporting this notion, studies have demonstrated that when a child perceives their parents' responses as conveying a judgment of their fundamental traits and abilities (e.g., their goodness/badness, intelligence), they are more likely to display helpless responses to subsequent failure and to endorse a belief that their own traits and abilities cannot be changed (e.g., Burhans & Dweck, 1995; Heyman, Dweck, & Cain, 1992). On the other hand, learning-oriented failure feedback that offers new strategies for addressing the task at hand promotes an incremental theory, by suggesting to the child that their current deficiencies can be changed and improved with effort (Rattan, Good, & Dweck, 2012). Indeed, studies have supported that when a child perceives their parents responses as learning-oriented (e.g., focused on increasing effort or identifying new strategies), they are more likely to display mastery responses to subsequent failure and to endorse a belief that their own traits and abilities can be improved with effort (e.g., Heyman et al., 1992). Moreover, the extent to which parents engage

in performance or ability-focused feedback versus learning-oriented feedback may be determined by their own implicit theories in relevant self-regulation domains (Haimovitz & Dweck, 2016).

Parent Emotion Socialization

Drawing from theory and research on the development of implicit theories in other self-regulation domains, one possibility is that implicit theories of emotion and goals for emotion regulation are similarly developed during childhood in response to parental feedback about emotion. Supporting this notion, emotion researchers have found that the constellation of beliefs and attitudes parents hold about emotion (i.e., their *meta-emotion philosophies*) may translate into tangible emotion socialization practices that are perceived by their children, and in turn, shape their children's own emotional responding during their youth, and potentially into young adulthood (e.g., Guo, Mrug, & Knight, 2017; Leerkes, Supple, Su, & Cavanaugh, 2015; Lugo-Candelas, Harvey, Breaux, & Herbert, 2016; Magai, Consedine, Gillespie, O'Neal, & Vilker, 2004).

To date, much of the research on meta-emotion philosophies has stemmed from the work of Gottman and colleagues which distinguishes two main parenting styles that emerge from how parents view the importance and validity of emotional expression, as well as how they perceive their role in assisting their child's emotion regulation (Gottman, Katz, & Hooven, 1997). Emotion coaching parents operate from a meta-emotion philosophy that views negative emotions as valuable opportunities for self-exploration and strengthening the parent-child relationship. Based in this belief, emotion coaching parents are more likely to engage in constructive problem-solving strategies when responding to child distress, that in turn, have been linked to healthier developmental outcomes, including better emotion regulation skills, and more adaptive psychological and social functioning (Eisenberg, Cumberland & Spinrad, 1998; Guo et al., 2017;

Sheffield-Morris, Silk, Steinberg, Myers, & Robinson, 2007; Wilson, Petaja, Yun, King, Berg, Kremmel, & Cook, 2014). Conversely, emotion dismissing parents operate from a meta-emotion philosophy that views negative emotions as unhelpful entities to be quickly eliminated (Gottman et al., 1996). Based in this belief, emotion dismissing parents tend to be uncomfortable with emotional expression and use more invalidating, critical, and punitive strategies when responding to child distress, that in turn, have been linked to poorer emotional competence in youth and young adulthood (Dunsmore, Booker, & Ollendick, 2013; O'Neal & Magai, 2005).

Although links between parental emotion socialization styles and emotional competence have been well-supported (for reviews, see Denham, Bassett, & Wyatt, 2007; Katz, Maliken, & Stettler, 2012; Thompson & Meyer, 2007), relations between young adults' retrospective reports of parental emotion socialization practices with their own emotion-related beliefs and goals in young adulthood have yet to be examined. Moreover, little is known about potential mediators of the relationship between parent emotion socialization styles with emotion regulation in young adulthood.

The Current Study

The goal of the present study was to examine factors that may contribute to the development of implicit theories of emotion and goals for emotion regulation in young adulthood. Specifically, the present study tested the hypothesis that young adults' emotion-related implicit theories and goals would significantly correlate with what they remember as their parents' emotion socialization style during childhood. Drawing from research on the development of implicit theories in other domains, it was hypothesized that higher retrospective reports of parental emotion coaching during childhood would be associated with higher emotion controllability beliefs and greater learning goals for emotion regulation in young adulthood,

whereas higher retrospective reports of parental emotion dismissing would be associated with lower emotion controllability beliefs and higher performance goals for emotion regulation in young adulthood. Moreover, it was anticipated that implicit theories of emotion and goals for emotion regulation in young adulthood mediate the relationship between reports of childhood parental emotion socialization styles (emotion coaching and emotion dismissing) with emotion regulation in young adulthood.

Methods

Participants

Participants were 483 students recruited from a large urban Canadian university who completed an online survey about university students dealing with difficult emotions. Students were predominantly female (female = 391, male = 92), ranged from 18 to 25 years of age (M_{age} = 20.20 years, SD_{age} = 1.46), and were in their first (34.8%) or second (32.9%) year of undergraduate studies in the faculty of arts (39.07%) or science (32.45%). Self-reported ethnicities were as follows: 59.01% White, 15.53% East Asian, 8.07% mixed, 3.73% Southeast Asian, 3.52% South Asian, 2.48% Arab, 1.66% Latin American, 1.24% Black, 0.21% Aboriginal, and 3.52% other (1.04% preferred not to answer).

Procedure

Potential participants were contacted by email using a database of university students who had previously consented to be contacted about studies related to stress and coping, as well as through advertisements posted on student webpages. Compensation included a raffle ticket for one of ten $30 gift certificates and upon completing the study all participants were offered feedback about their current stress and a list of mental health resources. A total of 573 participants submitted their survey responses, but were only considered for analyses if they

correctly responded to the three attention items dispersed throughout the survey, indicated that they were currently registered in university, and were between 18 and 25 years old.

Measures

Implicit theory of emotion (emotion controllability beliefs). Implicit theories of emotion were assessed using the four-item Implicit Theories of Emotion Scale (ITES; Tamir et al., 2007). This scale includes two items reflecting an incremental emotion theory (e.g., "if they want to, people can change the emotions that they have") and two items reflecting an entity emotion theory (e.g., "the truth is, people have very little control over their emotions"). Items were rated on a five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). Entity items were reverse-scored and an average was calculated such that higher scores reflected higher emotion controllability beliefs, and lower scores reflected lower emotion controllability beliefs (range: 1-5). Previous studies have found the ITES to have acceptable internal consistency (α = .77 – .78; De Castella et al., 2013; Tamir et al., 2007). Similarly, internal consistency for the ITES was acceptable in the current study (α = .75).

Learning and performance goals for emotion regulation. Goals for emotion regulation were measured using the adapted version of the Achievement Goal Scale (AGS; Elliot & Church, 1997) developed by Rusk et al. (2011). Five items assessed learning goals (e.g., "I want to learn as much as possible from my emotions"), four items assessed performance-approach goals (e.g., "it is important to me to handle my emotions better than other people do"), and four items assessed performance-avoidance goals (e.g., "I just want to avoid being unable to change how I feel"). Items were rated on a seven-point Likert scale (1 = *not at all true of me*, 7 = *very true of me*), and ratings were averaged for each subscale (possible ranges: 1-7). Rusk et al. (2011) found this adapted version of the AGS to have acceptable internal consistency for

learning (α = .90), performance-approach goals (α = .93), and performance-avoidance goals (α = .78). Internal consistencies for the learning, performance-approach, and performance-avoidance goal scales were also acceptable in the present sample (α's = .85, .89, .76, respectively).

Emotion regulation. Emotion regulation was assessed using the Difficulties in Emotion Regulation Scale Short Form (DERS-SF; Kaufman et al., 2015). This 18-item measure adapted from the original 36-item DERS (Gratz & Roemer, 2004) assesses self-reported deficits in six dimensions of emotion regulation: emotional awareness, clarity, and acceptance, one's beliefs in their ability to effectively modulate the temporal features of negative emotion, and the abilities to control behavioural impulses and maintain goal-directed behavior when experiencing negative emotion. Participants rated how often each item is true for them on a five-point Likert scale (1 = *never*, 5 = *almost always*) and ratings were summed such that higher values reflected greater overall emotion regulation difficulties (possible range: 18 – 90). Consistent with Kaufman et al.'s (2015) initial validation study, internal reliability for the total DERS score was excellent (α = .90) in the present study.

Parent emotion socialization (retrospective report). To assess participants' retrospective reports of their parents' emotion coaching and dismissing, participants completed an adapted version of the 14-item Maternal Emotional Styles Questionnaire (MESQ; Lagacé-Séguin & Coplan, 2005). Whereas the original MESQ asks mothers to self-report about how they typically view and respond to their child's displays of sadness, anger, and fear, the adapted versions of the MESQ used in the present study asked participants how they personally recalled their mothers' and fathers' responses to their own emotions in childhood. Moreover, items were reworded to tap into participants' views of how each parent responded to their negative emotions in general, as opposed to their display of specific emotions (e.g., sadness, anger, fear). For

example, the item ‘‘*When my child is angry, it's time to solve a problem*” was reworded as “*When I felt negative emotions, my mother believed it was time to solve a problem*” for the maternal version of the emotion socialization questionnaire, and “*When I felt negative emotions, my father believed it was time to solve a problem*” for the paternal version of the emotion socialization questionnaire. Similarly, the item “*When my child gets angry, my goal is to get him/her to stop*” was reworded as “*When I felt negative emotions, my mother's goal was to get me to stop*” for the maternal version of the emotion socialization questionnaire, and “*When I felt negative emotions, my father's goal was to get me to stop*” for the paternal version of the emotion socialization questionnaire. Like the original MESQ, seven items assessed emotion coaching and seven items assessed emotion dismissing for each parent, and responses were rated on five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). Prior to data collection, both measures were informally piloted with a small sample of undergraduate students.

The instructions and original 14-item pools for the maternal and paternal emotion socialization measures are provided in Appendices A and B, respectively. A preliminary analysis of the correlation matrix for each measure revealed that items 1 (“*When I felt negative emotions, my mother/father believed it was time to problem solve*”) and 14 (“*When I felt negative emotions, my mother/father believed it was time to solve a problem*”) were highly correlated in both the maternal (r = .78) and paternal (r = .81) versions of the MESQ. Due to the similar wording of these items, item 14 was removed from each scale. Both questionnaires were then subject to principal axis factoring to explore their underlying factor structures (Yong & Pearce, 2013). To facilitate interpretation, factors were rotated using the oblique (promax) rotation method and a cut-off score of .32 for statistically meaningful rotated factor loadings was applied (Tabachnick & Fidell, 2013; Yong & Pearce, 2013). Items with significant cross-loadings (i.e., loadings of

≥.32 on two or more factors, or items with < .15 difference between their primary and secondary factor loadings) were also removed (Costello & Osborne, 2005; Worthington & Whittaker, 2006). The number of factors to be retained was determined using a combination of the scree test and Kaiser criterion (i.e., Eigenvalues of greater than 1; Kaiser, 1960). Factor loadings are interpreted using the pattern matrix, which represents the regression weight by which a given factor predicts each item.

Based on these criteria, two factors (Eigenvalues = 3.91 and 1.86) were retained after an initial principal axis factoring of the maternal version of the MESQ (henceforth referred to as the Retrospective Maternal Emotion Socialization Questionnaire; R-MESQ). Items 3 ("*When I felt negative emotions, my mother believed she was expected to fix the world and make it perfect*"; factor loadings = .23 and .33) and 10 ("*My mother tried to change my negative moods into cheerful ones*"; factor loadings = .53 and .37) were removed due to significant cross-loadings. All other item loadings on the two factors were theoretically consistent with the emotion coaching and dismissing subscales of the original MESQ with the exception of item 7 ("*My mother helped me get over negative emotions quickly so I could move onto other things*"; loading on emotion coaching and dismissing scales = .67 and .17, respectively). As such, item 7 was also removed from the R-MESQ, and a final principal axis factor analysis with oblique rotation was performed on the remaining ten items. Results again supported a two-factor (emotion dismissing and emotion coaching) solution, explaining a cumulative variance of 46.01% (Eigenvalues = 2.92 and 68). Appendix C illustrates the final pattern matrix, as well as the Eigenvalues and percentage of variance explained by each factor for the R-MESQ.

With respect to the paternal version of the MESQ (henceforth referred to as the Retrospective Paternal Emotion Socialization Questionnaire; R-PESQ), results of an initial

principal axis factoring similarly indicated a two-factor solution (Eigenvalues = 4.33, 1.91). Items 3 ("*When I felt negative emotions, my father believed he was expected to fix the world and make it perfect*"; factor loadings = .31 and .32), 10 ("*My father tried to change my negative moods into cheerful ones*"; factor loadings = .41 and .49), and 7 ("*My father helped me get over negative emotions quickly so I could move onto other things*"; factor loadings = .55 and .32) were removed due to significant cross-loadings, and a final principal axis factor analysis with oblique rotation was performed on the remaining ten items. Results again supported a two-factor (emotion dismissing and emotion coaching) solution (Eigenvalues = 3.35, 1.65), explaining a cumulative variance of 50.05%. Appendix D illustrates the pattern matrix, as well as the Eigenvalues and percentage of variance explained by each factor for the R-PESQ.

Factor-based subscale scores for maternal coaching, maternal dismissing, paternal coaching, and paternal dismissing were summed separately. Possible ranges for maternal/paternal emotion coaching subscales and for maternal/paternal emotion dismissing subscales were 6-30 and 4-20, respectively. Internal consistency for the individual subscales ranged from acceptable to good (maternal dismissing = .72, maternal coaching = .84, paternal dismissing = .71, paternal coaching = .87).

Results

Handling Missing Data

Of the 483 participants, 22 were excluded due to non-completion of at least one of the study measures leaving a final analyzed sample of 461 (81% female; M_{Age} = 20.21, SD_{Age} = 1.45). A subsequent missing value analysis revealed that item-level missing data were negligible (< 1%), and case-level missing data ranged from 1.2 to 4.7%. Data were missing completely at random as evidenced by a non-significant Little's MCAR test, and so missing values were imputed using the expectation-maximization method in SPSS (Tabachnick & Fidell, 2013).

Descriptive Statistics

Means, standard deviations, and correlations among the study variables are reported in Table 1. Note that correlations between implicit theories of emotion and goals for emotion regulation have been reported in the same sample of young adults in a previous publication (Manuscript 2 of this dissertation). With respect to the emotion socialization variables, higher maternal and paternal coaching were associated with higher learning goals for emotion regulation, whereas higher maternal and paternal dismissing were associated with higher performance (approach and avoidance) goals for emotion regulation. Parental emotion coaching was unrelated to performance goals for emotion regulation, and parental emotion dismissing was unrelated to learning goals for emotion regulation. Moreover, neither maternal nor paternal emotion coaching nor dismissing significantly correlated with implicit theories of emotion. Finally, only maternal (not paternal) emotion socialization significantly correlated with emotion regulation difficulties in young adulthood, such that lower maternal emotion coaching and higher maternal emotion dismissing were associated with greater difficulties regulating emotion.

Identifying Potential Covariates

Potential covariates (age, race, and gender) were explored using ANOVA and correlation analyses. With respect to gender, significant group differences were found for performance-avoidance and performance-approach goals for emotion regulation, such that males reported significantly lower performance-avoidance goals, $F(1, 459) = 4.30$, $p = .04$ ($M_{\text{Male}} = 3.89$, $M_{\text{Female}} = 4.24$), and significantly higher performance-approach goals, $F(1, 459) = 5.24$, $p = .02$ ($M_{\text{Male}} = 4.56$, $M_{\text{Female}} = 4.14$), compared to females. A significant correlation was found between age and paternal emotion coaching, such that older participants reported significantly lower paternal

emotion coaching during childhood, r = -.11, p = .01. Finally, results of a one-way ANOVA revealed significant group differences with respect to race on the maternal emotion coaching variable, $F(9, 450) = 2.73$, p = .004. A series of follow-up t-tests indicated that participants who identified as East Asian (M = 18.71, SD = 5.14) reported significantly lower maternal emotion coaching compared to participants who identified as White (M = 21.44, SD = 4.76).

Mediation Analyses

Six mediation models were conducted to investigate potential mediators in the relationship between parental emotion coaching and dismissing during childhood with emotion regulation in young adulthood. Models 1 and 2 investigated the mediating effect of learning goals for emotion regulation in the relationship between maternal and paternal emotion coaching with emotion regulation difficulties in young adulthood, respectively. Models 3 and 4 investigated the mediating effects of performance-approach goals for emotion regulation in the relationship between maternal and paternal emotion dismissing during childhood with emotion regulation difficulties in young adulthood, respectively. Models 5 and 6 investigated the mediating effects of performance-avoidance goals for emotion regulation in the relationship between maternal and paternal emotion dismissing during childhood with emotion regulation difficulties in young adulthood, respectively. Implicit theory of emotion was not investigated as a potential mediator given its non-significant correlations with all of the parental emotion socialization variables. As none of the potential covariates (age, gender, race) were significantly associated with the dependent variable (emotion regulation difficulties), no covariates were included in the mediation models.

All mediation analyses were conducted using the SPSS add-on, PROCESS (Hayes, 2012). A nonparametric bootstrap resampling procedure with 5000 resamples was used to

estimate the magnitude of the total (c), direct (c'), and indirect effects (ab), with results considered significant at the $\alpha = .05$ level if the 95% bias-corrected confidence interval excluded zero (Preacher & Hayes, 2008). Note that although direct effects were estimated, mediation effects may still be observed in the absence of a significant direct effect (Hayes, 2013). Completely standardized indirect effects are reported as measures of effect size (.01 = small, .09 = medium, .25 = large; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Preacher & Kelley, 2011). Diagrams depicting the path coefficients, as well as the total and direct effects for each model are provided in Figure 1.

Mediating effects of learning goals for emotion regulation on the relationship between emotion coaching and emotion regulation difficulties. Results indicated that the indirect effects of maternal emotion coaching on emotion regulation difficulties via learning goals for emotion regulation was significant, with a 95% confidence interval excluding zero (ab = -.02 [-.05, -.004]). Although the total effect of paternal emotion coaching on emotion regulation difficulties was non-significant ($\beta = -.06$, $p = .173$), the indirect effect of paternal emotion coaching on emotion regulation difficulties through learning goals for emotion regulation was significant (ab = -.02 [-.05, -.01]), indicating that mediation had also occurred in this model. Regression coefficients for these models are reported in Figure 1 (Models 1 and 2).

Mediating effects of performance goals for emotion regulation on the relationship between emotion dismissing and emotion regulation difficulties. Significant indirect effects were found for the mediation models predicting emotion regulation difficulties from maternal emotion dismissing (ab = .02 [.004, .04]) and paternal emotion dismissing (ab = .01 [.002, .03]) through performance-approach goals for emotion regulation (see Models 3 and 4 in Figure 1). Similarly, results indicated significant indirect effects predicting emotion regulation difficulties

from maternal (ab = .12 [.07, .18]) and paternal (ab = .07 [.02, .13]) emotion dismissing through performance-avoidance goals for emotion regulation (see Models 5 and 6 in Figure 1).

Discussion

The purpose of this study was to investigate whether reports of parental responses to negative emotion during childhood would be associated with young adults' implicit theories of emotion and goals for emotion regulation, as well as to test these emotion-related beliefs and goals as mediators in the relationship between recalled parental emotion socialization in childhood and emotion regulation in young adulthood. Consistent with hypotheses, findings supported that higher retrospective reports of parental emotion coaching in childhood were associated with greater learning goals for emotion regulation in young adulthood. In turn, higher learning goals for emotion regulation significantly mediated the negative relationship between paternal and maternal emotion coaching with emotion regulation difficulties in young adulthood. Higher parental emotion dismissing was associated with greater performance goals for emotion regulation. In turn, higher performance goals for emotion regulation significantly mediated the relationship between paternal and maternal emotion dismissing with emotion regulation difficulties in young adulthood. Taken together, these findings are consistent with the notion that the perception of the emotion-related feedback received from important socialization figures during childhood is related to the way in which a person comes to approach, and regulate, their emotions in young adulthood.

Whereas previous research has indicated that parental emotion socialization practices are associated with emotional functioning in young adulthood (e.g., Guo et al., 2017; Leerkes et al., 2015; Lugo-Candelas et al., 2016; Magai et al., 2004), the present study adds to the literature by proposing a potential mechanism through which this process may occur. In line with an implicit

theory perspective, results may be interpreted to suggest that the process-oriented versus ability-focused feedback children receive about their negative emotions during childhood may lead them to internalize different goals for regulating their emotional experiences, with important implications for how they come to regulate their own emotions in young adulthood. Specifically, results support the possibility that children whose parents respond to their negative emotions with process-oriented feedback by encouraging emotional understanding and focusing on problem-solving (characteristic of an emotion coaching style) are more likely to value their emotional experiences as opportunities for learning and personal growth. In turn, this learning-oriented approach towards one's own emotions is associated with fewer emotion regulation difficulties in young adulthood. Conversely, children whose parents treat negative emotion as something to eliminate or ignore (characteristic of an emotion dismissing style) may come to view the potential experience of emotional difficulty as a significant threat, leading to a focus on proving emotional control (i.e., a performance-approach goal for emotion regulation), or evading negative emotional experiences altogether due to a fear of losing emotional control (i.e., a performance-avoidance goal for emotion regulation). Consistent with the implicit theory framework, results further indicated that higher performance goals for emotion regulation significantly mediated the relationship between parental emotion dismissing and greater difficulties regulating emotion in young adulthood.

Limitations and Future Directions

One important limitation of this study is it's use of cross-sectional data to test a model of how parental emotion socialization during childhood impacts emotion-related beliefs and goals, and how these factors precede present emotion regulation difficulties in young adulthood. Although these hypotheses are rooted in the implicit theory framework (Dweck & Leggett,

1988), true causal inferences are not possible given the cross-sectional design of this study. For example, it is possible that the repeated experience of emotion regulation difficulty lead to increased performance-avoidance goals and lower goals of learning from emotional experiences. Additionally, the accuracy of participants' retrospective reports of parenting during childhood may be questioned. Importantly however, previous studies have supported the validity of similar retrospective reports, finding that other measures of young adults' recollections of parenting during childhood are moderately correlated with their parents' and siblings' self-reports, and are consistent over time (Brewin, Andrews, & Gotlib, 1993; Harlaar et al., 2008; Leerkes et al., 2015). Moreover, it may be argued that children's perceptions of their parents' emotion socialization style has a more important effect on current functioning than how parents themselves view their emotion socialization style (Haimowitz & Dweck, 2016). Longitudinal studies and corroborating reports of parents and siblings would be needed to establish the reliability of the parental emotion socialization measure used in this study, as well as to confirm chronological links between these constructs. Finally, as this is the first study to investigate relations among these variables, all results are subject to replication in more diverse samples, which would help to support the generalizability of present findings beyond primarily female university students.

Conclusion

In conclusion, results indicate that individuals' perceptions of their parents' responses to their negative emotions during childhood are related to the goals for emotion regulation they endorse in young adulthood. In turn, goals for emotion regulation may help to explain the relationship between parental emotion socialization during childhood and emotion regulation in young adulthood. Findings are consistent with the notion that perceived emotion-related

feedback from important socialization figures during childhood is related to the way in which a person comes to approach, and subsequently regulate, their emotions in young adulthood; and more broadly, results provide insight on the intergenerational processes through which emotion-related cognitions may be transmitted.

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Table 1

Descriptive statistics and correlations among implicit theory of emotion, goals for emotion regulation, emotion regulation difficulties, and parent emotion socialization variables (n = 461)

	1	2	3	4	5	6	7	8	9
1. Implicit theory	1								
2. Learning goal	.07	1							
3. Performance-approach	.15**	.26**	1						
4. Performance-avoidance	-.11*	.11*	.37**	1					
5. Emotion regulation	-.23**	-.18**	.14**	.60**	1				
6. Maternal coaching	.04	.13**	-.01	-.07	-.17**	1			
7. Maternal dismissing	.04	-.05	.16**	.21**	.17**	.05	1		
8. Paternal coaching	.02	.12*	-.07	.05	-.06	.17**	-.05	1	
9. Paternal dismissing	-.01	.05	.10*	.12**	.07	.01	.29**	.08	1
Range	1.25-5	1-7	1-7	1-7	21-84	6-30	4-20	6-30	4-20
M	3.40	4.84	4.22	4.17	46.75	20.62	14.11	17.38	14.49
SD	.80	1.24	1.55	1.41	12.37	5.11	3.28	5.46	3.18

Notes. ** $p < .01$, * $p < .05$.

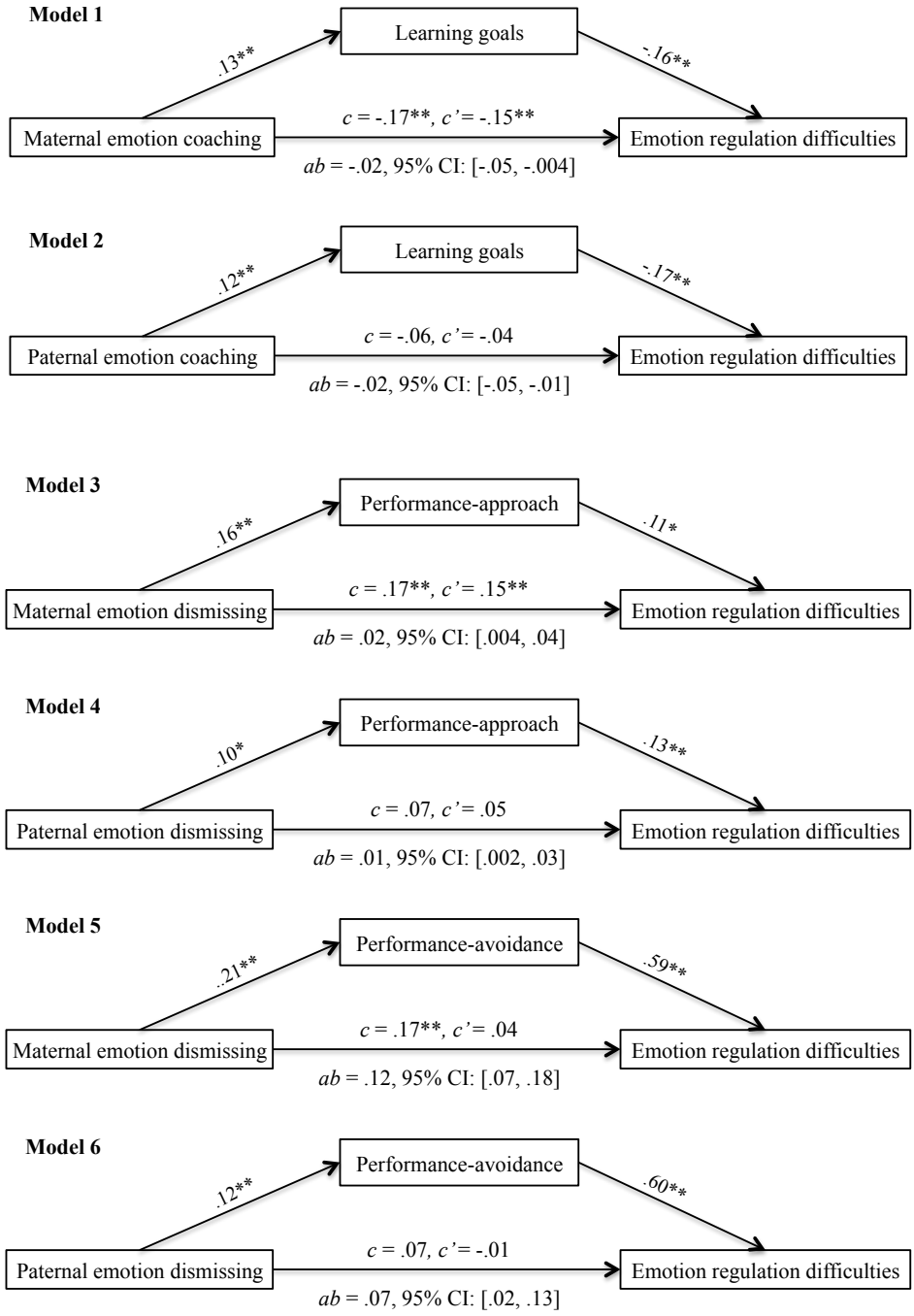

Figure 1. Mediation models illustrating the total (*c*), direct (*c'*), and indirect effects (*ab*) of parental emotion socialization during childhood on emotion regulation difficulties in young adulthood. All point estimates are standardized regression coefficients. ** $p < .01$, * $p < .05$.

Appendix 1

Original Item Pool for the Maternal Version of the Emotion Socialization Questionnaire

(reworded with permission from the Maternal Emotion Socialization Questionnaire; Lagacé-Séguin & Coplan, 2005)

Instructions: Below you will see statements that describe how your MOTHER may have thought and behaved when you were young. Please think back to your earliest childhood memories (age 0-12) and rate how much you would agree with each statement.

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 =Agree 5 = Strongly Agree

1. When I felt negative emotions, my mother believed it was time to problem solve.
2. My mother believed that negative emotions are worth exploring.
3. When I felt negative emotions, my mother believed she was expected to fix the world and make it perfect.
4. When I felt negative emotions, my mother believed it was a time to get close.
5. My mother believed that negative emotions are something that one has to get over with, to ride out, not to dwell on.
6. My mother preferred me to be happy rather than overly emotional.
7. My mother helped me get over negative emotions quickly so I could move onto other things.
8. When I felt negative emotions, my mother used it as an opportunity for getting close.
9. When I felt negative emotions, my mother took some time to experience these feelings with me.
10. My mother tried to change my negative moods into cheerful ones.
11. My mother believed that childhood is a happy-go-lucky time, not a time to feel negative emotions.
12. When I felt negative emotions, my mother's goal was to get me to stop.
13. When I felt negative emotions, my mother wanted to know what I was thinking.
14. When I felt negative emotions, my mother believed it was time to solve a problem.

Appendix 2

Original Item Pool for the Paternal Version of the Emotion Socialization Questionnaire

(reworded with permission from the Maternal Emotion Socialization Questionnaire; Lagacé-Séguin & Coplan, 2005)

Instructions: Below you will see statements that describe how your FATHER may have thought and behaved when you were young. Please think back to your earliest childhood memories (age 0-12) and rate how much you would agree with each statement.

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

1. When I felt negative emotions, my father believed it was time to problem solve.
2. My father believed that negative emotions are worth exploring.
3. When I felt negative emotions, my father believed he was expected to fix the world and make it perfect.
4. When I felt negative emotions, my father believed it was a time to get close.
5. My father believed that negative emotions are something that one has to get over with, to ride out, not to dwell on.
6. My father preferred me to be happy rather than overly emotional.
7. My father helped me get over negative emotions quickly so I could move onto other things.
8. When I felt negative emotions, my father used it as an opportunity for getting close.
9. When I felt negative emotions, my father took some time to experience these feelings with me.
10. My father tried to change my negative moods into cheerful ones.
11. My father believed that childhood is a happy-go-lucky time, not a time to feel negative emotions.
12. When I felt negative emotions, my father's goal was to get me to stop.
13. When I felt negative emotions, my father wanted to know what I was thinking.
14. When I felt negative emotions, my father believed it was time to solve a problem.

Appendix 3

Pattern Matrix Illustrating Unique Factor Loadings of Items on the Emotion Coaching and Dismissing Subscales of the Retrospective Maternal Emotion Socialization Scale (R-MESQ)

Item	Factor 1: Emotion coaching	Factor 2: Emotion dismissing
4. When I felt negative emotions, my mother believed it was a time to get close.	**.807**	.023
9. When I felt negative emotions, my mother took some time to experience these feelings with me.	**.763**	-.102
13. When I felt negative emotions, my mother wanted to know what I was thinking.	**.704**	.074
8. When I felt negative emotions, my mother used it as an opportunity for getting close.	**.653**	.017
2. My mother believed that negative emotions are worth exploring.	**.642**	-.189
1. When I felt negative emotions, my mother believed it was time to problem solve.	**.583**	.218
12. When I felt negative emotions, my mother's goal was to get me to stop.	-.025	**.753**
11. My mother believed that childhood is a happy-go-lucky time, not a time to feel negative emotions.	-.006	**.633**
6. My mother preferred me to be happy rather than overly emotional.	.030	**.604**
5. My mother believed that negative emotions are something that one has to get over with, to ride out, not to dwell on.	.003	**.510**
Total Eigenvalue	2.95	1.68
% of Variance Explained	29.25	16.76

Appendix 4

Pattern Matrix Illustrating Unique Factor Loadings of Items on the Emotion Coaching and Dismissing Subscales of the Retrospective Paternal Emotion Socialization Scale (R-PESQ)

Item	Factor 1: Emotion coaching	Factor 2: Emotion dismissing
4. When I felt negative emotions, my father believed it was a time to get close.	**.850**	.026
9. When I felt negative emotions, my father took some time to experience these feelings with me.	**.826**	-.148
8. When I felt negative emotions, my father used it as an opportunity for getting close.	**.810**	.068
2. My father believed that negative emotions are worth exploring.	**.714**	-.130
13. When I felt negative emotions, my father wanted to know what I was thinking.	**.695**	.051
1. When I felt negative emotions, my father believed it was time to problem solve.	**.516**	.182
11. My father believed that childhood is a happy-go-lucky time, not a time to feel negative emotions.	-.010	**.686**
12. When I felt negative emotions, my father's goal was to get me to stop.	.067	**.678**
6. My father preferred me to be happy rather than overly emotional.	.013	**.673**
5. My father believed that negative emotions are something that one has to get over with, to ride out, not to dwell on.	-.058	**.459**
Total Eigenvalue	3.35	1.65
% of variance explained	33.53	16.51

CHAPTER 5

Discussion

Summary of Findings and Original Contributions to Knowledge

Given important links between emotion regulation and mental health, understanding the psychological processes underlying why some people are more or less effective in regulating their emotions than others is an important quest for academics and clinicians. Drawing from research on motivation in other self-regulation domains, this dissertation applied an implicit theory framework to further current understanding of the psychological processes underlying individual differences in the self-regulation of emotion, specifically.

Results of Manuscript 1 supported that implicit theories of emotion are associated with individual differences in key emotion regulation processes. Specifically, lower emotion controllability beliefs were associated with greater difficulties understanding and accepting one's own emotions, poorer access to strategies perceived as effective in modulating the duration and intensity of emotion, lower impulse control, and greater problems maintaining goal-directed behavior when experiencing emotional distress. Moreover, difficulties in emotional clarity and poorer access to effective emotion regulation strategies each uniquely mediated the relationship between lower emotion controllability beliefs with higher stress and lower well-being. Whereas previous studies have investigated relations between implicit theories of emotion with only single emotion regulation strategies, Manuscript 1 adds to the literature by demonstrating relations between implicit theories of emotion with broader cognitive (i.e., acceptance, clarity) and behavioral (i.e., impulse control, goal persistence) dimensions of emotion regulation. Moreover, Manuscript 1 suggests that, although perceived access to effective emotion regulation strategies is the most important mediator of the relationship between implicit theories of emotion

and emotional functioning, the tendency for individuals with lower emotion controllability beliefs to report poorer emotional clarity also has a unique mediating role.

Building on these findings, Manuscript 2 investigated relations between implicit theories of emotion and multivariate profiles of emotion regulation, as well as the role of goals for emotion regulation in mediating these links. Whereas previous studies have focused on bivariate relations between implicit theories of emotion or goals for emotion regulation with single emotion regulation strategies, Manuscript 2 complemented this literature by adopting a person-oriented approach in which relations between implicit theories of emotion, goals for emotion regulation, and young adults self-reported patterns of engagement in multiple adaptive and maladaptive cognitive emotion regulation strategies were examined. Results supported that higher emotion controllability beliefs were associated with an increased likelihood of engaging in an adaptive (vs. maladaptive) multivariate profile of emotion regulation, characterized by a pattern of high use of cognitive reappraisal, acceptance, planning, refocusing, and putting into perspective, and low use of catastrophizing, rumination, self-blame, and other-blame. Moreover, the tendency for individuals with higher emotion controllability beliefs to report lower performance-avoidance goals for emotion regulation partially mediated this link. Although implicit theories of emotion were unrelated to learning goals for emotion regulation, learning goals for emotion regulation were indeed associated with an increased likelihood of engaging in an adaptive (vs. maladaptive) profile of emotion regulation. Interestingly, lower emotion controllability beliefs were associated with lower performance-approach goals for emotion regulation, which were also associated with an increased likelihood of engaging in a pattern of low (adaptive or maladaptive) emotion regulation strategy use overall. In line with an implicit theory framework, findings from Manuscript 2 are the first to suggest that implicit theories of

emotion are related to peoples' broad patterns of adaptive versus maladaptive self-regulatory responding in the domain of emotion, both directly and indirectly through the emotion-related goals individuals may be oriented to pursue in the context of different beliefs. Specifically, the reduced tendency of individuals with higher emotion controllability beliefs to focus on goals of avoiding the appearance of a lack of emotional control may partially explain why higher emotion controllability beliefs are associated with a more active and adaptive pattern of emotion regulation strategy use.

Finally, Manuscript 3 investigated potential developmental correlates of implicit theories of emotion and goals for emotion regulation, focusing specifically on young adults' retrospective reports of the parental feedback about emotion they received during childhood. Results supported that greater process-oriented parental feedback about emotion (i.e., an emotion coaching style) was associated with higher learning goals for emotion regulation in young adulthood. In turn, higher learning goals for emotion regulation partially mediated the negative relationship between reports of parental emotion coaching during childhood with emotion regulation difficulties in young adulthood. Conversely, parental feedback that conveyed a need to suppress or ignore negative emotions (i.e., an emotion dismissing style) was associated with higher performance-avoidance and performance-approach goals for emotion regulation in young adulthood. In turn, higher performance-avoidance and performance-approach goals for emotion regulation significantly mediated the positive relationship between parental emotion dismissing and emotion regulation difficulties in young adulthood. Results are the first to demonstrate the potential role that important socialization figures may play in the development of goals in the domain of emotion. Moreover, these findings add to the literature by suggesting that the

intergenerational transmission of these beliefs and goals may help to explain why parental emotion socialization is linked to emotional functioning in both childhood and young adulthood.

Clinical Implications and Directions for Future Research

Collectively, the results of these studies support that discovering one's lay beliefs about emotion as well as the way in which they are motivated to approach their own emotional difficulties may help to conceptualize why individuals habitually regulate their emotions in the ways that they do. It is hoped that, in revealing the kinds of emotion-related cognitions underlying more (and less) effective emotion regulation, researchers may seek to identify intervention strategies to foster the emotion-related mindsets that are most conducive to mental health. Indeed, recent experimental studies have demonstrated that implicit theories of emotion and goals for emotion regulation may be easily primed, supporting their amenability to short-term intervention (e.g., Fredericks et al., 2017; Kneeland et al., 2016a; Kneeland et al., 2016b). As such, an important avenue for continued research is to identify optimal strategies through which to target these emotion-related beliefs and goals, as well as to evaluate the long-term effects of these manipulations on emotional and psychological functioning.

In particular, the present findings have important implications for cognitive-based emotion regulation therapies, aimed at challenging and restructuring clients' maladaptive cognitions and bolstering emotion regulation self-efficacy (Hofman, Asmundson, & Beck, 2016). Previously, scholars have suggested that prior to viewing oneself as able to regulate emotion, it is necessary to view emotions as fundamentally controllable (Kneeland et al., 2016; Tamir & Mauss, 2011). In addition to fostering beliefs that emotions are fundamentally amenable to control, current findings support that clinicians should work with their clients to develop a learning-focused orientation towards emotional experiences, as well as actively seek to alleviate

fears of losing emotional control. If not explicitly addressed, low emotion controllability beliefs and performance goals for emotion regulation may unknowingly persist throughout treatment, hindering clients' willingness to participate in therapeutic exercises perceived as threatening, and limiting their ability to generalize learned strategies to more naturalistic contexts (Kneeland et al., 2016). By collaboratively exploring and exposing these emotion-related beliefs and goals as potential sources of treatment ambivalence, clinicians may help to enhance their clients' intrinsic motivation to engage in therapy, promoting more sustainable therapeutic benefits over time (see motivational interviewing; Arkowitz, Miller, & Rollnick, 2017).

Additionally, future research may investigate how implicit theories of emotion and goals for emotion regulation may already be addressed in treatment, and evaluate their roles as potential mediators of treatment-related changes for existing therapeutic approaches. To date, some scholars have argued for the role of emotion beliefs in the context of individual therapy, suggesting that higher emotion controllability beliefs may not only mediate the effectiveness of therapy on clinical outcomes, but also bolster clients commitment to and engagement with services, promote positive expectations for change, and increase help-seeking behaviour even before treatment (De Castella et al., 2015; Schroder et al., 2015). Elucidating cognitive changes that occur in the treatment of mental disorders is a priority of clinical research (Hertel & Mathews, 2011); and the continued study of emotion-related beliefs and goals as mediating variables across therapeutic approaches and disorders holds promise for new insight on the etiology, maintenance, and treatment of the emotion regulatory problems underlying various psychopathologies.

Implications for School Mental Health Professionals

Another implication of these findings relates to the potential of implicit theories of

emotion and goals for emotion regulation as promising targets for large-scale emotion regulation interventions, such as through school-based universal mental health promotion programs. Certainly, childhood and adolescence are opportune periods in which to foster the foundations of mental health, and school mental health professionals are fittingly positioned to help achieve this aim. Moreover, current findings linking parental feedback about emotion during childhood to how individuals approach their emotions into young adulthood support the potential role of other important socialization figures (e.g., teachers, counsellors) in fostering these emotion-related attitudes.

Indeed, school-based mental health programs have conferred an array of social, emotional, behavioral, and academic benefits for youth (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Although research on implicit theory of emotion interventions is needed, several studies on implicit theories in other self-regulation domains have highlighted the potential for simple and brief school-based interventions targeting these beliefs to have long-lasting benefits for youth. Several school-based intervention studies support that inducing incremental theories in students can lead to reductions in aggressive behaviors (Yeager, Trzesniewski, & Dweck, 2013) and depressive symptoms (Miu & Yeager, 2014), and improvements in academic achievement (Blackwell et al., 2007; Good, Aronson, & Inzlicht, 2003), interpersonal relations (Yeager et al. 2014), and prosocial coping (Yeager & Miu, 2011). Further supporting the viability of school-based implicit theory interventions, many of these studies targeted youth of varying socioeconomic and ethnic backgrounds, using various methods (e.g., videos, mentoring, reading, writing, computer, or workshop activities), and some interventions were found to maintain their effects on mental health up to two years later (for reviews, see Cohen & Garcia, 2012; Yeager & Walton, 2011). Given the promise of these

interventions, an important task for future research is to develop similar models of school-based implicit theory of emotion interventions as an addition to, part of, or instead of, current mental health promotion efforts. Specifically, current findings suggest that fostering beliefs that emotions can be controlled, emphasizing emotions as important sources of learning and growth, and reducing motivations to avoid portraying evidence of emotional difficulty may encourage youth to engage in more effective emotion regulation strategies, and to experience better mental health over time.

Directions for Future Research

Overall, the pattern of findings in the present studies is consistent with the primary tenets of the implicit theory framework (Dweck & Leggett, 1988). Lower emotion controllability beliefs were associated with a more maladaptive pattern of emotion regulation, both directly and indirectly through performance-avoidance goals for emotion regulation. Although the anticipated relation between higher emotion controllability beliefs and learning goals for emotion regulation was not found, learning goals for emotion regulation were indeed associated with a more adaptive pattern of emotion regulation strategy use, and did significantly mediate the positive relationship between process-oriented parental feedback about negative emotions during childhood with fewer emotion regulation difficulties in young adulthood.

Importantly however, while empirical research on the implicit theory framework has focused on learning and performance goals as the most proximal mediators of implicit theory outcomes, theoretical papers discussing the implicit theory framework often emphasize a much broader network of inter-related beliefs, goals, and attributions, that together, guide self-regulatory responding (Dweck, 2000, 2011; Dweck, Chiu, & Hong, 1995). For example, other cognitive structures proposed to stem from implicit theories with important implications for self-

regulation include one's perceived confidence in their ability to influence outcomes, the attributions they make when faced with difficulty, and their beliefs in the efficacy of effort in overcoming presenting obstacles (e.g., Burnette et al., 2013; Dweck, 2001, Dweck et al., 1995). Future research applying the implicit theory framework in the domain of emotion would be improved by investigating relations between implicit theories of emotion, learning and performance goals for emotion regulation, emotion regulation self-efficacy, attributions, effort beliefs, and other emotion-related cognitions that may be activated within an implicit theory of emotion framework. Indeed, clarifying the cognitive networks or meaning systems individuals hold about their own emotions and emotions more generally may help to further our understanding of the motivational processes underlying individual differences in emotion regulation, and subsequently, mental health.

Conclusion

By applying an implicit theory framework in the domain of emotion, this dissertation adds to our current understanding of the motivational processes that may guide individuals to regulate their emotions in the ways that they do. In line with the broader implicit theory framework, findings support that one's core beliefs about the controllability of emotion may create a network of allied emotion-related beliefs, goals, and coping preferences that, in turn, are associated with distinct trajectories of emotional and psychological functioning. Moreover, findings support the potential for an intergenerational transmission process from the emotion-related feedback one receives from important socialization figures during childhood to the general approach they take towards emotional difficulty in young adulthood. Taken together, findings shed new light on the developmental and psychological processes that may guide individual differences in emotion regulation, with important implications for mental health.

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Appendix A

Implicit Theory of Emotion Scale (Tamir et al., 2007)

BELIEFS ABOUT EMOTIONS

For each of the following four statements, please circle the number that best represents how much you agree or disagree with the statement:

	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
1. Everyone can learn to control their emotions.	○	○	○	○	○
2. If they want to, people can change the emotions that they have.	○	○	○	○	○
3. No matter how hard they try, people can't really change the emotions that they have.	○	○	○	○	○
4. The truth is, people have very little control over their emotions.	○	○	○	○	○

Appendix B

Emotion Regulation Goal Scale (Rusk et al., 2011)

Read each item carefully. Choose the number that best describes how true this item is for you.

	1 Not at all true of me	2	3	4 Somewhat true of me	5	6	7 Very true of me
1. I want to learn as much as possible from my emotions.	○	○	○	○	○	○	○
2. My goal is to manage my emotions better than most other people.	○	○	○	○	○	○	○
3. It is important for me to understand my emotions as thoroughly as possible.	○	○	○	○	○	○	○
4. In many situations, I prefer to experience emotions that challenge me to learn more about myself.	○	○	○	○	○	○	○
5. I often think to myself, ‘‘What if I can’t control my emotions?’’	○	○	○	○	○	○	○
6. I just want to avoid being unable to change how I feel.	○	○	○	○	○	○	○
7. I’m afraid that if I ask people for help in managing my emotions, they might think I’m emotionally unstable.	○	○	○	○	○	○	○
8. I hope to gain a broader and deeper knowledge of my emotions every time I try to deal with them.	○	○	○	○	○	○	○
9. It is important to me to handle my emotions better than other people do.	○	○	○	○	○	○	○
10. I am motivated by the thought of outperforming other people in controlling my emotions.	○	○	○	○	○	○	○
11. In many situations, I prefer to experience emotions that allow me to learn about myself, even if they are unpleasant.	○	○	○	○	○	○	○
12. I worry about the possibility of being unable to control my emotions.	○	○	○	○	○	○	○
13. It is important to me to do well compared to others in managing my emotions.	○	○	○	○	○	○	○

Appendix C

Cognitive Emotion Regulation Questionnaire – Short Form (Garnefski & Kraaij, 2006)

How do you cope with events?
Everyone gets confronted with negative or unpleasant events now and then and everyone responds to them in his or her own way. By the following questions you are asked to indicate what you generally think, when you experience negative or unpleasant events.

	1 (almost) never	2 sometimes	3 regularly	4 often	5 (almost) always
1. I think that I have to accept that this has happened	○	○	○	○	○
2. I often think about how I feel about what I have experienced	○	○	○	○	○
3. I think I can learn something from the situation	○	○	○	○	○
4. I feel that I am the one who is responsible for what has happened	○	○	○	○	○
5. I think that I have to accept the situation	○	○	○	○	○
6. I am preoccupied with what I think and feel about what I have experienced	○	○	○	○	○
7. I think of pleasant things that have nothing to do with it	○	○	○	○	○
8. I think that I can become a stronger person as a result of what has happened	○	○	○	○	○
9. I keep thinking about how terrible it is what I have experienced	○	○	○	○	○
10. Thank you for your attention, please select regularly	○	○	○	○	○
11. I feel that others are responsible for what has happened	○	○	○	○	○
12. I think of something nice instead of what has happened	○	○	○	○	○
13. I think about how to change the situation	○	○	○	○	○
14. I think that it hasn't been too bad compared to other things	○	○	○	○	○
15. I think that basically the cause must lie within myself	○	○	○	○	○
16. I think about a plan of what I can do best	○	○	○	○	○

17. I tell myself that there are worse things in life	○	○	○	○	○
18. I continually think how horrible the situation has been	○	○	○	○	○
19. I feel that basically the cause lies with others	○	○	○	○	○

Appendix D

Difficulties in Emotion Regulation Scale – Short Form (Kaufman et al., 2015)

Please indicate how often the following apply to you.

	Almost Never (0–10%)	Some-times (11–35%)	About Half Of the Time (36–65%)	Most of the Time (66–90%)	Almost Always (91–100%)
1. I pay attention to how I feel	1	2	3	4	5
2. I have no idea how I am feeling	1	2	3	4	5
3. I have difficulty making sense out of my feelings	1	2	3	4	5
4. I care about what I am feeling	1	2	3	4	5
5. I am confused about how I feel	1	2	3	4	5
6. When I'm upset, I acknowledge my emotions	1	2	3	4	5
7. When I'm upset, I become embarrassed for feeling that way	1	2	3	4	5
8. When I'm upset, I have difficulty getting work done	1	2	3	4	5
9. When I'm upset, I become out of control	1	2	3	4	5
10. When I'm upset, I believe that I will end up feeling very depressed	1	2	3	4	5
11. When I'm upset, I have difficulty focusing on other things	1	2	3	4	5
12. When I'm upset, I feel guilty for feeling that way	1	2	3	4	5
13. When I'm upset, I have difficulty concentratin	1	2	3	4	5
14. When I'm upset, I have difficulty controlling my behaviors	1	2	3	4	5
15. When I'm upset, I believe there is nothing I ca do to make myself feel better	1	2	3	4	5
16. When I'm upset, I become irritated with mysel for feeling that way	1	2	3	4	5
17. When I'm upset, I lose control over my behavior	1	2	3	4	5
18. When I'm upset, it takes me a long time to feel better	1	2	3	4	5

Appendix E

Mental Health Continuum – Short Form (Keyes, 2009)

Place a check mark in the box that best represents your experiences and feelings. During the past month, how often did you feel the following ways:

	Never	Once or Twice	About once a week	2 or 3 times a week	Slightly Agree	Almost everyday	Everyday
1. Happy	○	○	○	○	○	○	○
2. Interested in life	○	○	○	○	○	○	○
3. Satisfied with life	○	○	○	○	○	○	○
4. That you had something important to contribute to society	○	○	○	○	○	○	○
5. That you belonged to a community (like a social group, school, neighbourhood, etc.)	○	○	○	○	○	○	○
6. That our society is a good place, or it is becoming a better place, for all people	○	○	○	○	○	○	○
7. That our society is becoming a better place for people like you	○	○	○	○	○	○	○
8. That people are basically good	○	○	○	○	○	○	○
9. That the way our society works made sense to you	○	○	○	○	○	○	○
10. That you liked most parts of your personality	○	○	○	○	○	○	○
11. Good at managing the responsibilities of your daily life	○	○	○	○	○	○	○
12. That you had warm and trusting relationships with others	○	○	○	○	○	○	○
13. That you had experiences that challenged you to grow and become a better person	○	○	○	○	○	○	○
14. Confident to think or express your own ideas and opinions	○	○	○	○	○	○	○
15. That your life has a sense of direction or meaning to it	○	○	○	○	○	○	○

Appendix F

Perceived Stress Scale (PSS-4; Cohen et al., 1983)

The questions below ask you about your feelings and thoughts DURING THE LAST MONTH. In each case, please indicate how often you felt or thought a certain way.

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you felt that you were unable to control the important things in your life?

2. In the last month, how often have you felt confident about your ability to handle your personal problems?

3. In the last month, how often have you felt that things were going your way?

4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Appendix G

The Retrospective Maternal Emotion Style Questionnaire (Adapted from Lagace-Seguin & Coplan, 2005)

Below you will see statements that describe how your MOTHER may have thought and behaved when you were young. Please think back to your earliest childhood memories (age 0-12) and rate how much you would agree with each statement.

1 = strongly disagree 2=disagree 3= neutral 4=agree 5=strongly agree

1. When I felt negative emotions, my mother believed it was time to problem solve.
2. My mother believed that negative emotions are worth exploring.
3. When I felt negative emotions, my mother believed she was expected to fix the world and make it perfect.
4. When I felt negative emotions, my mother believed it was a time to get close.
5. My mother believed that negative emotions are something that one has to get over with, to ride out, not to dwell on.
6. My mother preferred me to be happy rather than overly emotional.
7. My mother helped me get over negative emotions quickly so I could move onto other things.
8. When I felt negative emotions, my mother used it as an opportunity for getting close.
9. When I felt negative emotions, my mother took some time to experience these feelings with me.
10. My mother tried to change my negative moods into cheerful ones.
11. My mother believed that childhood is a happy-go-lucky time, not a time to feel negative emotions.
12. When I felt negative emotions, my mother's goal was to get me to stop.
13. When I felt negative emotions, my mother wanted to know what I was thinking.
14. When I felt negative emotions, my mother believed it was time to solve a problem.

Appendix H

The Retrospective Paternal Emotion Style Questionnaire (Adapted from Lagace-Seguin & Coplan, 2005)

Below you will see statements that describe how your FATHER may have thought and behaved when you were young. Please think back to your earliest childhood memories (age 0-12) and rate how much you would agree with each statement.

1 = strongly disagree 2=disagree 3= neutral 4=agree 5=strongly agree

1. When I felt negative emotions, my father believed it was time to problem solve.
2. My father believed that negative emotions are worth exploring.
3. When I felt negative emotions, my father believed he was expected to fix the world and make it perfect.
4. When I felt negative emotions, my father believed it was a time to get close.
5. My father believed that negative emotions are something that one has to get over with, to ride out, not to dwell on.
6. My father preferred me to be happy rather than overly emotional.
7. My father helped me get over negative emotions quickly so I could move onto other things.
8. When I felt negative emotions, my father used it as an opportunity for getting close.
9. When I felt negative emotions, my father took some time to experience these feelings with me.
10. My father tried to change my negative moods into cheerful ones.
11. My father believed that childhood is a happy-go-lucky time, not a time to feel negative emotions.
12. When I felt negative emotions, my father's goal was to get me to stop.
13. When I felt negative emotions, my father wanted to know what I was thinking.
14. When I felt negative emotions, my father believed it was time to solve a problem.