Perfectionism, Life Narratives, and Well-Being During Freshman Year

by

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Dedicated to the love of my life

Kelly Barrie

For giving me the love and support I needed throughout this long journey

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Abstract

Various dimensions of perfectionism are proposed, but are seldom integrated. This research develops and tests an integrative theory of perfectionism. Theory predicts personality traits (perfectionistic concerns, but not perfectionistic strivings) precede and predict changes in characteristic adaptations (perfectionistic self-presentation and perfectionism cognitions). Theory also predicts characteristic adaptations precede and predict decreases in subjective well-being (SWB), and are associated with a particular patterned form of perfectionistic narrative identity (i.e., heightened agency and lowered communion). This research tests this integrative theory. A sample of 127 emerging adults (ages 18-25) transitioning to university for the first time was recruited (78% female; 81% Caucasian). A 3-wave, 130-day longitudinal design with quantitative and qualitative components was used. Participants completed questionnaire measures of perfectionism and subjective well-being at all waves, and completed semi-structured life story interviews at Waves 1 and 3. Interviews were transcribed and coded for themes of agency (i.e., themes of achievement, status, power, and self-mastery) and communion (i.e., themes of love, dialogue, caring, and community). Results are presented in Chapters 2, 4 and 5. In Chapter 2, perfectionistic concerns led to increased perfectionistic self-presentation, which in turn led to decreases in SWB. In contrast, perfectionistic strivings did not predict longitudinal change in perfectionistic self-presentation or SWB. These findings supported hypotheses. In Chapter 4, perfectionistic concerns and perfectionism cognitions were positively correlated with agency. Perfectionism cognitions mediated the relationship between perfectionistic concerns and agency. A qualitative thematic analysis revealed themes of agency focused on performance-related concerns, with undertones of self-doubt and unrealistic high standards. These findings supported hypotheses. In Chapter 5, perfectionistic concerns and SWB were unrelated to communion, contrary to expectations. However, themes of communion exhibited good inter-rater reliability, test-retest reliability, and face validity. Hypotheses regarding communion were not supported. Overall, most hypotheses were supported. By conceptualizing perfectionistic personality as a dynamic, multifaceted, and integrated system, there are numerous implications for developmental, clinical, and personality psychology. These implications, along with the strengths and limitations of this study, are discussed.

List of Abbreviations and Symbols Used

Non-Statistical Abbreviations

HFMPS	Hewitt and Flett Multidimensional Perfectionism Scale
FMPS	Frost Multidimensional Perfectionism Scale
APS-R	Almost Perfect Scale – Revised
SWB	Subjective Well-Being
EDI	Eating Disorder Inventory
QUAN	Quantitative data
QUAL	Qualitative data
PCI	Perfectionism Cognitions Inventory

Statistical Symbols

α	Chronbach's Alpha
β	Standardized regression coefficient (Beta)
χ^2	Chi-square statistic
χ^2/df	Chi-square divided by degrees of freedom
AC_1	Gwet's measure of inter-rater reliability for dichotomous variables
CFI	Comparative Fit Index
ΔCFI	Change in Comparative Fit Index
CI	Confidence Interval
ICC	Intraclass Correlation
M	Mean
MLR	Robust Maximum Likelihood Estimation in Mplus Software
N	Number of participants / Sample Size
p	p-value for determining statistical significance
r	Pearson Product-Moment Correlation Coefficient
r_s	Spearman Rank-Order Correlation Coefficent
RMSEA	Root-mean-square error of approximation
SD	Standard Deviation
TLI	Tucker-Lewis index

Acknowledgements

Chapter 1:

Introduction

There are numerous grand theories of personality. A review of most introductory

personality textbooks reveals a wide array of theoretical approaches, including

psychodynamic, cognitive, interpersonal, behaviourist, and neurological theories

(McAdams, 2006b). Textbooks often present the field of personality as a disjointed whole

with little theoretical integration (e.g., Cervone & Pervin, 2009). Numerous theorists have

attempted to unify and integrate the field of personality (e.g., McAdams & Pals, 2006),

with varying degrees of success. Though there is considerable variation and disagreement

on the finer details of integrative personality theories, overall there are points of

congruence across theories. In this first chapter, I will compare and contrast five

personality theories in detail.

A discussion of these theories must be prefaced by acknowledging important

features in their historical development. In many cases, these theories challenge or

augment a dominant paradigm in personality, which I will broadly refer to as "trait

psychology." Trait psychology argues that personality is innate, stable, and mostly

unchangeable (e.g., Costa & McCrae, 1994). In this framework, personality is something

that a person is born with, and changes little throughout life. Though this definition of

personality is ancient – indeed, we might track the history of trait psychology back as

early as Galen's four humors around 190 A.D. – the beginning of trait psychology as an

empirical, quantitative science emerged from the "lexical hypothesis," which posits that

the most important individual differences in people will be encoded as single words in language (Goldberg, 1993). Many researchers (e.g., Galton, Cattell, Allport) began by pulling words from the dictionary and thesaurus, and attempted to group these words into larger constructs, initially using a more qualitative sorting process, and later using quantitative factor analysis. This research paradigm has been criticized for being data-driven and atheoretical, but has nonetheless generated enormous amounts of research (see review by Goldberg, 1993). Perhaps the most prominent model to emerge was the five-factor model of personality (extraversion; neuroticism; conscientiousness; agreeableness; openness to experience; McCrae & Costa, 1987), though other prominent models suggest three factors (extraversion; neuroticism; psychoticism; Eysenck, 1991) or six factors (Lee & Ashton, 2004; adding an honesty-humility factor to the five-factor model). As research accumulated, it became clear that personality traits measured with questionnaires composed of descriptive adjectives and Likert scales were reliable and highly stable over time, with some researchers maintaining that personality is "set like plaster," and virtually never changes (e.g., Costa & McCrae, 1994).

It is against this backdrop that Cantor (1990) proposed a cognitive model of personality intended to supplement and enhance understanding and conceptualization of personality. While Cantor acknowledged personality traits are an important level of personality, she focused on broadening the definition of personality beyond traits. Specifically, Cantor described three cognitive features of personality which, as a whole, represent what Allport (1937) called the "doing" part of personality. Cantor first discussed *schemas*, which are cognitive heuristics used to organize and interpret

information. Schemas selectively direct attention and selectively affect the way people reconstruct memories by making certain features of life and experience chronically accessible. For example, pessimistic people might selectively attend to and remember negative events in their life. The second feature Cantor discusses is *personal projects*. Personal projects are individual goals and activities a person engages in. They tell us something important about what motivates a person, and what activities provide a sense of meaning in a person's life. For example, an adolescent might want to learn how to drive, which represents a developmentally significant personal project. Finally, Cantor discusses *cognitive strategies*, which are strategies used to accomplish personal projects. People may or may not be aware of the strategies they use, particularly when the strategies are maladaptive (e.g., self-handicapping; Arkin & Oleson, 1998). In sum, schemas, personal projects, and cognitive strategies represent the dynamic, more idiosyncratic cognitive processes of a person's personality, and represent a second level of personality that is qualitatively and empirically differentiated from personality traits.

The two-level model of personality (i.e., "having" vs "doing") outlined by Allport (1937), and expanded on by Cantor (1990), is useful. McAdams (1996; see also McAdams & Pals, 2006) broadened the model further, proposing three distinct levels of personality, arranged from least to most idiosyncratic. Level 1 refers to broad, stable, decontextualized personality traits, in line with the bulk of trait personality research, and in line with what Cantor (1990) calls the having part of personality. Level 2 refers to features of personality that are contextualized within certain times, roles, or situations. Level 2 not only includes schemas, personal projects, and cognitive strategies described

by Cantor (1990), but also a wide variety of other contextualized features of personality, such as motivation, coping, and domain-specific skills. Originally, McAdams called Level 2 *personal concerns* (McAdams, 1996), but in later writing calls them *characteristic adaptations* (McAdams & Pals, 2006). Level 3 is the most idiographic yet, and includes autobiographical stories, which provide a person with personal meaning, identity, unity, and purpose. This level of personality emerges from the literature on narrative psychology (e.g., Bruner, 1991), and has no direct parallel in Cantor's (1990) theory. McAdams (1996; McAdams & Pals, 2006) argues that we must know information about all three levels of personality to develop a more complete picture of personality.

Around the same time McAdams (1996) was developing his theory, McCrae and Costa (1999) were developing their Five Factor Theory of personality. McCrae and Costa propose four levels of personality. *Basic tendencies* are stable, relatively unchanging personality traits that do not vary across situations. Notably, basic tendencies are solely represented by the Big Five personality traits (McCrae & John, 1992). *Characteristic adaptations* are more malleable, domain-specific aspects of personality that emerge as an interaction between basic tendencies and environmental influence, including constructs such as personal strivings and attitudes. *Self-concept* refers to a sense of who one is, including self-schemas, personal myths, and selective self-perception. *Objective biography* includes everything a person objectively does, thinks, or feels in his or her life. Broadly speaking, a combination of self-concept and objective biography roughly corresponds to McAdams and Pals' (2006) autobiographical narratives. McCrae and Costa's (1999) model further conceptualizes personality as a dynamic system, and

proposes causal relationships between different levels of personality. This theory

proposes that basic tendencies predict characteristic adaptations, but not the reverse. It

also proposes that characteristic adaptations lead to objective biography and self-concept,

but not the reverse. In contrast, McAdams and Pals (2006) do not specify clear causal

pathways between different levels of personality. McCrae and Costa's (1999) model is

more specific than McAdams and Pals' (2006) model, and makes much stronger claims

about the directionality of relationships. Additionally, McAdams and Pals' model makes

few claims about directionality, and focuses more on "knowing a person," which

provides a more encompassing and open-ended way of classifying different types of

personality constructs.

Tyrer's (2010) model of personality was developed for disordered personality. He

proposes three levels of disordered personality. *Personality traits* are stable, cross-

situational aspects of personality disorders that lead to habitual behaviour. *Personality*

function is the more malleable, state-like aspect of personality disorders that may change

over time and across situations. *Personality organization* represents how all the features

of personality are integrated into a unified whole, providing a person with a sense of

identity and purpose. In individuals with severe personality disorders, the sense of

unification and coherence is often lost. Indeed, autobiographical narratives from people

with personality disorders are often incoherent, overgeneral, and impoverished

(Dimaggio, 2011). Though Tyrer's (2010) model focuses on personality disorders as

opposed to personality in general, it is evident that Tyrer's model resembles McAdams'

(1996) initial articulation of his personality theory. The similarity is striking because

Tyrer (2010) does not cite any of the personality theories discussed so far, yet comes to similar conclusions based on his clinical assessments.

In sum, all of these theories discuss a level of personality which is stable, relatively unchangeable, and consistent across contexts. Hereafter, I will refer to this level of personality as *personality traits*. Additionally, these theories discuss a second level of personality which includes things such as strivings, motivations, goals, self-presentation strategies, and automatic cognitions. Though theorists disagree on the precise features defining this level of personality, there is a broad consensus that this level contains features of personality that are malleable, domain specific, and context-dependent. Hereafter, I will refer to these features of personality as *characteristic adaptations*. Finally, some theorists (e.g., McAdams & Pals, 2006; Tyrer, 2010) discuss overall personality organization or identity as a third level of personality, particularly as manifested in an autobiographical narrative. Autobiographical narratives are thought to give a person purpose, unity, meaning, and identity (McAdams & Pals, 2006). Because I use autobiographical narratives to assess personality, I will refer to this level of personality as *narrative identity*. Ultimately, my goal is to present an integrative model of perfectionism that incorporates all three levels of personality.

Trait Perfectionism

Numerous theories conceptualize perfectionism as a personality trait. Early models of perfectionism conceptualized it as a unidimensional personality trait, broadly defined as "people who strain compulsively and unremittingly toward impossible goals and who measure their own worth entirely in terms of productivity and accomplishment"

(Burns, 1980, p. 34).   However, contemporary theories tend to converge on multidimensional models. In the next section, I review three prominent frameworks (Dunkley, Blankstein, Hallsall, Williams, & Winkworth, 2000; Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991) for understanding perfectionism as a multidimensional construct.

Hewitt and Flett (1991) have approached perfectionism from an interpersonal perspective, arguing that perfectionism includes both personal and social components. They developed the Hewitt and Flett Multidimensional Perfectionism Scale (HFMPS), which is comprised of three dimensions. Self-oriented perfectionism involves rigidly setting unrealistically high standards for oneself and stringently evaluating one's own behaviour. Other-oriented perfectionism involves setting unrealistically high standards of perfection for others and stringently evaluating others' performance. Socially prescribed perfectionism is a belief or perception that other people set unrealistic standards, exert considerable pressure to be perfect, and harshly evaluate all performance. A considerable amount of research supports the internal consistency, test-retest reliability, construct validity, and convergent validity of these constructs as measured by the HFMPS in undergraduate and clinical samples (Hewitt & Flett, 2004). Of the three subscales, socially prescribed perfectionism tends to emerge as the strongest predictor of a variety of negative outcomes (Hewitt & Flett, 1991). Moreover, when all three variables are entered into a single regression equation, only socially prescribed perfectionism tends to emerge as a significant predictor of poor psychological adjustment, such as increased depressive symptoms, burnout, and contingent self-worth (e.g., Childs & Stoeber, 2010;

Flett, Besser, Davis, & Hewitt, 2003). In sum, though perfectionism is conceptualized as

multidimensional, socially prescribed perfectionism appears to have the greatest

predictive validity when predicting psychological maladjustment.

Around the same time Hewitt and Flett's (1991) model emerged, Frost et al.

(1990) also presented a multidimensional model of perfectionism. They developed a

different questionnaire called the Frost Multidimensional Perfectionism Scale (FMPS).

The FMPS has six subscales: Concern over mistakes (i.e., fear of making mistakes

coupled with rigid all-or-nothing thinking involving success and failure), doubts about

actions (i.e., doubts about the quality of one's work), parental criticism (i.e., a belief that

parents are highly critical), parental expectations (i.e., a belief that parents expect

perfection), personal standards (i.e., extremely high self-standards), and organization

(i.e., an overemphasis on being neat and organized). Though research supports the

internal consistency and test-retest reliability of the FMPS (Frost et al., 1990), the factor

structure has tended to be unstable across studies, with most studies suggesting

somewhere between four to six factors (Stallman & Hurst, 2011). When examining the

predictive validity of each subscale, concern over mistakes and doubts about actions

subscales typically emerge as the strongest predictors of psychological distress (e.g., Cox,

Enns, & Clara, 2002) and represent some of the most maladaptive aspects of trait

perfectionism (Dunkley et al., 2000). In contrast, the personal standards and organization

subscales are often unrelated or positively related to measures of psychological

adjustment, especially when controlling for other perfectionism dimensions (Stoeber &

Otto, 2006). Overall, there is no consistent support for a six-dimensional factor structure

of perfectionism using the FMPS. However, the concern over mistakes and doubts about actions subscales do emerge consistently as independent factors in confirmatory factor analysis, and are strong predictors of psychological distress (Cox et al., 2002; Stallman & Hurst, 2011).

A growing trend in the perfectionism literature is to integrate both of the aforementioned models into a single, parsimonious model of trait perfectionism. Dunkley et al.'s (2000) factor analytic work suggests that a two-factor model of perfectionism can be derived from combining constructs from Hewitt and Flett's (1991) and Frost et al.'s (1990) models of perfectionism. The first factor in Dunkley et al.'s (2000) model is called *evaluative concerns perfectionism*, which is a composite of socially prescribed perfectionism, concern over mistakes, and doubts about actions. The second factor is *personal standards perfectionism*, which is composed of self-oriented perfectionism and personal standards. The idea of a two-dimensional model is not new, and harkens back to early models of "neurotic" versus "normal" perfectionists (Hamachek, 1978). Moreover, other laboratories have independently suggested a two dimensional model (e.g., Cox et al., 2002; Stoeber & Otto, 2006) of perfectionism, though they often use different names for the factors. Though researchers disagree about the precise item content on questionnaires, a two-dimensional model is becoming the dominant approach to measuring trait perfectionism throughout the literature (e.g., Graham et al., 2010; Hill, Huelsman, & Araujo, 2010; Park, Heppner, & Lee, 2010). To retain consistency in terminology, I use the terms *perfectionistic concerns* (i.e., evaluative concerns perfectionism, neurotic perfectionism) and *perfectionistic strivings* (i.e., personal

standards perfectionism, normal perfectionism) to describe these constructs, consistent with prior work in our lab (e.g., Mackinnon et al., 2012).

The Almost-Perfect Scale

Slaney, Rice, Mobley, Trippi, and Ashby (2001) describe perfectionism as a personality trait with both adaptive and maladaptive characteristics. Slaney et al. (2001) developed the Almost Perfect Scale – Revised (APS-R), which is comprised of three dimensions: (a) Discrepancy (i.e., a perception of falling short of one's own standards), (b) High Standards (i.e., setting high goals and striving for excellence), and (c) Order (i.e., being neat, orderly, and organized). This questionnaire has excellent psychometric properties, strong rank-order stability over time, and cross-cultural applicability (Rice & Aldea, 2006; Slaney et al., 2001; Mobley, Slaney & Rice, 2005). When these subscales are analyzed as continuous variables using correlation and regression, research shows that the discrepancy subscale is associated with negative outcomes (e.g., Rice & Aldea, 2006; Rice, Richardson, & Clark, 2012) and the high standards and order subscales are frequently associated with positive outcomes (e.g., Stoeber & Otto, 2006).

Some researchers (e.g., Rice & Ashby, 2007) use cluster analysis on the APS-R to classify participants into one of three categories: *Adaptive perfectionists* (i.e., high scores on the high standards subscale, low scores on the discrepancy subscale), *maladaptive perfectionists* (i.e., high scores on the high standards subscale, high scores on the discrepancy subscale), and *nonperfectionists* (i.e., low scores on both subscales, or low

scores on the high standards subscale and high scores on discrepancy subscale).[1] When data are analyzed using this categorical predictor, results show that adaptive perfectionists have more positive outcomes (e.g., better psychological adjustment, decreased depressive symptoms, higher GPA) and maladaptive perfectionists have more negative outcomes (e.g., decreased psychological adjustment, heightened depressive symptoms, lower GPA; see Stoeber & Otto, 2006).

At a conceptual level, there are important differences between the discrepancy subscale on the APS-R and perfectionistic concerns (i.e., socially prescribed perfectionism, concern over mistakes, and doubts about actions). Notably, the APS-R uses a more focused, narrow definition of perfectionism by focusing solely on perceptions of falling short of one's own personal standards. However, from a pragmatic standpoint, perfectionistic concerns and discrepancies are highly correlated and tend to predict the same sorts of outcomes (e.g., Rice & Ashby, 2007; Slaney et al., 2001). Thus, discrepancies are best thought of as an alternative way of conceptualizing trait perfectionism that is similar to perfectionistic concerns. Slaney et al.'s (2001) model

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[1] This paradigm does not typically differentiate between participants with low scores on both subscales and participants with high levels of discrepancy, but low levels of high standards: In this paradigm, both combinations are considered "nonperfectionists." However, it is worth noting here briefly that other models of perfectionism using a different measurement approach may differentiate between these types, such as Gaudreau and Thompson's (2010) 2x2 model of perfectionism.

focuses on streamlining and simplifying the operational definition of trait perfectionism and highlights the more positive components of perfectionism. In contrast, I focus primarily on perfectionistic concerns – a more encompassing, but somewhat more nebulous construct – and do not place much emphasis on the positive conceptions of perfectionism (i.e., adaptive perfectionism or perfectionistic strivings).

There is debate in the literature regarding the adaptive or maladaptive nature of perfectionistic strivings (Flett & Hewitt, 2006; Stoeber & Otto, 2006). Some researchers argue that healthy, adaptive perfectionism is a "pure" form of perfectionistic strivings uncontaminated by perfectionistic concerns, and identify this subtype using cluster analysis, covariates, or moderation (Gaudreau & Thompson, 2010; Rice & Ashby, 2007). While we acknowledge the importance of this debate, the present study is underpowered to test these hypotheses due to a high degree of colinearity among predictors (Mason & Perreault, 1991). However, it is worth noting that prior research using larger samples has sometimes finds that perfectionistic strivings predicts decreases in depressive symptoms once controlling for perfectionistic concerns (McGrath et al., 2012), though the effect size tends to be smaller than the strong positive relationship between perfectionistic concerns and depressive symptoms.

Is self-criticism a component of trait perfectionism?

Self-criticism as measured with the Depressive Experiences Questionnaire includes a pervasive feeling of falling short of expectations and standards, feeling ambivalent about oneself and others, a tendency to assume blame, and to be self-critical (Blatt, D'Afflitti, & Quinlan, 1976). Dunkley and colleagues suggest self-criticism is also

a core aspect of perfectionistic concerns. They have supported this contention using confirmatory factor analyses, which suggest self-criticism loads onto a single higher-order factor with socially prescribed perfectionism, doubts about actions, and concern over mistakes (Dunkley & Blankstein, 2000). Moreover, hierarchical multiple regression analyses suggest that self-criticism is a stronger predictor of negative outcomes than perfectionistic concerns (Dunkley, Blankstein, Masheb, & Grilo, 2006; Dunkley, Zuroff, & Blankstein, 2006).

While it is agreed that self-criticism is an important feature related to perfectionistic concerns, the evidence does not support including self-criticism as a component of trait perfectionism. Self-criticism was originally developed as a measure of depression (Blatt et al., 1976), and numerous items on the questionnaire appear to measure a different construct than the definitions of trait perfectionism discussed so far. Sample items from the self-criticism subscale on the Reconstructed Depressive Experiences Questionnaire are "Many times I feel helpless," "Often, I feel threatened by change," and "No matter how close a relationship between two people is, there is always a large amount of conflict" (Bagby, Parker, Joffe, & Buis, 1994, p. 63). While these features are correlated with trait perfectionism, they have poor face validity, and do not seem to tap the same construct. Future research would need to work towards revising the scale to have a better degree of face validity as a measure of perfectionistic concerns. In addition, though self-criticism is relatively stable over time, evidence also suggests that this construct has considerable within-person variance across four weeks (Graham et al., 2010) and from day to day (Sherry & Hall, 2009). Combined with research that suggests

self-criticism and depression are reciprocally related in longitudinal research (Shahar, Blatt, Zuroff, Kuperminc, & Leadbeater, 2004), evidence suggests that self-criticism is best identified as a characteristic adaptation, rather than a stable personality trait. More multi-wave longitudinal data is required to test the directionality of these relationships in future research. Finally, the hierarchical regression models presented by Dunkley and colleagues (Dunkley, Blankstein et al., 2006; Dunkley, Zuroff, et al., 2006) are statistically unconvincing because hierarchical regression is used in an exploratory manner, there is significant multicolinearity among predictors, and there is a violation of causal priority (see Petrocelli, 2003, for a description of these common errors using this analytic technique). Though this is untested in their papers, Dunkley and colleagues' (Dunkley, Blankstein et al., 2006; Dunkley, Zuroff, et al., 2006) results suggest a mediation model where perfectionistic concerns lead to self-criticism, which in turn leads to negative outcomes.

I chose to exclude self-criticism from my operationalization of trait perfectionism based on the issues noted above. I tend to conceptualize self-criticism as a characteristic (mal)adaptation emerging from perfectionistic concerns, rather than as a personality trait measuring the same latent construct. Nonetheless, it is important to acknowledge here that many researchers have concluded that self-criticism taps the same latent construct as other components of perfectionistic concerns (Dunkley, Blankstein et al. 2006). In my view, this remains an open empirical question, and requires more research addressing the concerns I list above before we can be confident in this conclusion.

Perfectionistic Adaptations

Most perfectionism research tends to conceptualize perfectionism as a stable, cross-situational personality trait (Frost et al., 1990; Hewitt & Flett, 1991). However, the perfectionism construct also contains state-like, domain-specific features. For example, McArdle (2010) measured two domain-specific aspects of perfectionism (sports vs. school), and finds that measures of perfectionism were only modestly correlated across these two domains ($r = .21$). Moreover, a wide variety of peripheral characteristic adaptations have been shown to mediate the relationship between trait perfectionism and well-being, including social disconnection, catastrophic thinking, and avoidant coping (Dunkley et al., 2000; Graham et al., 2010; Mackinnon et al., 2012). These variables, though peripheral to the perfectionism construct, are integral to the dynamic personality system in which perfectionistic concerns are embedded (McCrae & Costa, 1999). Broadly construed, the list of characteristic adaptations associated with perfectionistic concerns is exhaustive. This dissertation focuses primarily on two characteristic adaptations which are central to perfectionism, but are considered to be more context-dependent and malleable over time: Perfectionistic self-presentation (Hewitt, Flett, Sherry, et al., 2003) and perfectionism cognitions (Flett, Hewitt, Blankstein, & Gray, 1998).

Perfectionistic self-presentation can be thought of as a public expression of perfectionism which reflects a need to *appear* perfect (as opposed to trait perfectionism, which reflects a need to *be* perfect). Hewitt, Flett, Sherry, et al. (2003) developed and validated the Perfectionistic Self Presentation Scale, proposing three subscales: (a)

Perfectionistic self-promotion, which involves actively promoting and showcasing one's supposed perfection; (b) *nondisplay of imperfection*, which involves concealing all public displays of imperfect behaviour; and (c*) nondisclosure of imperfection*, which involves the avoidance of any verbal admissions of imperfection. Though Hewitt, Flett, Sherry, et al. (2003) maintain that perfectionistic self-presentation is multidimensional, these three subscales were intercorrelated (*r* values from .50 to .73) across three studies in their work (Hewitt, Flett, Sherry, et al., 2003), suggesting these subscales might be combined into a single higher-order construct. Some researchers combine all three measures into a single composite measure in analyses (e.g., Rudiger, Cash, Roehrig, & Thompson, 2007); I follow this approach when I measure perfectionistic self-presentation in Chapter 2. Research shows that perfectionistic self-presentation can predict unique variance in poor self-esteem, anxiety, depression, poor therapeutic alliance, and increased heart-rate after discussing mistakes even when controlling for perfectionistic concerns (Hewitt, Flett, Sherry, et al., 2003; Hewitt, Habke, Lee-Baggley, Sherry, & Flett, 2008). Thus, perfectionistic self-presentation appears to be distinct from measures of perfectionistic concerns. Moreover, self-concealment – a close analogue of non-display of imperfection – not only changes from day to day (Uysal, Lin, & Knee, 2010), but also mediates the relationship between perfectionistic concerns and well-being (Kawamura & Frost, 2004). Thus, theory and evidence suggest perfectionistic self-presentation is a public expression of perfectionistic concerns, and is best considered a characteristic (mal)adaptation integral to the perfectionism construct.

In contrast, perfectionism cognitions represent a private, mental expression of perfectionistic concerns. Perfectionism cognitions reflect the frequency of automatic thoughts involving themes of perfection over the past week, and are measured with the Perfectionism Cognitions Inventory (e.g., "I should be perfect," Flett et al., 1998). Perfectionism cognitions can predict depressive symptoms and anxiety over and above perfectionistic concerns, suggesting they are complementary to and not redundant with perfectionistic concerns (Flett et al., 1998; Flett, Hewitt, Demerjian, Sturman, Sherry, & Cheng, 2012; Flett, Hewitt, Whelen, & Martin, 2007). Perfectionism cognitions are considered to be private, state-like, and situation-specific, and have less rank-order stability than perfectionistic concerns (Flett et al., 1998). Moreover, experimental research suggests that perfectionism cognitions are more strongly associated with perfectionistic concerns and psychological distress after receiving negative performance feedback when compared to positive feedback, suggesting it is situation-specific (Besser, Flett, Hewitt, & Guez, 2008). In sum, perfectionistic cognitions are best considered a private, state-like characteristic (mal)adaptation emerging from perfectionistic concerns.

Perfectionistic Narrative

Though there is a rich case history of perfectionistic people in both popular and clinical literatures (e.g., Benjamin, 1993; Blatt, 1995), there has been little systematic work on how perfectionism is manifested in a person's autobiographical narrative. That is, we know little about what McAdams and Pals (2006) call *narrative identity* as it pertains to perfectionism. To more clearly understand perfectionism, it is necessary to understand not only personality traits and characteristic adaptations, but also the

narratives that organize, unify, and provide meaning in the lives of perfectionists. Indeed, qualitative research suggests that perfectionistic people do not want to eliminate their perfectionistic tendencies, even though they often admit that perfectionism causes significant distress and relationship problems in their lives (e.g., Slaney & Ashby, 1996). In fact, perfectionistic people often feel as though their academic and/or work success can be attributed to their perfectionistic tendencies (e.g., Schuler, 2000) – even though research suggests that the opposite is probably true, at least in terms of research productivity in university professors (Sherry, Hewitt, Sherry, Flett, & Graham, 2010). In

Blatt (2008) describes two core modalities of experience: Self-definition and relatedness. Self-definition corresponds to Bakan's (1966) conception of agency, which represents a striving for individualistic ideals, such as achievement, status, performance, power, and self-mastery. Relatedness corresponds to Bakan's (1966) communion construct, and includes interdependent strivings such as friendship, support, togetherness, and mutual dialogue. Blatt argues that some aspects of psychopathology can emerge developmentally from an over-focus on one of these two domains, at the expense of the other. In particular, Blatt (2008) suggests perfectionists are inordinately motivated by self-definition and have deficits in relatedness to others. For this reason, I chose to focus on themes of agency and communion when studying the autobiographical narratives of perfectionistic students. Chapters 4 and 5, I tackle this problem in earnest, reviewing the extant qualitative research before analyzing my own set of narrative data. Broadly speaking, Chapter 4 tests the hypothesis that perfectionistic people unify their subjective experience through themes of agency. Chapter 5 tests the hypothesis that perfectionistic

people also tell autobiographical narratives relatively bereft of communal themes, consistent with prior theory (e.g., the social disconnection model; Hewitt et al., 2006).

What is Well-Being?

The features that define "well-being" have been bitterly debated since the early Greeks, with one side defining well-being as pleasure and happiness while others define well-being as deriving a sense of meaning and personal growth from living life according to one's own personal values (Ryan & Deci, 2001).[2] Research suggests both of these ideas are central to well-being (Linley, Maltby, Wood, Osborne & Hurling, 2009; McGregor & Little, 1998; Ryan & Deci, 2001). The psychological construct of subjective well-being (SWB) emerged from a more hedonic philosophical tradition, and is frequently operationalized as life satisfaction, positive affect, and lack of negative affect (Diener, Suh, Lucas, & Smith, 1999). In contrast, psychological well-being emerged from a more eudaimonic philosophical tradition, and includes existential concerns such as generativity, a sense of purpose in life, and personal growth (e.g., Ryff & Keyes, 1995). Factor analyses (Linley et al., 2009) suggest SWB and psychological well-being are strongly related (latent correlation of .73), but represent separate constructs. Researchers

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[2] The literature on well-being is vast, and thousands of years old. Though I frame my argument here in terms of two common perspectives in psychology, the features that define a "good life" espoused by writers across history are as varied as human individuality itself. However, the two perspectives I describe here represent a useful starting point for psychological research.

of SWB have a strong interest in the relationships between personality and SWB. For instance, a meta-analysis by DeNeve and Cooper (1998) identified 137 different personality constructs related to SWB across 122 studies ($N = 42,171$). Researchers of psychological well-being typically have different research foci. For instance, many psychological well-being researchers are interested in how autonomy and perceived competence in goal pursuits promote psychological well-being (Ryan & Deci, 2001). Given the topics of interest in this dissertation (e.g., how perfectionism influences well-being), I focus on SWB, consistent with prior research.

Busseri and Sadava (2011) noted five prominent models of SWB in the literature, with little consensus on which model is the "best." Though all five models include positive affect, negative affect, and life satisfaction, these models suggest different methods to calculate an index of SWB. Model 1 suggests looking at all three components as separate, orthogonal constructs. Model 2 suggests combining measures as a single latent variable using structural equation modelling. Model 3 suggests a causal model, in which positive and negative affect predict life satisfaction. Model 4 suggests standardizing and summing all three components together into a single composite variable. Model 5 emphasizes the ideographic nature of SWB, rather than trying to apply a single construct to all people. Though Models 2 and 4 appear similar, Busseri and Sadava (2011) argue it is important to differentiate between these models because latent variables and composite scores are not mathematically identical, and may produce different results. Nonetheless, all models have empirical support and numerous adherents (Busseri & Sadava, 2011).

In my dissertation (Chapters 2 and 5), I use a composite model (Model 4). A composite model is preferred for three reasons. First, the three components of SWB are often significantly correlated with each other, suggesting they are not entirely orthogonal (e.g., Busseri & Sadava, 2011; data reported in Chapter 5 also support this contention). Second, factor analytic work supports a single factor composed of positive affect, negative affect, and life satisfaction (e.g., Linley et al., 2009). Finally, given the relatively small sample size in the present study ($N = 127$), running a single analysis is less prone to Type I and Type II errors than running separate analyses for each component (Models 1 & 3) or using a latent variable (Model 2).

Models of Perfectionism and SWB

Though it is clear that perfectionistic concerns, perfectionism cognitions, and perfectionistic self-presentation are negatively correlated with SWB (e.g., Flett et al., 1998; Hewitt, Flett, Sherry, et al., 2003), explanatory pathways between these variables are understudied. Multi-wave longitudinal designs with three or more measurement occasions allow for stronger causal inferences when compared to cross-sectional research (Cole & Maxwell, 2003). Longitudinal designs allow researchers to examine temporal precedence, and test for change over time by controlling for levels of outcome variables at prior waves. Moreover, analyzing data with a cross lagged panel (Little, Preacher, Selig, & Card, 2007) allows researchers to examine three models simultaneously: (a) A vulnerability model, in which perfectionism leads to decreased well-being; (b) A complication model, in which low SWB leads to increased perfectionism; and (c) a reciprocal relations model, in which changes in perfectionism lead to changes in SWB,

and vice versa (Bagby, Quilty, & Ryder, 2008). For simplicity's sake in the following review, I include studies that measure depressive symptoms as a proxy for measuring the broader SWB construct in addition to those that use more comprehensive measures of SWB.

Vulnerability models propose that personality traits place people at risk for decreased SWB over time. Central to this hypothesis is the stability of personality. Vulnerability models propose perfectionism remains stable before, during, and after periods of decreased SWB (Bagby et al., 2008). Perfectionistic concerns and perfectionistic self-presentation confer vulnerability to decreased SWB in longitudinal research (Chang, 2000; Chang & Rand, 2000; Cox, Clara, & Enns, 2009; Hawley, Ho, Zuroff, & Blatt, 2006; Hewitt, Flett, & Ediger, 1996; Rice & Aldea, 2006; Uysal et al., 2010). Perfectionistic strivings tend to be unrelated to SWB once controlling for perfectionistic concerns (e.g., Graham et al., 2010). To my knowledge, no longitudinal research has examined vulnerability models for perfectionism cognitions. In sum, vulnerability models incorporating perfectionistic concerns as a risk factor for decreased SWB tend to be well-supported by prior research.

Complication models suggest that low levels of SWB promote short-term increases in perfectionism over time. In these models, perfectionism is a consequence rather than a predictor of well-being. Tests of complication models are comparatively rare and results are somewhat mixed. Some research suggests that low levels of SWB lead to increases in perfectionistic concerns over time (e.g., Cox & Enns, 2003), while other studies suggest no complication effects (e.g., Hawley et al., 2006). To my

knowledge, no complication models using measures of perfectionistic self-presentation or perfectionism cognitions have been published. Early results testing complication models are promising, but too few studies have been conducted to date to draw conclusions about their viability.

Reciprocal relations models are also rare, and have received support when they incorporate self-criticism as a measure of perfectionism (Dunkley & Blankstein, 2000; McGrath et al., 2012; Shahar et al., 2004; Zuroff, Igreja, & Mongrain, 1990). For instance, a reciprocal relationship between self-criticism and depressive symptoms was found in a pair of 2-wave, 12-month longitudinal studies (Shahar et al., 2004; Zuroff et al., 1990). In addition, McGrath et al. (2012) found a reciprocal relationship between self-critical perfectionism (i.e., a latent variable comprised of socially prescribed perfectionism, concern over mistakes, and self-criticism; see Dunkley & Blankstein, 2000) and depressive symptoms in a 4-wave, 4-week longitudinal study. Though support for reciprocal relations models is found when using self-criticism as a component of perfectionism, research that does not incorporate self-criticism has tended to support vulnerability models instead (e.g., Hawley et al., 2006). Because self-criticism appears to change over time, this may suggest that self-criticism is best considered a characteristic (mal)adaptation of perfectionism, rather than a stable trait.

Primary Objectives

By integrating the research findings in the literature review above, I developed a conceptual model of perfectionism that underlies the hypotheses in the present research (see Figure 1.1). The primary objective of my dissertation is to test the conceptual model

of perfectionism presented in Figure 1.1 using a multi-wave, mixed method longitudinal design spanning the first year of university for freshman students. Specifically, my dissertation has four overarching objectives:

Objective 1: In Chapter 2, I demonstrate that perfectionistic concerns confer vulnerability for decreased SWB during the university transition, consistent with vulnerability models of perfectionism and well-being (Hewitt & Flett, 2002).

Objective 2: In Chapter 2, I also show that perfectionistic self-presentation is a mediator of the perfectionistic concerns–SWB relationship, consistent with the conceptual model outlined in Figure 1.1.

Objective 3: In Chapters 4 and 5, I test for the first time the relationship between perfectionism variables and narrative identity in the form of agency (i.e., themes of achievement, status, power, and self-mastery) and communion (i.e., themes of love, dialogue, caring, and togetherness). I predicted that perfectionistic concerns and perfectionism cognitions would be positively related to agency and negatively related to communion, consistent with prior research and theory (e.g., Blatt, 2008; Hewitt et al., 2006; Slaney & Ashby, 1996).

Objective 4: In Chapter 4, I show that perfectionism cognitions mediates the relationship between perfectionistic concerns and themes of agency in autobiographical narratives, consistent with the conceptual model outlined in Figure 1.1.

Figure 1.1

The conceptual model of perfectionism underlying my dissertation research.

Trait Perfectionism

The stable, trait-like aspects of perfectionism that are cross-situational and do not depend on a particular context

Components

Socially Prescribed Perfectionism
- Concerns over others' criticism and expectations

Concern over Mistakes
- Negative reactions to perceived failures

Doubts about Actions
- Doubts about one's performance abilities

Perfectionistic Adaptations

The way that perfectionistic people (mal)adapt to the environment within certain contexts and social situations

Components

Perfectionistic Self-Presentation
- Self-promotion and concealment of all imperfections in public settings

Perfectionism Cognitions
- Intrusive, automatic thoughts about the need to be perfect

Theorized direction of causality

Decreased Subjective Well-Being

A common outcome of perfectionism which refers to a person's subjective sense of emotional wellness and happiness

Components
Fewer positive emotions
More negative emotions
Less life satisfaction

Perfectionistic Narrative

An internalized personal narrative that integrates a person's reconstructed past and imagined future using perfectionistic themes

Components
Increased agency
Decreased communion

Theorized direction of causality

Chapter 2

Perfectionistic Self-Presentation Mediates the Relationship Between Perfectionistic

Concerns and Subjective Well-Being: A Three-Wave Longitudinal Study

Sean Mackinnon developed the research questions and methodology for the

present study, including (but not limited to) collecting and/or creating all materials

required to run the study (e.g., questionnaires, etc.), acquiring an ethics review at

Dalhousie University, and acquiring $10,000 in funding from the Dalhousie University

Department of Psychiatry Research Fund. Sean was directly responsible for coordinating

a team of research assistants, was directly involved in primary data collection for this

study, and he completed all of the literature review for this manuscript, as well as all of

the statistical analyses and writing. He received feedback on elements of the study's

design and editorial comments from the study's co-author (i.e., Sean's dissertation

supervisor, Dr. Simon Sherry) and assistance with general copyediting from paid research

assistants Matt MacNeil (BA) and Courtney Heisler (BA). This manuscript underwent

editorial and peer review, and was published in the journal *Personality and Individual

Differences* in March 2012. He also received editorial feedback from Dr. Sherry Stewart.

Dr. Tim Juckes and Dr. Kenneth Rice post-publication. The journal citation for this

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Running head: PERFECTIONISTIC SELF-PRESENTATION AND WELL-BEING

Perfectionistic Self-Presentation Mediates the Relationship Between Perfectionistic

Concerns and Subjective Well-Being: A Three-Wave Longitudinal Study

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Abstract

Dimensions of perfectionism are often proposed, but seldom integrated. Perfectionistic

concerns and perfectionistic strivings were conceptualized as traits (core, relatively

unchanging aspects of personality) and perfectionistic self-presentation as a characteristic

adaptation (a contextualized cognitive-behavioural strategy). Theory suggests traits

predispose people to engage in corresponding characteristic adaptations, and that

perfectionistic concerns confer vulnerability for subjective well-being (SWB). It was

hypothesized that perfectionistic concerns–but not perfectionistic strivings–would have

an indirect effect on SWB through perfectionistic self-presentation. Young adults (ages

18-24) transitioning into university for the first time ($N = 127$) participated in a three-

wave, 130-day longitudinal study. As hypothesized, perfectionistic self-presentation

mediated the relationship between perfectionistic concerns and SWB. In contrast,

perfectionistic strivings did not predict longitudinal change in perfectionistic self-

presentation or SWB. This research integrates prior theory, and provides a novel test of

hypotheses using longitudinal data.

Keywords: perfectionism, self-presentation, well-being, longitudinal, young adulthood

Perfectionistic Self-Presentation Mediates the Relationship Between Perfectionistic

Concerns and Subjective Well-Being: A Three-Wave Longitudinal Study

Most personality research focuses on stable personality traits, which crystallize

by midlife. This level of personality is referred to as primary stabilities (Wakefield,

1989), the "having" aspect of personality (Cantor, 1990), basic tendencies (McCrae &

Costa, 1999), traits (Fleeson & Leicht, 2006), and dispositional signatures (McAdams &

Pals, 2006). This first level of personality is thought of as core, relatively unchanging

attributes and behavioural tendencies of people. This level represents internal features of

people that do not rely on specific contexts or situations. For instance, people high in

neuroticism are thought to experience negative affect more strongly than other people,

regardless of the situation (Nettle, 2009). We refer to this level of personality as a "trait."

Human individuality is not composed of traits alone. Theorists propose a second

level of personality, which is referred to as secondary stabilities (Wakefield, 1989), the

"doing" aspect of personality (Cantor, 1990), states (Fleeson & Leicht, 2006), or

characteristic adaptations (McCrae & Costa, 1999; McAdams & Pals, 2006). This level

refers to cognitive and behavioural strategies used by individuals to deal with everyday

demands of life and includes contextualized features of personality that are contingent on

particular situations or developmental milestones. For instance, people are unlikely to be

intrinsically motivated in all situations, so intrinsic motivation is best conceptualized at

this level. We refer to this level of personality as a "characteristic adaptation."

Perfectionism: Trait or Characteristic Adaptation?

There is growing consensus on two major dimensions of perfectionism: Perfectionistic concerns and perfectionistic strivings (Dunkley, Zuroff, & Blankstein, 2003; Stoeber & Otto, 2006). Perfectionistic concerns include doubts about personal abilities, extreme concern over mistakes and being evaluated, and strong negative reactions to perceived failure. Perfectionistic strivings include rigidly and ceaselessly demanding perfection of oneself. These dimensions combine constructs from two dominant perfectionism research traditions: Cognitive-behavioural theory (Frost et al., 1990) and personality/interpersonal theory (Hewitt & Flett, 1991). Evidence suggests perfectionistic concerns and perfectionistic strivings are stable, trait-like aspects of perfectionism (Graham et al., 2010; Hewitt & Flett, 1991; Rice & Aldea, 2006). Theory and research suggest these dimensions are not context-specific and widely impact virtually all aspects of a person's life (Hewitt, Flett, Besser, Sherry, & McGee, 2003b). These dimensions are best considered a "trait."

However, perfectionistic self-presentation is better conceptualized as a characteristic adaptation. Hewitt, Flett, Sherry, et al., (2003) identified three components of perfectionistic self-presentation: Perfectionistic self-promotion (showcasing one's supposed perfection), nondisplay of imperfection (concealing one's imperfect behaviours), and nondisclosure of imperfection (avoiding verbal admissions of imperfection). Perfectionistic self-presentation is a contextual, situationally-activated social strategy that becomes more salient in certain relational contexts (Hewitt, Flett, Sherry, et al., 2003), which is within the purview of characteristic adaptations. Consistent

with this conceptualization, daily diary research shows self-concealment–a close

analogue of nondisplay of imperfection–changes from day-to-day (Uysal et al., 2010).

McCrae and Costa (1999) assert traits (perfectionistic concerns) will predict

increases in characteristic adaptations (perfectionistic self-presentation), rather than the

reverse. Supporting this idea, participants with high levels of perfectionistic concerns

show greater desire to keep their mistakes and personal information secret (Kawamura &

Frost, 2004), even when it would be clearly advantageous to discuss their problems or

limitations (Hewitt et al., 2008).

Vulnerability Models of Perfectionism and Subjective Well-Being

We test a theoretical model of perfectionism which includes traits, characteristic

adaptations, and subjective well-being (SWB). SWB includes presence of positive affect,

absence of negative affect, and general life satisfaction (Busseri & Sadava, 2011). We use

a composite model of SWB, which involves summing all three components into a single

composite variable. We prefer a composite model to a separate components model (i.e.,

viewing all three components as separate, orthogonal constructs) because of

intercorrelations among SWB components, and because factor analyses support a single

underlying factor (Linley et al., 2009). Personality strongly predicts SWB (e.g.,

emotional stability, repressive-defensiveness, trust, neuroticism; see DeNeve & Cooper,

1998) and setting realistic aspirations congruent with one's personal resources is

important (Diener et al., 1999). One widely researched model asserts perfectionism

confers vulnerability for decreased SWB, but not the reverse (Hewitt & Flett, 2002).

Longitudinal research suggests perfectionistic concerns confer vulnerability for decreased

SWB (Chang, 2000; Graham et al., 2010; Rice & Aldea, 2006). Perfectionistic self-presentation also confers vulnerability for decreased SWB in longitudinal research (Uysal et al., 2010). Results for perfectionistic strivings are inconsistent, with most research suggesting null relationships with SWB (Graham et al., 2010; Hill et al., 2010). Moreover, perfectionistic strivings are largely unrelated to depressive symptoms and perfectionistic self-presentation once perfectionistic concerns are taken into account (Graham et al., 2010).

Rationale and Hypotheses

Most perfectionism research focuses on negative affect, rather than absence of positive outcomes. We advance past work by using a more comprehensive measure of functioning, which encompasses both positive and negative components of SWB. There is also a shortage of multi-wave longitudinal research in the perfectionism literature. Research using more than two waves of data is necessary to make stronger causal inferences about directionality, and is particularly persuasive when examining developmentally important periods of time in which change is expected (Cole & Maxwell, 2003). Our research uses a three-wave, 130-day design to study the transition to university, following freshman students across their first two semesters at university—a developmental transition associated with changes in personality and SWB (Lodi-Smith, Geise, Roberts, & Robins, 2009). We also use a longitudinal panel test of mediation (Cole & Maxwell, 2003), which represents (to our knowledge) the strongest test of mediation in the perfectionism literature to date.

Two hypotheses were proposed: (a) Perfectionistic concerns would indirectly affect SWB through perfectionistic self-presentation when controlling for perfectionistic strivings (Figure 2.1); (b) perfectionistic strivings would not predict longitudinal change in perfectionistic self-presentation or SWB when controlling for perfectionistic concerns.

Method

Participants

Participants ($N = 127$; 77.9% women) were first-year undergraduates attending university for the first time. Participants averaged 18.31 years of age ($SD = 0.80$) and ranged from 18 to 24 years. Participants self-identified as Caucasian (81.1%), Asian (5.5%), Black (3.9%), Arabic (3.9%), or "other" (5.6%). This sample is comparable to prior samples of undergraduates at Dalhousie University (Graham et al., 2010).

Materials

Participants were directed to respond to items using a timeframe. A long-term timeframe ("during the past several years") was used for perfectionistic strivings and perfectionistic concerns, consistent with our conceptualization of these variables as traits. A 7-day timeframe ("during the past 7 days") was used for perfectionistic self-presentation and SWB, consistent with our conceptualization of perfectionistic self-presentation as a characteristic adaptation and SWB as a malleable outcome. All questionnaire items are presented in full in Appendix A.

Perfectionistic concerns. Perfectionistic concerns was measured by standardizing and summing items from three short-form subscales developed by Cox, Enns, and Clara (2002): The 5-item socially prescribed perfectionism subscale ("The

better I do, the better I am expected to do," Hewitt & Flett, 1991), the 5-item concern

over mistakes subscale ("If I fail at work/school, I am a failure as a person," Frost et al.,

1990), and the 4-item doubts about actions subscale ("Even when I do something very

carefully, I often feel that it is not quite right," Frost et al., 1990). Participants responded

to socially prescribed perfectionism items using 7-point scales from 1 (*strongly disagree*)

to 7 (*strongly agree*). Participants responded to concern over mistakes and doubts about

actions items using 5-point scales from 1 (*strongly disagree)* to 5 (*strongly agree*).

Research supports the reliability and validity of this measure (Graham et al., 2010). We

removed one item from Cox et al.'s (2002) 5-item concern over mistakes subscale ("The

fewer mistakes I make, the more people will like me") because of overlap in content with

perfectionistic self-presentation.

      Perfectionistic strivings. Perfectionistic strivings was measured by standardizing

and summing items from three short-form subscales: A 5-item self-oriented perfectionism

subscale ("I strive to be as perfect as I can be," Cox et al., 2002; Hewitt & Flett, 1991), a

4-item personal standards subscale ("I set higher goals than most people," Frost et al.,

1990; Cox et al., 2002), and a 4-item self-oriented perfectionism subscale based on the

Eating Disorder Inventory ("I hate being less than best at things," Garner, Olmstead, &

Polivy, 1983; McGrath et al., 2012). Participants responded to Hewitt and Flett's (1991)

self-oriented perfectionism items using 7-point scales from 1 (*strongly disagree*) to 7

(*strongly agree*). Participants responded to personal standards items using 5-point scales

from 1 (*strongly disagree*) to 5 (*strongly agree*). Participants responded to Garner et al.'s

(1983) self-oriented perfectionism items using 6-point scales from 1 (*never)* to 6

(*always*). Research supports the reliability and validity of this measure (McGrath et al., 2012).

Perfectionistic self-presentation. Perfectionistic self-presentation was measured by summing the 10-item perfectionistic self-promotion subscale ("I always tried to present a picture of perfection"), the 10-item nondisplay of imperfection subscale ("I hated to make errors in public"), and the 7-item nondisclosure of imperfection subscale ("I always kept my problems to myself") of the Perfectionistic Self Presentation Scale (Hewitt, Flett, Sherry, et al., 2003). Participants responded to items using 7-point scales from 1 (*strongly disagree*) to 7 (*strongly agree*). Research supports the reliability and validity of this measure (Hewitt, Flett, Sherry, et al., 2003).

Subjective well-being. Subjective well-being (SWB) was measured by standardizing and summing items from three subscales: A 10-item positive affect subscale ("Inspired," Watson, Clark, & Tellegen, 1988), a 10-item negative affect scale ("Distressed," Watson et al., 1988), and the 5-item Satisfaction with Life Scale ("I was satisfied with my life," Diener, Emmons, Larson, & Griffin, 1985). Negative affect was reverse-coded such that higher values equal higher SWB. Participants responded to the positive and negative affect scales using 5-point scales from 1 (*very slightly or not at all*) to 5 (*extremely*). Participants responded to the Satisfaction with Life Scale using 7-point scales from 1 (*strongly disagree)* to 7 (*strongly agree*). Research supports the use of summed total scores (Busseri & Sadava, 2011) and the reliability and validity of this measure (Linley et al., 2009).

Procedure

Students signed up for the study by contacting researchers via email. Participants learned about the study from four sources: Flyers ($N = 56$), class announcements ($N = 54$), subject pool ($N = 24$), and word-of-mouth ($N = 14$). Participants were screened for inclusion criteria before completing questionnaires (i.e., first year student between ages 18-25 attending post-secondary education for the first time). Though participants aged 18-25 years old were eligible, the oldest actual participant was 24 years old, so the observed range in age was only 18-24 years. Eligible participants completed pen-and-paper questionnaires in a laboratory across a three-wave, 130-day study. All participants completed Wave 1 within the first 50 days of fall term. Participants were scheduled to complete Wave 2 during the second half of fall term (45 days after Wave 1) and Wave 3 at the beginning of winter term (130 days after Wave 1). Questionnaires were identical across waves. Participants were provided with phone and email reminders and monetary incentive ($25.00-$55.00) to complete their assessments as scheduled. All 127 participants (100.0%) completed Wave 1; 125 participants (98.4%) completed Wave 2; and 115 participants (90.6%) completed Wave 3. Wave 2 occurred 44.96 ($SD = 4.97$) days after Wave 1, and Wave 3 occurred 133.18 ($SD = 8.08$) days after Wave 1, on average.

Results

Data Analytic Strategy

Overall, 6.3% of data were missing and covariance coverage ranged from 0.86 to 0.97. Listwise deletion was used for preliminary analyses and full information maximum

likelihood estimation was used for hypothesis testing. In path analyses, we used MLR estimation in Mplus 6.0, which is robust against violations of multivariate normality (Muthén & Muthén, 2010). Model fit was assessed using multiple fit indices. Well-fitting models are suggested by a comparative fit index (CFI) and a Tucker-Lewis index (TLI) around .95 and a root-mean-square error of approximation (RMSEA) less than .06 (Kline, 2005).

Mediation occurs if independent variables (perfectionistic concerns) lead to the mediator (perfectionistic self-presentation), which in turn leads to the dependent variable (SWB). We used Cole and Maxwell's (2003) procedure for testing mediation with longitudinal data (Figure 2.1). This improves on cross-sectional mediation by controlling for prior levels of variables at Wave 1 and Wave 2, allowing researchers to examine rank-order change in outcomes over time. Indirect effects were calculated by multiplying paths from the independent variable to the mediator (a-paths) by paths from the mediator to the outcome (b-paths). When indirect effects are statistically significant, mediation has occurred. Statistical significance of indirect effects was calculated using bias-corrected bootstrapping with 20,000 resamples. If 95% bootstrapped confidence intervals (95% CI) do not contain zero, mediation has occurred (Little et al., 2007). Boostrapping is a nonparametric alternative used because the indirect effect typically has a skewed distribution. When model comparison tests are conducted, we used ΔCFI. Models are significantly different from one another if ΔCFI > -0.01 (Cheung & Rensvold, 2002). When conducting tests of equivalence, we compared the unconstrained model (i.e., all paths allowed to freely vary) with a constrained model (i.e., paths constrained to equality

across waves). If model fit significantly worsens when constraints are added, equivalence across waves cannot be assumed. The most parsimonious model is the constrained model, which assumes relationships do not vary across different time lags. Two types of correlated error were specified a priori: (a) Within-trait, cross-wave correlated error and (b) same-trait, within-wave correlated error (Cole & Maxwell, 2003). These correlated error terms are used to account for violations of the independence assumption that typically occurs in longitudinal research. Wave 1 perfectionistic strivings was entered as a control variable by allowing it to correlate with all Wave 1 variables, and by including paths to perfectionistic self-presentation at Waves 2 and 3.

Preliminary Analyses

Means and standard deviations appear in Table 2.1 and bivariate correlations appear in Table 2.2. Means fell within one standard deviation of means from past studies of undergraduates (Graham et al., 2010). Alpha reliabilities ranged from .89 to .96, and test-retest correlations ranged from .60 to .91, supporting reliability. Perfectionistic strivings, perfectionistic concerns, and perfectionistic self-presentation were strongly correlated across waves (rs from .45 to .79). SWB was strongly and negatively correlated with perfectionistic concerns and self-presentation (rs from -.42 to -.61), but more weakly correlated with perfectionistic strivings (rs from -.15 to -.38) across waves.[3]

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[3] Because the correlations between SWB and perfectionistic strivings varied substantially across waves, my external examiner suggested that this may indicate factorial invariance over time for perfectionistic strivings. I test this hypothesis

Perfectionistic strivings were uncorrelated with perfectionistic self-presentation and SWB at Waves 2 and 3 once controlling for perfectionistic concerns (rs from .00 to .12; ps > .05).

Discriminant Validity

Though the correlation between perfectionistic concerns and perfectionistic self-presentation at Wave 1 was large (r = .79), the bias-corrected, bootstrapped 95% CI for this correlation ranged from .71 to .84. Because the 95% CI does not include 1.0, this provides evidence of discriminant validity (Anderson & Gerbing, 1988). To my knowledge, constraining the correlation to 1.0 is not possible in path analysis in AMOS without using latent variables; thus, an analysis comparing a constrained model to an unconstrained model was not conducted. See Hewitt, Flett, Sherry, et al. (2003) for further data supporting the discriminant validity of perfectionistic self-presentation.

Path Analysis

Cole and Maxwell's (2003) procedure for testing mediation was used (see Figure 2.1). We first conducted tests of equivalence to determine if paths could be constrained to equality across waves. The unconstrained model was not a significant improvement over the constrained model, ΔCFI = -.003. Thus, we constrained all paths to equality across

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empirically using confirmatory factor analysis of nested models in Appendix H. This analysis did indeed suggest that the factor structure for perfectionistic strivings varies somewhat over time, which may help account for the unstable correlations with this variable.

waves. The direct effect from perfectionistic concerns to SWB ($\beta = -.05$, $p > .05$) and the direct effect from perfectionistic strivings to SWB ($\beta = -.04$, $p > .05$) were both nonsignificant, and did not improve model fit, $\Delta CFI = .001$. These paths were not added to the final model. The model in Figure 2.2 fit the data well: $\chi^2 (N = 127) = 33.66$, $p = .07$; $\chi^2/df = 1.46$; CFI = .99; TLI = .98; RMSEA = .06 (90% CI: .00, .10). The bias-corrected, bootstrapped indirect effect from perfectionistic concerns to SWB through perfectionistic self-presentation was statistically significant, 95% CI [-.005, -.0003]. Standardized paths in Figure 2.2 differ slightly despite equality constraints (see Kline, 2005).[4]

Perfectionistic strivings was positively correlated with Wave 1 perfectionistic concerns ($\beta = .58$, $p < .001$), Wave 1 perfectionistic self-presentation ($\beta = .53$, $p < .001$), and Wave 1 SWB ($\beta = -.18$, $p < .05$). However, paths from perfectionistic strivings to perfectionistic self-presentation at Waves 2 and 3 were nonsignificant ($\beta = -.02$, $p > .05$). The indirect effect of perfectionistic strivings on SWB through perfectionistic self-presentation was also nonsignificant, 95% CI [-.005, .016].

Alternative models of SWB suggest positive affect, negative affect, and life satisfaction are orthogonal constructs (Busseri & Sadava, 2011). Data were re-analyzed

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[4] A reverse mediation model (SWB to perfectionistic self-presentation to perfectionistic concerns) was not supported. The paths from SWB to perfectionistic self-presentation ($\beta = .07$, $p > .05$) and from perfectionistic self-presentation to perfectionistic concerns ($\beta = -.00$, $p > .05$) are non-significant. This supports the proposed direction of effects in Figure 2.2.

examining each SWB component separately. Mediation occurred when predicting positive affect and negative affect, but not life satisfaction. Perfectionistic concerns had an indirect effect on positive affect through perfectionistic self-presentation, 95% CI [-.03, -.001]. A similar indirect effect was found for negative affect, 95% CI [.0005, .041], but not life satisfaction, 95% CI [-.03, .002].

Discussion

Both hypotheses were supported. Perfectionistic concerns indirectly affected SWB through perfectionistic self-presentation, supporting our first hypothesis. Our longitudinal approach to mediation allows for stronger causal inferences compared to cross-sectional data and two-wave longitudinal designs (Little et al., 2007). Results are consistent with personality theory suggesting traits (e.g., perfectionistic concerns) predict changes in characteristic adaptations (e.g., perfectionistic self-presentation) over time (McCrae & Costa, 1999). These results are also consistent with theory and research suggesting both perfectionistic concerns and perfectionistic self-presentation confer vulnerability to psychopathology and decreased well-being (Hewitt & Flett, 2002). Moreover, perfectionism variables exhibited strong rank-order stability over time. Relatively few studies present test-retest correlations for perfectionism variables, so these results represent an important psychometric contribution.

As hypothesized, perfectionistic strivings did not predict longitudinal change in perfectionistic self-presentation or SWB when controlling for perfectionistic concerns. Research suggests personal standards (Frost et al., 1990)–a key component of perfectionistic strivings–are uncorrelated with nondisclosure of imperfection, nondisplay

of imperfection, and self-concealment (Hewitt, Flett, Sherry, et al., 2003; Kawamura & Frost, 2004). Research also suggests perfectionistic strivings are inconsistently related to SWB; negative relationships between perfectionistic strivings and SWB tend to disappear when controlling for perfectionistic concerns (Hill et al., 2010; Graham et al., 2010).

When components of SWB were analyzed separately, perfectionistic self-presentation predicted change in positive and negative affect, but not life satisfaction. Perfectionistic self-presentation may be more strongly linked to affective components of well-being than cognitive appraisals of global life satisfaction. This inference is made cautiously, as this finding is in need of replication.

Theoretical Implications

Despite calls to return to more comprehensive models of personality in which multiple levels of personality are meaningfully integrated (e.g., McAdams & Pals, 2006), examples of such models are scarce. By situating perfectionism research within broader integrative personality frameworks suggested by McCrae and Costa (1999), McAdams and Pals (2006), and others, we are able to better understand personality as a dynamic system. Within this framework, enduring traits increase the likelihood people will think, feel, or act in a particular way within any given situation (i.e., their characteristic adaptations). For most practical purposes, characteristic adaptations should have the most influence on a person's well-being. Perfectionistic concerns involve a dispositional tendency to perceive others as critical and demanding, so perfectionistic self-presentation may represent a "solution" to this problem. However, this apparent solution is not without consequence: Presenting a false, "perfect" self comes at the expense of SWB. By

engaging in perfectionistic self-presentation, others are by necessity kept at a distance. In many relationships, development of intimacy is strongly dependent on mutual self-disclosure (Sprecher & Hendrick, 2004). Developing close, intimate relationships is a core developmental task for emerging adults (Arnett, 2000), so characteristic adaptations (e.g., perfectionistic self-presentation) that impede development of intimacy are also likely to undermine SWB.

Limitations and Future Research

We did not have sufficient statistical power to use structural equation modelling–a more valid analytic technique that better accounts for measurement error. Future studies should collect larger samples and use this superior analytic technique. This study also used a relatively short-term, 130-day measurement schedule. Given that personality change tends to be gradual (Lodi-Smith et al., 2009), future research might benefit from longer lags between measurement occasions. Finally, this study relied exclusively on self-report questionnaires. McAdams and Pals (2006) suggest autobiographical narratives are another key aspect of personality. In their view, autobiographical narratives are necessary to form a comprehensive picture of the whole person; future research could integrate traits, characteristic adaptations, and autobiographical narratives into a single model.

Conclusions

Our study tested an integrative model of perfectionistic concerns, perfectionistic self-presentation, and SWB, which not only draws on theory and research in the perfectionism literature (Hewitt & Flett, 2002), but also broad theories of personality

(McCrae & Costa, 1999; McAdams & Pals, 2006). This research has theoretical importance for work on perfectionism. By conceptualizing perfectionistic personality as a dynamic system, we can develop greater understanding of processes that contribute to SWB, and ultimately how to help people lead happier, more fulfilling lives.

Table 2.1

Means and Standard Deviations

Variable	Wave 1		Wave 2		Wave 3	
	M	*SD*	*M*	*SD*	*M*	*SD*
Perfectionistic strivings						
HFMPS Self-oriented perfectionism	4.74	1.07	4.52	1.11	4.26	1.23
FMPS Personal standards	3.39	0.82	3.38	0.90	3.30	0.92
EDI Self-oriented perfectionism	3.24	1.08	3.19	1.13	3.22	1.12
Perfectionistic concerns						
HFMPS Socially prescribed	3.88	1.39	3.80	1.35	3.60	1.42
FMPS Doubts about actions	2.75	0.96	2.76	0.97	2.74	1.02
FMPS Concern over mistakes	2.88	1.22	2.92	1.21	2.73	1.21
Perfectionistic self-presentation						
Perfectionistic self-promotion	3.65	1.15	3.60	1.23	3.57	1.18
Nondisplay of imperfection	4.18	1.31	3.93	1.44	3.76	1.42
Nondisclosure of imperfection	3.67	1.21	3.51	1.19	3.35	1.21
Subjective well-being						
Positive affect	3.37	0.79	3.25	0.84	3.33	0.87
Negative affect	2.15	0.69	2.17	0.81	1.98	0.74
Life satisfaction	4.52	1.42	4.65	1.39	4.81	1.51

Note. $N = 100$. HFMPS = Hewitt and Flett's (1991) Multidimensional Perfectionism Scale; FMPS = Frost et al.'s (1990) Multidimensional Perfectionism Scale; EDI = Garner et al.'s (1983) Eating Disorder Inventory. Means and standard deviations are based on averages calculated by summing all subscale items together then dividing by the number of items.

Table 2.2

Bivariate Correlations and Alpha Reliabilities

Variable	1	2	3	4	5	6	7	8	9	10	11	12	α
Wave 1													
1. Perfectionistic strivings	--												.91
2. Perfectionistic concerns	.59***	--											.89
3. Perfectionistic self-presentation	.57***	.77***	--										.95
4. Subjective well-being	-.19	-.49***	-.49***	--									.91
Wave 2													
5. Perfectionistic strivings	**.77***	.53***	.45***	-.16	--								.92
6. Perfectionistic concerns	.55***	**.91***	.72***	-.50***	.61***	--							.91
7. Perfectionistic self-presentation	.56***	.72***	**.87***	-.49***	.55***	.73***	--						.96
8. Subjective well-being	-.15	-.43***	-.43***	**.69***	-.19	-.50***	-.56***	--					.92
Wave 3													
9. Perfectionistic strivings	**.68***	.54***	.45***	-.20*	**.81***	.56***	.52***	-.23*	--				.93
10. Perfectionistic concerns	.51***	**.89***	.72***	-.53***	.51***	**.90***	.71***	-.49***	.65***	--			.92
11. Perfectionistic self-presentation	.46***	.73***	**.79***	-.46***	.45***	.72***	**.87***	-.50***	.54***	.79***	--		.96
12. Subjective well-being	-.27**	-.49***	-.42***	**.60***	-.34***	-.52***	-.55***	**.71***	-.38***	-.61***	-.58***	--	.94

Note. N = 100 (listwise deletion). Test-retest correlations appear in bold.

* p < .05 ** p < .01 *** p <.001
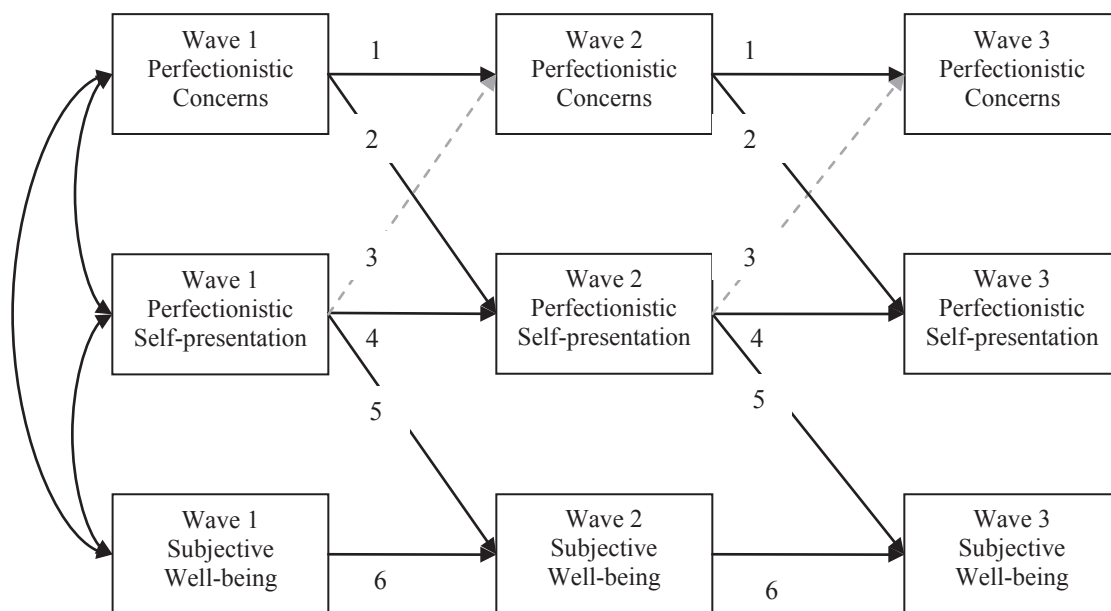
Figure 2.1. Cross-lagged panel model of mediation (hypothesized). Rectangles represent measured variables. Black arrows represent hypothesized significant effects; grey dotted arrows represent hypothesized nonsignificant effects. Paths sharing the same number were constrained to equality. The indirect effect of perfectionistic concerns on subjective well-being through perfectionistic self-presentation was calculated by multiplying paths 2 and 5. Residual error terms are not displayed. Though not shown, perfectionistic strivings was entered in the model as a control variable.
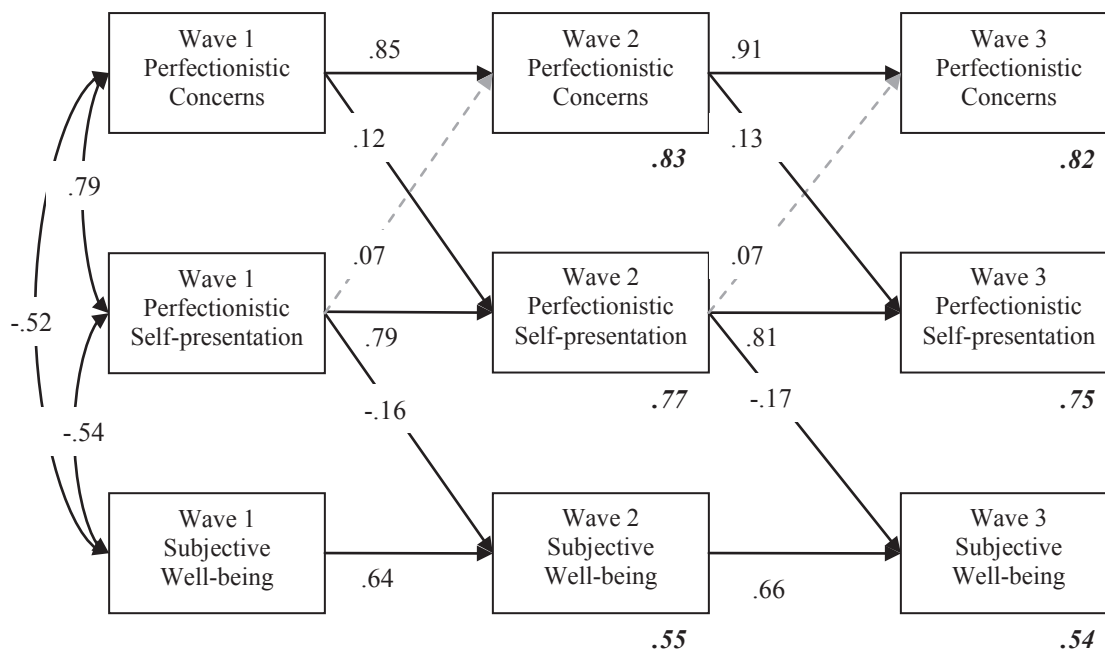
Figure 2.2. Cross-lagged panel test of mediation (actual data). Rectangles represent measured variables. Numbers beside paths represent standardized path coefficients or correlations. Italicized, bolded numbers represent the proportion of variance accounted for by exogenous variables. Residual error terms are not displayed. Though not shown, perfectionistic strivings was entered in the model as a control variable. Solid black lines are statistically significant ($p < .05$). Dotted grey lines are nonsignificant ($p > .05$).

Acknowledgements

Chapter 3

Introduction to Mixed Methods Research

Mixed methods designs collect and analyze both quantitative (i.e., numerical) and qualitative (i.e., words and ideas) data in a single study or series of studies. Mixed methods designs are predicated on the idea that combining quantitative and qualitative methods allows researchers to better understand phenomena when compared to either method in isolation (Creswell & Clark, 2006). Mixed methods designs can be differentiated from multimethod designs, which use multiple types of measurement (e.g., self-report and informant report questionnaires), but only one type of data (i.e., quantitative or qualitative data). Multimethod designs in personality psychology were pioneered by Campbell and Fiske's (1959) multitrait-multimethod matrix, a design and analysis strategy that uses multiple quantitative measures to examine personality traits. Though mixed methods designs were used in many classic studies in psychology (e.g., "The Robber's Cave Experiment;" Sherif, Harvey, White, Hood, & Sherif, 1961) and sociology (e.g., the "Hawthorne Effect," Roethlisberger & Dickson, 1939), mixed methods became more controversial during the "paradigm wars" of the 1970s to 1990s. During this period, qualitative researchers began to challenge the underlying philosophical assumptions of quantitative research, leading many to conclude that the two methods were incompatible (Teddlie & Tashakkori, 2003). This chapter explores the controversy and describes how developments since 1990 reconciled these philosophical differences.

Quantitative research analyzes numbers, placing emphasis on reliability, validity, generalizability, replicability, experimental or statistical control, and lack of bias (Creswell & Clark, 2006). Before the 1950s, positivism was the underlying philosophy guiding most quantitative research. Originally, positivism was an extreme viewpoint maintaining that only statistical and logical treatment of data obtained through sensory experiences are a valid source of knowledge (Barker, Pistrang, & Elliott, 2002). Positivism was widely criticized and reformulated into what is usually referred to as "postpositivism" (e.g., Popper, 1959). People who ascribe to postpositivism assume there is an objective reality beyond our senses that can be studied. They also reject the idea of incommensurability, and assume there is one true way of seeing the world. However, postpositivists acknowledge that all forms of measurement and all theories are subject to error, imprecision, and bias. Thus, the goal of science is to find the "truth" about reality, while simultaneously acknowledging this goal cannot be fully achieved because of measurement error and bias (Barker et al., 2002).

Qualitative research analyzes words or images, placing emphasis on individual meaning, context, and self-reflexivity (Creswell & Clark, 2006). Though qualitative approaches have been used in the social sciences since the early 1900s, qualitative researchers began to strongly challenge postpositivism between the 1970s and the 1990s (Teddlie & Tashakkori, 2003). Many qualitative researchers ascribed to some form of constructivism, as a reaction to the hegemony of postpositivist research. People who ascribe to constructivism reject the notion of an objective reality outside of our senses that we can study. However, this viewpoint is typically epistemological (i.e., regarding

the origin, nature, and limits of human knowledge); constructivists may hold a variety of viewpoints regarding ontology (i.e., the nature of existence). Constructivists also accept the idea of incommensurability, and assume that there are multiple, valid ways to understand the world, though they need not maintain that all viewpoints are equally valid (Barker et al., 2002). Many adherents maintain that there is no absolute truth, as all knowledge depends on subjective interpretations and perspectives (i.e., a form of relativism). Thus, rather than trying to explain whether something is "true," constructivists believe that science should focus on how arguments are constructed and to what end (e.g., biases, social agendas, historical influence, etc). In this way, quantitative and qualitative methodologies became synonymous with postpositivism and constructivism, respectively. These fundamental philosophical differences led many authors to conclude that quantitative and qualitative methods could not be integrated (Teddlie & Tashakkori, 2003). This assertion is referred to as the "incompatibility thesis," and was predicated on the notion that quantitative and qualitative methodologies necessitate opposing epistemological viewpoints.

In the decades following the 1990s, many mixed methods researchers rejected the incompatibility thesis by adopting pragmatism as a guiding philosophy. Pragmatism originated around 1870 as a way of settling metaphysical debates, but has experienced a significant revival in scholarly thinking since the 1970s (Hookway, 2008). The pragmatist maxim is succinctly outlined by Charles Sanders Peirce: "Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of those effects is the whole of our conception

of the object" (Peirce, 1923/1992, p. 132, as cited in Hookway, 2008). Phrased differently, people who ascribe to pragmatism are not concerned with objective reality or incommensurability; what matters is the practical, real-world utility of research findings, or the "instrumental truth." The purpose of science is to be useful or practical (Barker et al., 2002). Pragmatists typically spend little time contemplating epistemology, because they do not believe such debates are useful; regardless of which standpoint is true, pragmatists hold that people will still live their lives in much the same way. Thus, they believe there is little to be gained by debating epistemology, and thus have no qualms with mixing quantitative and qualitative methods (i.e., pragmatists reject the incompatibility thesis). Thus, many mixed methods researchers ascribe to a pragmatist philosophy (Creswell & Clark, 2006; Teddlie & Tashakkori, 2003).

Why Use Mixed Methods Research?

Quantitative research has clear advantages. Quantitative methods are well-suited to testing specific hypotheses, and well-established statistical methods facilitate concise summarization and quick communication of research findings. Sampling theory may allow researchers to generalize their research findings to the broader population, and a well-developed theory of reliability and validity allows researchers to measure constructs with greater precision (Lockhart, 1998). However, quantitative research tends to over-simplify data, and much of a person's ideographic complexity may be lost through quantification. Quantitative data are also subject to numerous statistical biases (e.g., method variance; Campbell & Fiske, 1959). Additionally, pressures to publish statistically significant findings lead many authors to inadvertently publish false results

by exploiting researcher degrees of freedom in analyses to reach the $p < .05$ criterion (e.g., Simmons, Nelson, & Simonsohn, 2011). Quantitative research in psychology tends to use closed-ended questions (e.g., Likert scales) and focuses narrowly on hypothesis testing, limiting serendipitous discovery and development of new theory.

Qualitative research has numerous advantages (Barker et al., 2002). For example, though narrative identity can be quantified (e.g., McAdams, Hoffman, Day, & Mansfield, 1996), much of the complexity and nuance within life narratives is lost through quantification. Qualitative research allows researchers to study individual lives in greater detail than closed-ended, quantitative data. Moreover, because participants have more freedom to respond in an authentic way, qualitative methods are an excellent source of hypothesis generation, and may lead to serendipitous discoveries. Qualitative methods also allow researchers to address research questions that are not easily quantified. For example, Mackinnon, Nosko, Pratt, and Norris (2011) asked: "What are the prototypical relationship-defining stories told about same-sex friends and romantic partners within North American culture?" (p. 595). Such a research question would be difficult to address using strictly quantitative data. Nevertheless, qualitative research has numerous limitations. Qualitative research has limited experimental control, making it difficult to answer specific hypotheses or to make compelling causal statements. Further, the labour-intensive nature of analyses typically means smaller sample sizes, which reduces the generalizability of findings. It is also harder to evaluate reliability and validity using qualitative methods, and these terms often carry different meanings for qualitative researchers – particularly those who operate from a constructivist perspective.

In a classic article, Greene, Caracelli, and Graham (1989) describe numerous

advantages of mixed methods research which researchers continue to use today (Barker et

al., 2002). Mixed methods allow researchers to find convergence and agreement across

methods (i.e., triangulation), thus reducing the impact of method variance, and increasing

convergent and divergent validity. Mixed methods also help researchers develop an

enriched, elaborate explanation of phenomena by capitalizing on the strengths of each

method (i.e., complementarity). Mixed methods permit researchers to look for

inconsistencies, contradictions, and paradoxes between methods, which can challenge

existing paradigms and promote new theoretical developments (i.e., initiation). In sum,

combining both quantitative and qualitative methods allows researchers to develop a

greater understanding of phenomena compared to the use of either in isolation (Creswell

& Clark, 2006).

Types of Mixed Methods Designs

There are three steps in designing a mixed methods study (Hanson, Creswell,

Clark, Petska, & Creswell, 2005). First, the researcher must select a theoretical lens (e.g.,

postpositivism, constructivism, pragmatism, feminism, etc.). As noted above, many

mixed methods researchers are pragmatists (Creswell & Clark, 2006); however, this

approach is not universal across all mixed methods studies (Teddlie & Tashakkori, 2003).

Second, the researcher must determine the order in which data is collected. Data can be

collected using a *sequential explanatory design* (i.e., quantitative data collected first

followed by qualitative data in a separate phase), a *sequential exploratory design* (i.e.,

qualitative data collected first followed by quantitative data in a separate phase), or a

concurrent design (i.e., both types of data collected at the same time). Third, the

researcher must decide how to prioritize the data collection (i.e., will one type of data

carry more weight in the research?). There are three possibilities: (a) qualitative data

takes priority, (b) quantitative data takes priority, or (c) both types of data are weighted

equally. Combining possibilities from steps two and three results in nine possible mixed

methods designs. A visual summary of these designs is presented in Figure 3.1. I explain

the design of my dissertation using these three steps in this chapter, under the heading

"The Present Mixed Methods Design."

Using Mixed Methods to Study Narrative Identity

There are numerous approaches to studying narrative identity, with some

approaches highlighting the importance of the individual, while others highlight the

importance of sociocultural factors (Smith & Sparkes, 2008). Consistent with work on

narrative identity in personality psychology (e.g., McAdams & Pals, 2006), my

dissertation uses a psychosocial perspective. Smith and Sparkes (2008) note that

"psychosocial perspectives have a preference to see identities or selves as a long-term

project, more situated in the person than the social situation, and orientated towards

developing unity and a coherent story across an individual's past, present, and imagined

future" (p. 13). Thus, consistent with theory presented in Chapter 1, narrative identity is

conceptualized as an essential feature of personality. In the next section, I provide

examples of research examining narrative identity from a psychosocial perspective.

My dissertation research is strongly influenced by Dan McAdams' research.

McAdams' most prominent work is on themes of redemption and contamination in North

American narratives. McAdams (2006) describes a redemption sequence as a story that begins with a negative event (e.g., a family member dies), which ultimately leads to a positive outcome (e.g., a person develops greater empathy for others). A contamination sequence represents the opposite: The story begins with a good event (e.g., receiving a gift), but is overshadowed by a negative outcome (e.g., the gift is ruined). Research examining themes of redemption and contamination typically use concurrent designs prioritizing quantitative data (QUAN + qual). Themes of redemption and contamination are assigned numerical codes (McAdams, 1998; 1999) that can be analyzed statistically. Research shows themes of redemption are positively correlated with healthy psychological functioning and themes of contamination are negatively correlated with healthy psychological functioning (Adler, Kissel, & McAdams, 2006a; Grossbaum & Bates, 2002; Lodi-Smith et al., 2009; McAdams, Reynolds, Lewis, Patten, & Bowman, 2001). McAdams also researches themes of agency and communion using similar methodologies (McAdams et al., 2006; McAdams et al., 1996), which is covered in greater detail in Chapters 4 and 5. McAdams tends to use QUAN + qual designs in journal articles (e.g., McAdams et al., 1996). However, he has occasionally published papers that report only qualitative analyses (e.g., McAdams & Logan, 2006).

Jonathan Adler is a former student of McAdams who also studies narrative identity. Adler focuses on psychotherapy narratives – that is, how people narrate their experiences during psychotherapy. Adler and McAdams (2007) conducted a retrospective qualitative study examining the autobiographical stories participants told about their experiences in psychotherapy. They found participants with high levels of subjective and

psychological well-being tended to emphasize a sense of personal agency and personal accomplishment in their psychotherapy narratives, while participants high in ego development (i.e., the degree of complexity a person uses to create meaning in life; Loevinger, 1976) tended to tell stories that were more coherent, complex, and nuanced. These results were replicated in a mixed methods study (a QUAN + qual design) which quantified themes of agency[5] and coherence in psychotherapy narratives (Adler, Skalina, & McAdams, 2008). Adler (2012) also conducted a longitudinal mixed methods (QUAN + qual) study with 12 measurement occasions across psychotherapy sessions. Data were analyzed using multilevel modeling and a qualitative case study of a single representative individual. Adler (2012) showed that agency increases over time during therapy. Moreover, increases in agency were associated with improvements in mental health, but not the reverse. In sum, Adler uses a mixture of strictly qualitative studies (Adler & McAdams, 2007) and QUAN + qual designs (Adler, 2012; Adler et al., 2008).

Michael Pratt is a narrative researcher I have collaborated with since 2008. Pratt's research program focuses on how people narrate close interpersonal relationships, and

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[5] Note that "agency" as defined in Adler et al. (2008) was coded on a 5-point ordinal scale and referred exclusively to how participants responded to psychotherapy. A participant with low agency felt powerless and at the mercy of external forces. In contrast, a person high in agency felt empowered and felt that his or her mental illness could be "defeated." This differs considerably from the way agency was measured in Chapter 4, and cannot be directly compared to the findings there.

how these stories promote generativity (i.e., concern for the next generation; Erikson, 1963). Generative adults tend to tell particular types of stories about loved ones. Pratt, Norris, Hebblethwaite, and Arnold (2008) found that adolescents (age 16) who tell stories about their parents and grandparents that are specific, interactive, and have a high degree of caring content tend to have increased generative concern at age 20. McLean and Pratt (2006) found that generative concern was associated with more sophisticated meaning making (i.e., developing greater self-insight) in turning point stories. Similarly, research I conducted with Pratt (see Mackinnon et al., 2011) found that young adults who tell stories of true love (i.e., realizing that one's romantic partner is a "soulmate") and true friendship (i.e., friends helping each other through tough times) tend to be higher in generative concern. Each of these studies uses a QUAN + qual design.

Researchers studying narrative identity in personality psychology tend to use concurrent designs, with emphasis on quantitative data (i.e., QUAN + qual). The predominant approach is to convert the qualitative data into codes that can be analyzed using quantitative statistical methods (see Boyatzis, 1998). In mixed-methods personality research, qualitative analysis – if present at all – tends to be limited to case studies to further support or augment quantitative findings (e.g., Adler, 2012). When in-depth qualitative analyses are presented, they are typically presented without quantitative analyses in multidisciplinary outlets, rather than in personality journals (e.g., Adler & McAdams, 2007; McAdams & Logan, 2006). The focus on quantitative measurement is understandable, given that most psychologists are rigorously trained in quantitative methods, but typically receive no training in qualitative methods (e.g., only 19.3% of

psychology graduate programs in the United States offer a qualitative course as an elective and only 1.8% require that students take a qualitative course; Powell, Mihalas, Onwuegbuzie, Suldo, & Daley, 2008). At a workshop on mixed methods at the 2011 Emerging Adulthood conference, the chair of the workshop noted that many prestigious journals in psychology are hesitant to publish qualitative results, partially because of this dearth of expertise (S. Moin, personal communication, October 27, 2011). Nonetheless, mixed methods research using QUAN + qual designs have been well-received by many well-regarded journals, such as the *Journal of Personality* (see Mackinnon et al., 2011) and the *Journal of Counseling Psychology* (see Hanson et al., 2005). My dissertation explores narrative identity using mixed methods in a similar way to McAdams, Adler, Pratt, and others by prioritizing quantitative data.

The Present Mixed Methods Design

Consistent with many mixed methods researchers (Creswell & Clark, 2006; Teddlie & Tashakkori, 2003), my dissertation uses pragmatism as a theoretical lens. Because pragmatism is unconcerned with epistemology, both quantitative and qualitative methods can be used to triangulate a deeper understanding of human personality without becoming mired in contentious philosophical issues. Though longitudinal data is collected at three time points, my dissertation research is best classified as a concurrent design, because both qualitative and quantitative data are collected in the same session at Waves 1 and 3. Quantitative data is prioritized by converting qualitative data into numerical codes which can be analyzed statistically. Additionally, qualitative thematic analyses (Braun & Clarke, 2006) are conducted to augment the statistical analyses

presented in Chapters 4 and 5. However, since quantitative analysis is given greater weight when interpreting the data, the present research is best classified as a QUAN + qual design.

Objectives for Chapters 4 and 5

Chapters 4 and 5 use a mixed methods design to accomplish four objectives, which will be discussed in greater detail in their respective introductions:

Objective 1: To test whether themes of agency and communion in autobiographical narratives are correlated with perfectionistic concerns and/or perfectionism cognitions (Chapters 4 and 5).

Objective 2: To test whether perfectionism cognitions mediate the relationship between perfectionistic concerns and themes of agency (Chapter 4).

Objective 3: To test whether themes of communion mediate the relationship between perfectionistic concerns and SWB (Chapter 5).

Objective 4: To provide a rich description of themes of agency and communion using qualitative analysis to better understand the quantitative relationships observed in objectives 1-3 (Chapters 4 and 5).

Sequential explanatory designs:
Quantitative data collected first

Equal priority to both data types	Priority given to qualitative data	Priority given to quantitative data
QUAN → QUAL	quan → QUAL	QUAN → qual
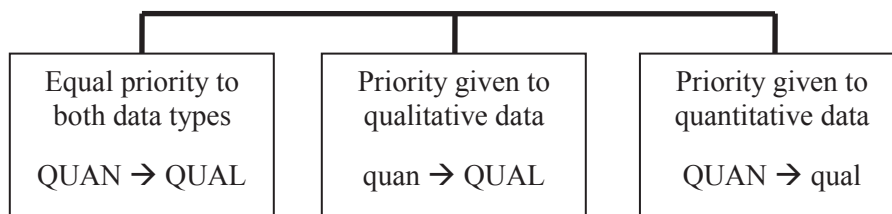
Sequential exploratory designs:
Qualitative data collected first

Equal priority to both data types	Priority given to qualitative data	Priority given to quantitative data
QUAL → QUAN	QUAL → quan	qual → QUAN
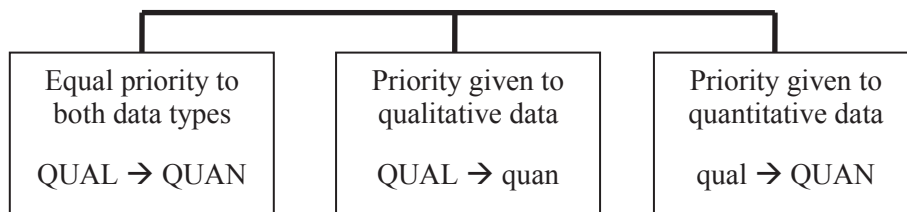
Concurrent designs:
Both types of data collected at the same time

Equal priority to both data types	Priority given to qualitative data	Priority given to quantitative data
QUAN + QUAL	quan + QUAL	QUAN + qual
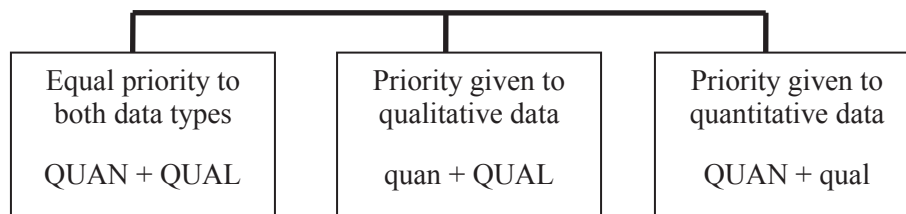
Figure 3.1. Nine types of mixed methods designs. In the notations above, capital letters indicate that either quantitative (QUAN) or qualitative (QUAL) data were prioritized. Similarly, lower-case letters indicate that either quantitative (quan) or qualitative (qual) data were given lower priority. Plus signs (+) indicate concurrent data collection, and arrows (→) indicate sequential data collection.

Chapter 4: Perfectionism and Agency in Autobiographical Narratives:

A Longitudinal Mixed Methods Analysis

Sean Mackinnon developed the research questions and methodology for the
present study, including (but not limited to) collecting and/or creating all materials
required to run the study (e.g., questionnaires, interview protocols, etc.), acquiring an
ethics review at Dalhousie, and acquiring $10,000 in funding from the Dalhousie
University Department of Psychiatry Research Fund. Sean was directly responsible for
coordinating a team of research assistants and was directly involved in primary data
collection for this study, and he completed all of the literature review and writing for this
manuscript, as well as both the quantitative and qualitative analyses. He received editorial
feedback on the writing from the study's co-authors (i.e., Sean's dissertation supervisor,
Dr. Simon Sherry and collaborator Dr. Michael Pratt) and assistance with general
copyediting from paid research assistants Matt MacNeil (BA) and Courtney Heisler
(BA). This manuscript was submitted for peer review to the *Journal of Personality* on
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Perfectionism and Agency in Autobiographical Narratives:

A Longitudinal Mixed Methods Analysis

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Abstract

Objective: This study tested perfectionistic personality as a dynamic system, proposing that trait perfectionism (perfectionistic concerns) leads to a maladaptive cognitive style (perfectionism cognitions), which in turn leads to agentic themes in autobiographical memories. The nature of agency as expressed in autobiographical narratives was also explored using qualitative analysis.

Method: A sample of 127 emerging adults (aged 18-25 years) beginning university for the first time were recruited (78% female; 81% Caucasian). This study involved a 2-wave, 130-day longitudinal design with both quantitative and qualitative components. At both waves, participants completed questionnaire measures of perfectionism and themes of agency were coded from semi-structured interviews asking students to describe four key events in their life stories.

Results: Quantitative analyses showed that perfectionistic concerns and perfectionism cognitions were positively correlated with agency. Perfectionism cognitions mediated the relationship between perfectionistic concerns and agency. A qualitative thematic analysis revealed that agentic stories typically focused on performance-related concerns, with undertones of self-doubt and high standards.

Conclusions: This study is the first to use mixed methods to study perfectionism as a dynamic system. By conceptualizing perfectionistic personality as a multifaceted, integrated system, researchers may develop a greater understanding of how perfectionistic personality confers risk for psychological problems.

Keywords: perfectionism; cognitions; agency; life story; mixed methods

Perfectionism and Agency in Autobiographical Narratives:

A Longitudinal Mixed Methods Analysis

Most personality psychologists are broadly interested in human individuality, but they often disagree on theory. Personality research is informed by several grand theories, including psychodynamic, cognitive-behavioural, interpersonal, behavioural, and biological theories (McAdams, 2006b). Though some researchers argue true theoretical integration is impossible (Wood & Joseph, 2007), others believe theoretical integration is essential for research in personality psychology to progress (McAdams & Pals, 2006). One important task for integrative theories is to answer the question: "What is personality?"

Personality traits are the most basic level of knowing a person. Personality traits refer to temporally stable attributes and behavioural tendencies that remain consistent across contexts. Though definitions and terms vary slightly across researchers, most theoretical models of personality incorporate the idea of personality traits in some way (e.g., Cantor, 1990; McAdams & Pals, 2006; McCrae & Costa, 1999; Tyrer, 2010). However, personality traits alone cannot fully describe human individuality. People change. Even if personality traits are mostly "set like plaster" (Costa & McCrae, 1994), there are other aspects of people that *do* change, and *do* depend on context. To develop a full understanding of individual people, these more fluid, dynamic aspects of personality are also important. In general, there has been less agreement on how to define and name this level of personality. Consistent with McAdams and Pals (2006), we prefer the term "characteristic adaptations," and define characteristic adaptations as the wide variety of

cognitive and behavioural strategies used by people to deal with everyday demands of life. Other models focus on the interaction between the environment and personality traits (McCrae & Costa, 1999)[6], decomposing variance into state-like and trait-like variance (Fleeson & Leicht, 2006), or the behavioural choices people make (Cantor, 1990). Though theorists differ in opinion, most agree personality traits alone are insufficient to fully know a person. To develop a full understanding of people, we must know both their personality traits and how they characteristically adapt to their environment.

Narrative identity is proposed as a third level of personality by McAdams and Pals (2006). Narrative identity is the most idiographic aspect of personality, and includes autobiographical stories that provide a person with personal meaning, identity, unity, and purpose. Research using mixed quantitative and qualitative designs has identified aspects of a person's autobiographical narrative that can be quantified, such as themes of agency, redemption, communion, and personal growth (Bauer & McAdams, 2004; McAdams, 2006a; McAdams et al., 2006). Evidence also suggests these quantifiable aspects of narrative identity are tied to personality traits and characteristic adaptations (e.g., McAdams et al., 2004).

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[6] Though this topic is beyond the scope of this paper, readers interested in the possible environmental factors that moderate the relationship between perfectionism and outcomes might review research on specific vulnerability and diathesis-stress models of perfectionism (e.g., Joiner & Schmidt, 1995).

Based on these broad theories, we investigated the construct of perfectionism at all three levels of personality. We tested the links among perfectionistic traits, perfectionistic adaptations, and perfectionistic identity using a longitudinal mixed methods design in order to provide the most comprehensive picture to date of what it really means to be a "perfectionist."

Traits: Perfectionistic Concerns

At the personality trait level, the present study focuses on a maladaptive form of perfectionism known as perfectionistic concerns (Dunkley et al., 2006). Perfectionistic concerns include doubts about personal abilities, extreme concern over mistakes and being evaluated, and strong negative reactions to perceived failure. Evidence suggests perfectionistic concerns have strong test-retest reliability (e.g., Graham et al., 2010; Hewitt & Flett, 1991). Perfectionistic concerns are not seen as context-dependant; they are a constellation of traits that influence thoughts, behaviours, and emotions across contexts (Hewitt, Flett, Besser et al., 2003).

Though there are other dimensions of trait perfectionism such as perfectionistic strivings (e.g., rigidly demanding perfection of oneself) and other-oriented perfectionism (e.g., demanding perfection from others), research tends to show these dimensions do not predict additional variance in a wide range of outcomes after controlling for perfectionistic concerns (Dunkley et al., 2000; Graham et al., 2010). Thus, we focused on perfectionistic concerns because research shows this dimension has the most predictive validity.

Characteristic Adaptations: Perfectionism Cognitions

Not all aspects of perfectionism are personality traits. Perfectionism cognitions focus on the frequency of automatic thoughts involving themes of performance-related perfection (e.g., "I have to be the best"; "I need to do better"; "I should be doing more") over the past week (Flett et al., 1998). Perfectionism cognitions are linked to an increased tendency to ruminate about psychological distress and a selective tendency to recall negative events (Flett, Madorsky, Hewitt, & Heisel, 2002). Flett et al. (2007) define perfectionism cognitions as a characteristic adaptation, by describing them as "more 'state-like' than existing trait measures, and [reflecting] the fact that automatic thoughts, relative to dysfunctional attitudes and other personality vulnerabilities, are believed to have more of a surface level and situation-specific nature" (p. 257). Consistent with this conceptualization, test-retest reliabilities tend to be somewhat lower than those observed with perfectionistic concerns (e.g., Flett et al., 1998). Perfectionism cognitions are thought to arise when participants high in perfectionistic concerns sense a discrepancy between their actual performance and their idealized unrealistic standards for their own performance (Flett et al., 1998). Perfectionism cognitions may be seen as a cognitive manifestation of perfectionism that arises from perfectionistic concerns after actual or perceived performance failures.

Narrative Identity: Agency

There is little qualitative or mixed methods research on the narrative identity of perfectionists. As a starting point, it makes sense to examine themes of agency, which is one broad construct to emerge from narrative research. Agency is a construct emerging

from Bakan's (1966) work that was adapted into a coding scheme for life narratives by McAdams et al. (1996). In this way, the qualitative data can be converted into quantitative codes for data analysis. Agency represents the self as an individual, typically manifested in narratives as themes of achievement, power, status, and self-mastery. In prior work, themes of agency were positively associated with power motivation (McAdams et al., 1996), positively associated with conscientiousness (i.e., the tendency to be self-disciplined and organized), and negatively associated with neuroticism (i.e., the tendency to experience negative affect) in student populations (McAdams et al., 2004). Themes of agency are inconsistently correlated with psychological well-being, with some studies showing null relationships (Grossbaum & Bates, 2002) while others show small positive relationships (Bauer & McAdams, 2004). Agency has statistically significant test-retest reliability over 3-month ($r = .35$) and 3-year ($r = .35$) periods (McAdams et al., 2006), suggesting these variables have at least some modicum of consistency over time.

Narrative Identity of Perfectionists: Theory and Evidence

A review of theory and qualitative research on perfectionism suggests themes of agency will be central to the narrative identity of perfectionists. Perfectionistic concerns are centrally focused on performance-related concerns – domains central to the construct of agency. Hallmarks of perfectionistic concerns are being intolerant of one's own mistakes, perceiving that others demand perfect performance, and persistent doubts about the quality of one's performance (Frost et al., 1990; Hewitt & Flett, 1991). In addition to these performance-related concerns, perfectionistic people also tend to be extrinsically motivated. People high in perfectionistic concerns are motivated to perform at high

levels, but typically do so because of a desire for recognition from others, rather than intrinsic value assigned to the task itself (Mills & Blankstein, 2000). Indeed, research shows perfectionistic personality is associated with performance-contingent self-worth in school and sports domains (McArdle, 2010) and, in extreme cases, highly perfectionistic people may even commit suicide after a perceived failure (Blatt, 1995). This suggests people high in perfectionistic concerns are likely to place a great deal of importance on agentic concerns in their own life narratives, albeit for unhealthy reasons.

Qualitative research on perfectionists tends to support the notion of increased agency in autobiographical narratives. Slaney and Ashby (1996) recruited a sample of 37 people who considered themselves to be "perfectionists" or were nominated as perfectionists by others. In a semi-structured interview, participants described themes of high standards, achievement, and performance as the concepts most central to perfectionism. There were also themes of distress present throughout the interviews. Despite this distress, none of the participants in this study said they were willing to give up their perfectionistic tendencies. Most valued their perfectionism as a purported tool to help them achieve at high levels. In another qualitative study, Merrell, Hannah, Van Arsdale, Buman, and Rice (2011) recruited a sample of 14 university students classified as maladaptive perfectionists using a cutoff score of 42 on the discrepancies subscale of the Almost Perfect Scale–Revised (see Rice & Ashby, 2007). Participants wrote a series of essays about their "very deepest thoughts and feelings about stress, perfectionism, performance expectations, and coping" (Merell et al., 2011, p. 515). Common themes included stress resulting from feelings of academic inadequacy, failing to meet

unrealistically high academic standards, avoidant coping (e.g., procrastination, skipping class) in response to perceived failures, and relationship conflict.

Rice, Blair, Castro, Cohen, and Hood (2003) conducted a qualitative analysis on a sample of four maladaptive perfectionists, two adaptive perfectionists, and three non-perfectionists. Maladaptive perfectionists were defined as people in the upper third of the distribution on concern over mistakes and personal standards subscales of the Multidimensional Perfectionism Scale (Frost et al., 1990). Non-perfectionists were in the bottom third of the distribution on both subscales, and adaptive perfectionists were defined as people in the upper third of the distribution on personal standards only. When describing perfectionism in a short interview, themes of chronic distress and dissatisfaction with performance, interpersonal problems, a desire to perform at high levels in work and school, inflexible black-and-white thinking, a need for achievement and recognition, and obsessive-compulsive personality disorder characteristics were identified. Schuler (2000) interviewed a sample of 20 perfectionistic but gifted middle school students. Perfectionists were identified using cluster analysis on an adapted version of Frost et al.'s (1990) Multidimensional Perfectionism Scale. A cluster of "neurotic perfectionists" were identified; these participants scored high on concern over mistakes, personal standards, parental expectations, doubts about actions, and perceived parental criticism. The main themes identified among the neurotic perfectionists in this study were (a) inability to tolerate mistakes; (b) perceptions that others (particularly parents) require perfection; and (c) perceived criticism from others as a result of performance failure. All students envisioned their future in highly agentic terms – even at

this young age, students focused on getting good grades with career goals in prestigious jobs requiring high levels of education. Together, these qualitative studies suggest that perfectionistic people narrate their lives with strong themes of achievement and work-related performance, broadly consistent with a maladaptive form of agency.

Though Riley and Shafran (2005) use a unidimensional, cognitive measure of perfectionism that differs from perfectionistic concerns (Shafran, Cooper, & Fairburn, 2002; see Hewitt, Flett, Besser, et al., 2003 for a critique), it correlates strongly ($r = .51$) with socially prescribed perfectionism, suggesting it measures a broadly similar construct (Chang & Sanna, 2012). Thus, Riley and Shafran's (2005) qualitative analysis of "clinical perfectionists" remains informative given the paucity of qualitative perfectionism research. A sample of 15 participants with features of clinical perfectionism were identified based on the assessment of two clinical psychologists. Three core themes were identified in interview data: (a) self-imposed dysfunctional standards; (b) continual striving for achievement; and (c) achievement striving in spite of adverse consequences. Rigid, black-and-white cognitions were typical among most perfectionists, and most had a pronounced fear of failure. Qualitative data suggest the primary motivation for achievement striving was fear of failure, and the self-criticism that follows failure. This research again reveals a relentless focus on performance and achievement striving, at the expense of most other areas of a perfectionist's life (e.g., happiness or close relationships).

Limitations of Past Work

Quantitative research aims to simplify, condense, and generalize phenomena of interest and is of central importance for hypothesis testing in personality research. However, these important strengths come at the risk of over-simplifying the complexity of an individual's personality. To best understand people, we also need to understand nuances inherent in people in addition to general trends. Qualitative research is a useful tool for understanding how individuals understand and make sense of their subjective worlds. However, it is frequently difficult – and sometimes philosophically inappropriate for qualitative approaches which reject positivism (e.g., Strauss & Corbin, 1990) – to test hypotheses with qualitative methods, and the results can rarely be generalized to the broader population (Barker et al., 2002). To overcome limitations inherent in both methods, some researchers advocate use of mixed methods designs, which incorporate both quantitative and qualitative components into a single design (Hanson et al., 2005). Mixed methods designs are used for numerous purposes, including triangulation (i.e., finding convergence and agreement across methods), and complementarity (i.e., developing an enriched, elaborated explanation; Barker et al., 2002). To our knowledge, there is only a single mixed methods study on perfectionism (Rice et al., 2003). The small sample used for the qualitative component of this study limits its generalizability. The present study uses a longitudinal mixed methods design with 127 participants. It prioritizes quantitative data, and uses qualitative data to enhance and elaborate on quantitative results (a QUAN + qual design; Hanson et al., 2005). This design overcomes

the limitations of mono-method designs, and has the potential to incrementally advance our understanding of perfectionism.

In addition, few studies of perfectionism or life narratives use a longitudinal approach. Longitudinal research can make stronger inferences about potential causality when compared to cross-sectional research, particularly during transition periods where change is expected (Little et al., 2007). The present study uses a 2-wave, 130-day design which follows freshmen university students across their first semester at university. This transition period is associated with personality change in emerging adults (Lodi-Smith et al., 2009). The transition to university is linked to heightened stress, increased workload, and frequent performance evaluation (Hicks & Heastie, 2008), making it an ideal transition period to examine changes in perfectionistic cognitions and agency over time. We also use a 2-wave longitudinal panel model to test mediation hypotheses, which is among the most stringent methods available to test mediation (Little et al., 2007). Though not as stringent as designs which use 3 or more waves, this design is still considered to be an improvement upon cross-sectional tests of mediation (Cole & Maxwell, 2003).

Despite calls for integrative models of personality involving all three levels of personality (e.g., McAdams & Pals, 2006), few studies incorporate personality traits, characteristic adaptations, and narrative identity into a single study. This lack of integration is generally true of personality research as a whole, and particularly true of research studying perfectionism. The present research offers a novel and integrative model of perfectionism that incorporates perfectionistic concerns, perfectionism cognitions, and narrative identity.

Rationale and Hypotheses

Consistent with prior theory, people high in perfectionistic concerns and perfectionism cognitions appear to place an unhealthy emphasis on agentic concerns such as self-control and extrinsically motivated performance (Flett et al., 1998; Frost et al., 1990; Mills & Blankstein, 2000). Thus, our first hypothesis is simply that both perfectionistic concerns and perfectionism cognitions will be positively associated with agency as coded from life narratives.

McCrae and Costa's (1999) model of personality is similar to McAdams and Pals' (2006), but also makes predictions about the directionality of relationships between different levels of personality. McCrae and Costa assert personality traits (perfectionistic concerns), will predict increases in characteristic adaptations (perfectionism cognitions), which in turn will predict self-concept in the form of narrative identity (agency). Consistent with this notion, perfectionism cognitions are conceptualized as a state-like cognitive feature of trait perfectionism and are thought to emerge more frequently among people with trait perfectionism (Flett et al., 2007). Moreover, perfectionistic concerns are highly stable over time (Graham et al., 2010), perfectionistic cognitions (Flett et al., 1998) are somewhat less stable over time, and agency (McAdams et al., 2006) is much less stable over time. Thus, our second hypothesis is that perfectionism cognitions will mediate the relationship between perfectionistic concerns and themes of agency in life narratives.

In the present study, we also examined themes of agency in autobiographical narratives about key scenes during freshman students' transition to university. This

approach produced an enormous amount of qualitative data. While an in-depth qualitative analysis of all this data is beyond the scope of the present study, probing the nature of agency themes in a subset of these stories does allow for a more nuanced, comprehensive understanding of the subjective experiences of these emerging adults. To better understand the findings related to hypotheses 1 and 2, we must be able to clearly *describe* the content of the narratives. In this way, we will be able to see what sort of agentic stories are told by transitioning university students, and will be better able to understand what the quantitative relationships between perfectionism and agency represent. We will attempt to provide rich descriptions of agency themes using thematic analysis to answer one broad research question: What are the prototypical agentic stories told by emerging adults undergoing a transition to university for the first time?

Method

Participants

Participants were freshman students ($N = 127$; 99 women; 28 men) attending university for the first time starting September 2010. Participants ranged from 18 to 24 years old ($M = 18.31$; $SD = 0.80$). Most participants (84.92%; $N = 107$) graduated high school in spring 2010; at Wave 1, 36.8% ($N = 46$) were in a dating romantic relationship, and 31.5% ($N = 40$) were employed at Wave 1. Participants self-identified as Caucasian (81.1%), Asian (5.5%), Black (3.9%), Arabic (3.9%), or "other" (5.6%). This sample is similar to other samples of undergraduates recruited at Dalhousie University (Graham et al., 2010).

Procedure

The study was approved by the social sciences research ethics board at Dalhousie University. Participants were recruited by posting flyers ($N = 56$), class announcements ($N = 54$), the psychology department subject pool ($N = 24$), and word-of-mouth ($N = 14$). All participants were screened to ensure they were first-year students between ages 18-25 years attending university for the first time in September 2010. However, the oldest actual participant was 24 years old, so the observed range in age was only 18-24 years. Eligible participants completed a semi-structured guided autobiography interview (McAdams, 1997) followed by pen-and-paper questionnaires (i.e., perfectionistic concerns and perfectionism cognitions) at each of two waves. Questionnaires were the same across waves. Questionnaires are presented in full in Appendix A. Participants were debriefed at the end of Wave 2. Participants completed Wave 1 within the first 50 days of fall term and were scheduled to complete Wave 2 at the beginning of winter term (130 days after Wave 1). A combination of phone reminders, email reminders, and incentives (3 bonus points and $25 for psychology students; $55 for non-psychology students) were given to participants to improve protocol compliance. All 127 participants (100.0%) completed Wave 1, and 115 participants (90.6%) completed Wave 2. On average, Wave 2 occurred 133.18 ($SD = 8.08$) days after Wave 1.

Materials

Guided autobiography interview. Participants completed a semi-structured interview administered by trained research assistants at both waves. The interviewer asked participants to verbally describe four "key scenes" in their own life story. The High

Point is an episode involving intense positive emotion that stands out as the highest, most wonderful moment within the reporting period. The Low Point is an episode involving intense negative emotion that stands out as the worst, most unpleasant moment within the reporting period. The Turning Point is an episode in which a participant undergoes a large or substantial change in self-understanding within the reporting period. Finally, participants were also asked to provide one Other Event "that stands out in your memory as being especially important or significant in some way" within the reporting period. Participants also provided key scenes on morality, friendship, romantic relationships, parents, and one other important person. These additional scenes are not designed to assess agency, and have not been coded for agency in prior work (e.g., McAdams et al., 1996); thus, they were not analyzed in this study in order to keep results broadly consistent with past research. For each key scene, participants were asked to describe what happened, where it happened, who was involved, what they did, what they were thinking and feeling, what impact this experience may have had upon them, and what this experience says about who they were or are as a person. Each key scene needed to be unique; participants were not permitted to tell the same story twice, consistent with prior research (e.g., McAdams et al., 2006). Asking for distinct stories prevents the exact same story from being coded more than once for agency. Interviewers were trained to prompt participants for additional detail when needed (e.g., "What were you thinking and feeling at that time?"). Our interview was derived from McAdams' (1997) Guided Autobiography, and variations of this procedure were used in numerous published studies (e.g., Mackinnon et al., 2011; McAdams et al., 2006). Our Guided Autobiography

Interview was audio-recorded and transcribed at a later date by trained assistants. A subset of transcripts ($N = 60$) was double-checked for accuracy, and transcription errors were minimal. The guided autobiography interview is presented in Appendix B. Transcriptionist instructions are located in Appendix C. A sample interview transcript is presented in Appendix D.

Participants were asked to focus on key scenes that occurred during summer vacation (from May 1 to August 31) at Wave 1, and on key scenes from their first semester at university (from September 1 to December 31) at Wave 2. Thus, participants could not tell the same story twice. This procedure differs from past work, which typically allows participants to tell the same story at both waves (e.g., McAdams et al., 2006). We used this modified procedure to minimize temporal confounding for our longitudinal analyses.

Agency. Themes of agency were coded within each key scene using McAdams et al.'s (1996) coding scheme. Each key scene was coded for four agency themes: Achievement/Responsibility (i.e., overcoming obstacles to achieve instrumental goals), Status/Victory (i.e., winning and achieving heightened status), Power/Impact (i.e., asserting oneself in a powerful way), and Self-Mastery (i.e., striving to control or perfect the self). Total scores for agency are calculated by summing themes across all four key scenes (e.g., McAdams et al., 2006), so total scores can range from 0 to 16.

The first author and a trained research assistant first coded 400 key scenes (50 of each scene at both waves) for agency to calculate inter-rater reliability. AC1 is a statistic used to assess inter-rater reliability in dichotomous data, which addresses the limitations

of Cohen's kappa (see Gwet, 2002). Intraclass correlations (ICCs) are a measure of inter-

rater reliability used with interval-level data. Inter-rater reliability was moderate to

excellent when examined for each individual theme (AC1s ranged from .75 to 1.0) and

for total scores (ICCs ranged from .74 to .87). Once inter-rater reliability was established,

the trained research assistant coded the remaining key scenes for agency. This assistant

was blind to hypotheses and questionnaire results and consulted regularly with the first

author. Research supports the reliability and validity of the agency coding scheme (e.g.,

McAdams et al., 1996; McAdams et al., 2006). The agency coding scheme is presented in

Appendix E.

Word count. Transcripts were purged of all interviewer questions and prompts,

and then the number of words per key scene was calculated using a word processor. A

single measure for word count was calculated by averaging across all eight stories (four

at each wave). Word counts were highly correlated across stories within each wave (*r*s

from .53 to .70) and had moderate test-retest reliability within stories (*r*s from .28 to .40),

supporting our choice to aggregate word count into a single variable. In total, interviews

with participants in the present study generated 376,995 words, corresponding to about

1508 pages of double-spaced text.

Perfectionistic concerns. Three short-form subscales developed by Cox, Enns,

and Clara (2002) were used to measure perfectionistic concerns: The 5-item socially

prescribed perfectionism subscale ("The better I do, the better I am expected to do";

Hewitt & Flett, 1991), the 5-item concern over mistakes subscale ("If I fail at

work/school, I am a failure as a person"; Frost et al., 1990), and the 4-item doubts about

actions subscale ("Even when I do something very carefully, I often feel that it is not quite right"; Frost et al., 1990). Short forms were used to reduce participant burden. Subscales were standardized and summed into a single measure of perfectionistic concerns (Graham et al., 2010). Participants responded to socially prescribed perfectionism items using 7-point scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Participants responded to concern over mistakes and doubts about actions items using 5-point scales ranging from 1 (*strongly disagree)* to 5 (*strongly agree*). A long-term timeframe ("during the past several years") was used, consistent with our conceptualization of perfectionistic concerns as a personality trait. This measure is reliable and valid (e.g., Graham et al., 2010).

Perfectionism cognitions. Perfectionism cognitions were measured using Flett et al.'s (1998) 25-item Perfectionism Cognitions Inventory. Participants were provided with a list of thoughts, and were asked to indicate how frequently each of the thoughts occurred during the past seven days. This timeframe is consistent with our conceptualization of perfectionism cognitions as a characteristic adaptation. A sample item is "I should be perfect." Participants responded to items on the perfectionism cognitions inventory using a 5-point scale ranging from 0 (*not at all*) to 4 (*all of the time*). Total scores were calculated by summing all items together. Research supports the reliability and validity of this measure, and suggests it is a unique construct distinct from perfectionistic concerns (e.g., Flett et al., 2007).

Data Analytic Strategy

For quantitative analyses, we first examined simple descriptive statistics and bivariate correlations. Hypotheses were tested using path analysis in Mplus 6.0 (Muthén & Muthén, 2010). MLR estimation was used, as it is robust to violations of multivariate normality. A well-fitting path model has a comparative fit index (CFI) and a Tucker-Lewis index (TLI) around .95 and a root-mean-square error of approximation (RMSEA) around .06 (Kline, 2005). RMSEA values are reported with 90% confidence intervals (90% CI).

We used a two-wave panel model for testing mediation (see Figure 4.1; Cole & Maxwell, 2003; Little et al., 2007). This approach allows researchers to test for rank-order change in outcomes over time by controlling for baseline levels of outcome variables. Mediation has occurred if the indirect effect (i.e., the multiplicative product of the a-path and b-path in Figure 4.1) is statistically significant. Bias-corrected bootstrapping with 20,000 resamples was used as a non-parametric alternative to testing statistical significance of the indirect effect. If the 95% bootstrapped confidence interval does not include zero, mediation has occurred (Little et al., 2007). We also specified a correlated error term between perfectionistic concerns and perfectionism cognitions to account for method variance (i.e., both measures involved self-report questionnaires; Cole & Maxwell, 2003).[7] In supplementary path analyses, average word count per key

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[7] For clarity, readers should note that this approach to correlated error was used in all path analytic models presented in this dissertation.

scene and relationship status were entered separately as covariates by correlating them with all exogenous variables with a direct effect to all endogenous variables.

We supplemented the quantitative analysis with a qualitative analysis using Braun and Clarke's (2006) approach to thematic analysis. This analysis was conducted by the first author. Thematic analysis is a qualitative method used for identifying patterns (i.e., themes) within written or spoken data. The first author began by familiarizing himself with the data by reading all transcripts closely. Next, the transcripts were split up into *data items,* which are smaller sections of text that are given equal weighting in the analysis. In the present study, the data items included only sections of text coded for themes of agency, which were highlighted during the coding process outlined by McAdams et al. (1996). There were 421 data items for agency. Next, the first author assigned each data item a short set of codes that summarized its content in an open-ended manner. After multiple passes through the data, the first author began to collate these diverse codes into more holistic themes that summarized the data in a meaningful and complete way. This process was repeated until a comprehensive set of themes was produced that can fully account for every data item. This analysis allowed us to examine the nature of agentic themes in this dataset in greater detail, which helped explain the quantitative relationships between perfectionistic concerns, perfectionism cognitions, and agency in this dataset.

Results

Quantitative Analyses

Preliminary analyses. Overall, 9.77% of data were missing, with covariance

coverage ranging from .83 to 1.0. Missing data were handled using pairwise deletion for

descriptive statistics and bivariate correlations in SPSS 17.0 and full information

maximum likelihood estimation in Mplus 6.0 (Muthén & Muthén, 2010) for path

analyses.

Means, standard deviations, alpha reliabilities and intraclass correlations appear in

Table 4.1 and bivariate correlations appear in Table 4.2. Means fell within one standard

deviation of means from past studies of undergraduates (Graham et al., 2010; McAdams

et al., 2006), suggesting these results are broadly comparable to other undergraduate

samples.[8] Self-mastery themes ($N = 236$) were the most common, followed by

achievement/responsibility ($N = 114$), status/victory ($N = 51$), and power/impact ($N =$

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[8] We also statistically compared the Wave 1 means in the present study to means

reported in other undergraduate samples (Graham et al., 2010; Flett et al., 1998;

McAdams et al., 2006; McGrath et al., 2012). To quantify the degree of difference in

means between the present study and prior research, we used Cohen's *d* as a measure of

effect size and used independent t-tests to compare means across studies. Means for all

variables were not significantly different ($p > .05$) from prior research (*d*s range from -.11

to .25). These analyses suggest our means are broadly comparable to other undergraduate

samples.

20). Alpha reliabilities for questionnaires ranged from .90 to .94, and test-retest

correlations ranged from .76 to .90, supporting their reliability[9]. Inter-rater reliability for

agency ranged from .74 to .87, supporting its reliability. The test-retest correlation was a

non-significant trend in the expected direction, $r = .19$, $p = .056$. Research (Mackinnon,

2012) shows that, while there is a significant correlation between high school and

postsecondary grades, the effect size of this relationship is small. Because there is little

correspondence between high-school grades (the focus of many Wave 1 stories) and

university grades (the focus of many Wave 2 stories), and because so many of the

achievement/responsibility themes focused on school performance, it seemed likely that

test-retest correlations would be attenuated. When test-retest reliabilities are re-

calculated for agency omitting achievement/responsibility themes, the effect size

increases, $r = .30$, $p = .002$.

In Table 4.2, perfectionistic concerns and perfectionism cognitions were strongly

correlated across waves (rs from .60 to .70). Agency was significantly correlated with

perfectionistic concerns and perfectionism cognitions across waves (rs from .22 to .29),

supporting hypothesis 1. One exception was the nonsignificant correlation between Wave

1 agency and Wave 2 perfectionistic concerns ($r = .14$, $p = .14$). Being in a romantic

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[9] Note also that perfectionism cognitions demonstrates a small amount of mean-

level change over time when analyzed using a repeated measures ANOVA, $F(1,114) =$

4.20, $p = .043$, partial $\eta^2 = .035$, suggesting this construct is at least somewhat malleable

over time, consistent with its conceptualization as a characteristic (mal)adaptation.

relationship at Wave 1 was negatively associated with perfectionism cognitions at both

waves (r = .20). Age, employment status, and ethnicity were not related to variables in

our model and are not commented on further.

Path analyses. A two-wave panel model for testing mediation was used to test

hypothesis 2 (see Figure 4.2). The direct effect from perfectionistic concerns to agency (β

= .13, p = .28) was nonsignificant, and was not included in the final model. The model

predicting agency in Figure 4.2 fits the data well: $\chi^2(N = 127) = 1.54$, p = .46; χ^2/df =

0.77; CFI = 1.00; TLI = 1.00; RMSEA = .00 (90% CI: .00, .17). The bias-corrected,

bootstrapped indirect effect from perfectionistic concerns to agency through

perfectionism cognitions was significant, 95% CI [.0006, .015], supporting our

hypotheses.[10] Readers should note that the absolute value of this confidence interval has

little inherent meaning, because perfectionistic concerns and SWB were calculated by

standardizing and summing subscales. Thus, the low absolute values observed in the

confidence interval above do not necessarily imply a weak effect.

The path analyses were re-calculated using word count and relationship status as

covariates in separate analyses. These variables were added as covariates in a post-hoc

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[10] A reverse mediation model (agency to perfectionism cognitions to

perfectionistic concerns) was not supported. The paths from agency to perfectionism

cognitions (β = .06, p = .27) and from perfectionism cognitions to perfectionistic

concerns (β = .08, p = .14) were nonsignificant. This supports the proposed directionality

of hypotheses in Figure 4.2.

fashion, after significant relationships were observed with study variables at the zero-order level. The individual paths and indirect effects remained virtually unchanged from the analyses presented in Figure 4.2 when covariates were added, and levels of statistical significance using the $p < .05$ criterion remained unchanged. Word count was significantly correlated with perfectionistic concerns ($r = .18$, $p = .05$) and perfectionism cognitions ($r = .22$, $p = .03$) at Wave 1 in these path models. Also, being in a romantic relationship was negatively associated with perfectionistic concerns ($r = -.17$, $p = .05$) and perfectionism cognitions ($r = -.20$, $p = .01$) at Wave 1. In sum, results do not change in a meaningful way with the addition of these covariates. I also examined whether perfectionism moderated the agency-SWB relationship. This analysis was non-significant ($ps > .05$), and is not reported further.

Thematic Analysis

Within each of the four agency themes, thematic analysis was conducted to describe the content of these agency themes in greater detail. A summary of this analysis, including frequencies, definitions, and sample quotes is given in Table 4.3. We also included the participants' percentile rank on perfectionism cognitions at that wave as a point of reference for interpreting quotations (e.g., "70th PCI percentile" indicates the participant has a higher score on perfectionism cognitions than 70% of our sample).

Achievement/Responsibility. The most common achievement/responsibility subtheme identified was *grade-focused performance* (see Table 4.2). In this story, participants start in a negative state; for example, they might express doubt about their performance ability, experience stress from constant school pressures, or report a history

of getting poor grades in school. Following this negative state, the participant receives a good grade in a course or course component (e.g., an exam), typically making the participant feel better. In most cases, the participant also highlights the importance of working hard to get good grades. On the surface, these stories appear to resemble McAdams' (2006) redemptive script – a prototypical North American story associated with positive psychological adjustment – as stories end positively and participants are typically proud of their accomplishments. However, a close reading also suggests participants' self-esteem is contingent on performance, a feature strongly associated with perfectionistic concerns (McArdle, 2010). Participants who tell these stories appear extrinsically motivated, hold very high standards, and worry about the consequences of poor performance:

> "I'm used to being an all A student [...] I started looking back and seeing all the things that I was damaging because of [my poor grades] because then I'd lose my chance at the scholarship [...] So I started to study more and I ended up getting A's and B's. [...] I don't like to fail. I like to be my best and if I do something and it goes wrong, then [...] I'll try to change it to make it better" (Wave 1, Turning Point, 65th PCI percentile).

The *university transition* subtheme focused on the transition from high school to university rather than grades (see Table 4.3). This type of story occurred almost exclusively at Wave 1, because students narrated a period of time at Wave 1 (May-August) that frequently included high-school graduation and moving to university. A significant portion of participants described achievements in non school-domains. In

general, these stories resembled the grade-focused stories, except instead of focusing on grades, participants described creative, athletic, or employment achievements, or acquiring a drivers' licence (see Table 4.3).

   Status/Victory. At Wave 1, the most common status/victory theme was *performance award* (see Table 4.3). In this subtheme, students talk about winning an award for their performance in an academic, athletic, or employment domain (e.g., scholarships, athlete of the year, etc.). This award is directly a result of the participant's performance in one of these domains, and is typically awarded in a public venue. In these stories, the focus is on the public recognition of their accomplishments, and always implicitly or explicitly implies competition with others (e.g., winning a scholarship necessitates that someone else cannot win it). Interestingly, these stories are often riddled with self-doubt – a hallmark of perfectionistic concerns and perfectionism cognitions – with students typically expressing incredulity:

   "...the awards that I accumulated, which were a bit of a surprise to me [...] [I was]

   not, at least, by my estimation, the highest marking student. I would be up there,

   but I wasn't at the top [...] I suppose I could say that the other big character would

   have been the competition who I just presumed was going to win [...] she was just

   seemingly smarter than me; didn't speak as much, if at all, but you know the type,

   sort of quiet and who does everything perfectly" (Wave 1, High Point, 76th PCI

   percentile).

Like the university transition themes for achievement/responsibility, this kind of story was likely a function of the May-August timeframe; performance awards are typically

given at the end of a school year in Canada. The remaining status/victory themes were roughly split between sports victories (e.g., winning a sports tournament or becoming part of a sports team) or gaining employment (e.g., acquiring a job after an interview; see Table 4.3). These two subthemes were always competitive and extrinsically motivated – participants defeat others in a performance-related domain in order to be recognized and/or rewarded by others.

Power/Impact. Power/impact themes were comparatively rare, and were best described by a single subtheme called *controlling others*. In this subtheme, participants attempt to control the behaviour or attitudes of other people by asserting themselves in a powerful way. These stories frequently involve anger resulting from perceived unfair treatment:

> "I worked for [my friend] not for free, but he would pay me later. And he kinda took advantage. Not in a bad way, but he used it for what it was worth and I ended up getting really pissed off [...] I was just tired of not (pause) being respected, I guess. Because I did it as a favour, so I just quit. And, like, he was really mad and stuff, but I (pause) was just so done with it and I quit. [...] I guess I feel like it was a big deal because any time before that I would have just done it and shut up and not say anything" (Wave 2, Turning Point, 79th PCI percentile).

Power/Impact themes included stories where participants stood up to unfair treatment from a romantic partner, friends, or authority figures; quit a bad job; or asserted independence from parents. When power/impact themes centered on parents, the focus was typically changing the parent's attitudes (e.g., a participant convinces her mother to

let her move away from home) rather than becoming more independent (which might code for other agency themes, such as self-mastery). By expressing themselves in a powerful and impactful way, participants are able to defend themselves from perceived harm and dominate other people. Power/impact themes were consistent with research suggesting perfectionistic people are interpersonally hostile and prone to relationship conflict (Mackinnon et al., 2012).

Self-Mastery. Self-mastery themes were the most common and heterogeneous of all the agency themes. About half of all self-mastery themes could be encapsulated by two subthemes. The first of these subthemes was *school mastery,* in which participants expressed a desire to improve their school performance or have some other school performance-related insight. Notably, participants who told this type of story often placed an extraordinary amount of importance on their school performance, and became very distressed after receiving a poor grade, exemplified in this story from a participant very high in perfectionistic cognitions:

> I thought I was failing the class. I was just really upset […] [my mom] was trying to calm me down and saying that I'd do fine, and just see what mark I'm at right now, and see what I need, and honestly I actually just didn't need that much […] I realized that I was stressing too much about things that aren't going to have a life impact on me. And it says that I have a lot of priority on school (Wave 2, Low Point, 98th PCI percentile).

Another common self-mastery subtheme was *controlling social problems.* In these stories, participants come to realize they have interpersonal problems. Participants

attempt to control those problems either by mastering some aspect of their own personality or attempting to distance themselves from the problem by cutting out relationships that are perceived to be toxic. These stories typically centre on friends or romantic partners, rather than family. These stories represent attempts to cope with isolation, conflict, and social disappointments. In general, these themes were congruent with prior theory linking perfectionistic concerns to interpersonal problems and social disconnection (Mackinnon et al., 2012). Participants varied considerably in both the effectiveness and type of coping strategy used, but the common thread tying all stories together was insight centering on social isolation or relationship conflict. For example:

> I felt like frosh week was, I think, a bit of a disappointment for me [...] our residence did mocktail night and nobody even came and it was just, it was not a good turnout at all [...] that made me realize that if I want to be happy with where I am then I have to put myself out there and not be shy (Wave 2, Low Point, 91st PCI percentile).

Another common self-mastery theme was *coming of age*, in which participants asserted independence from their parents and/or became more mature. This story is likely prototypical for many emerging adults at this stage in their lives (Arnett, 2000). The remaining self-mastery themes were divided between subthemes of *mental health and drug use* (e.g., accepting that I have an eating disorder and working to fix it)*, work-related achievement striving* (e.g., deciding on a career as a psychiatrist), and *other unclassifiable forms of self-mastery* (e.g., striving to be a better athlete). Overall, the self-

mastery subthemes focus primarily on self-control, striving to improve oneself, and striving to perform better in the future.[11]

Discussion

Perfectionistic concerns and perfectionism cognitions were positively correlated with themes of agency within autobiographical narratives, consistent with hypothesis 1. Moreover, a mediation analysis showed perfectionistic concerns predicted rank-order increases in perfectionism cognitions, which in turn predicted agency, consistent with hypothesis 2.

Perfectionism cognitions are considered a state-like manifestation of more stable, trait-like perfectionistic concerns (Flett et al., 1998). Perfectionistic concerns are thought to predispose a person to engage in maladaptive perfectionism cognitions (Flett et al., 2007). The results of the present study support this notion using a longitudinal design. Perfectionistic concerns predicted rank-order increases in perfectionism cognitions across students' first semester at university. That is, students who began university with higher levels of perfectionistic concerns had higher levels of perfectionism cognitions relative to their peers by second semester. Since approximately 40% of the variance in Wave 2 perfectionism cognitions is explained by Wave 1 perfectionism cognitions, it is striking

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[11] Supplementary statistical analyses testing the correlations between questionnaire measures and the various subthemes of agency can be found in Appendix F. These analyses were not in the original *Journal of Personality* submission, but are included in this dissertation for interested readers.

that perfectionistic concerns predicted additional variance above this relatively strong stability over time. This provides the strongest evidence to date that perfectionistic concerns temporally precede and predict rank-order increases in perfectionism cognitions, supporting prior theory (Flett et al., 1998).

Perfectionism cognitions are intrusive, automatic thoughts about perceived performance failures and the need to work harder to achieve agentic goals (e.g., "I need to work harder"; Flett et al., 1998). Thus, it stands to reason that the most accessible autobiographical memories for people experiencing perfectionism cognitions would be those memories that centre on performance, achievement, and hard work. This contention is supported by a small qualitative literature on perfectionism (e.g., Merell et al., 2011; Slaney & Ashby, 1996). Using a mixed methods design that converted qualitative data in autobiographical narratives into quantitative codes, we expanded and clarified this literature by showing that perfectionism cognitions were positively associated with themes of agency in the autobiographical narratives of emerging adults beginning university. This supports the long-held assertion that perfectionists are overly concerned with themes of high standards, self-control, dominance, and being recognized by others for their achievements (Blatt, 1995; Frost et al., 1990; Hewitt & Flett, 1991). It also provides a novel mixed methods test of this assertion in a literature dominated by self-report questionnaire methods and, to our knowledge, provides the first systematic examination of perfectionism as manifested in autobiographical narratives.

Readers familiar with the literature on agency in autobiographical narratives may be surprised to see that perfectionism – a primarily maladaptive personality feature, as

measured in this study – correlates positively with agency, which is often conceptualized as a positive, life-enhancing construct. Agency is related to personal growth (McAdams et al., 2006), increased ego development in adolescents (Bauer & McAdams, 2010), and negatively associated with neuroticism (McAdams et al., 2004). However, studies also generally show a pattern of inconsistent or null relationships with subjective well-being (SWB), eudemonic well-being, and affective tone in narratives (Bauer & McAdams, 2004; 2010; McAdams et al., 2006). Bauer and McAdams (2000) also discuss some aspects of agency – in particular, status/victory themes – as representing a form of extrinsic motivation that is tied to numerous negative outcomes (e.g., Mills & Blankstein, 2000). Moreover, some research also suggests unmitigated agency – an extreme focus on the self that precludes closeness to others – is negatively associated with well-being (Helgeson, 1994). Thus, it may be best to think of agency as a construct with both positive and negative aspects.

In the present study, all participants were undergoing the transition to university for the first time, a transition that includes frequent performance evaluation, heightened stress, and temporary social isolation (Hicks & Heastie, 2008). We also asked participants to tell stories that occurred during a discrete 8-month portion of this transitional period, rather than allowing participants to freely narrate their whole life story. Because of this, the stories in our study are more likely to focus on the transitional period itself, along with the associated concerns with evaluation, social isolation, and stress. The qualitative analysis helped demonstrate this point, and further clarifies why perfectionistic concerns and perfectionism cognitions were positively correlated with

agency in our study. There were many aspects of agency that focused on performance, particularly in school. Indeed, the prototypical stories for agency were often performance-related and extrinsically-motivated (e.g., grade-focused performance, winning an award for performance, striving to perform better in school). There was a pronounced focus on grades and school performance, and students who told agentic stories often expressed a great deal of self-doubt (e.g., being "surprised" that they won a scholarship). Though the stories were often positive in tone (e.g., students are happy to get a good grade, to win at sports, or to gain insight), they betrayed an undertone of self-doubt, excessive self-control, a preoccupation with others' opinions, and potentially unrealistic standards about performance (e.g., being a straight A student in high school means I should get straight As in university). The qualitative analysis thus provides an interesting and novel exploration of agency in transitioning university students, and clarifies why agency is positively related to perfectionistic concerns and perfectionism cognitions in our study. Moreover, our study describes the typical challenges and agentic strivings of young students entering university.

Limitations and Future Directions

Though our sample size ($N = 127$) is relatively large for mixed methods research (see review by Hanson et al., 2005), it is still small compared to many mono-method quantitative studies of perfectionism (e.g., Graham et al., 2010). This small sample size precluded use of structural equation modeling, which is regarded as a superior analytic technique because it controls for unreliability in measurement (Kline, 2005). Though our longitudinal research with two waves of data represents a clear advance over cross-

sectional studies, at least three measurement occasions are ideal for testing longitudinal

mediation and at least four measurement occasions are necessary for other advanced

analyses to examine change over time such as growth curves (Little et al., 2007). Future

research should collect larger samples with at least four measurement occasions. All

participants in our sample were students undergoing the transition to university for the

first time. By selectively studying students beginning university, we had an opportunity

to observe changes in personality during a key developmental period. However, student

samples are widely criticized for their lack of generalizability (Henrich, Heine, &

Norenzayan, 2010). Future research might use a similar methodology in clinical samples

of highly perfectionistic people (e.g., people with eating disorders).

Though the qualitative analysis does help clarify the quantitative results, the

present study only touches the surface of the rich qualitative data in these narratives.

Future research might focus on a more detailed qualitative analysis of these narratives

from a grounded theory approach (Strauss & Corbin, 1990) to develop further insights

about the nature of perfectionism and agency. The qualitative analysis also did not feature

a formal bracketing process, nor auditing by a second researcher trained in qualitative

methods, which represents a limitation to this analysis (Barker et al. 2002).Finally,

though our choice to focus the life narratives on two discrete 4-month periods helped

immensely when attempting to determine temporal precedence in our longitudinal

analyses, our results may be less directly comparable to prior findings that did not impose

a specific timeframe for participants to narrate (e.g., McAdams et al., 2006). Future

researchers may want to conduct a more comprehensive life-narrative interview to see if results hold when participants are asked to consider their life story as a whole.

Conclusions

The present study provides an integrative model of perfectionistic concerns, perfectionism cognitions, and agency. It is the first paper to fully integrate both quantitative and qualitative research traditions in an attempt to understand perfectionism as a dynamic personality system that ebbs and flows over time. This model represents one of the few empirical tests of personality that integrates all three levels of personality as espoused by McAdams and Pals (2006) and represents a significant methodological and empirical advance for the literature on perfectionism. By understanding how perfectionism operates as a dynamic system, we can develop a greater understanding of how perfectionistic personality confers risk for a wide variety of psychological problems in challenging situations.

Table 4.1

Range, Means, Standard Deviations, Alpha Reliabilities and Intraclass Correlations

Variable	*Potential Range*	*Actual Range*	*M*	*SD*	α/*ICC*
Wave 1					
1. Perfectionistic concerns	13-73	16-71	42.22	13.31	.90
2. Perfectionism cognitions	0-100	10-95	44.60	18.57	.92
3. Agency	0-16	0-6	2.00	1.47	.74
Wave 2					
4. Perfectionistic concerns	13-73	14-72	39.42	14.17	.93
5. Perfectionism cognitions	0-100	0-94	41.84	20.02	.94
6. Agency	0-16	0-6	1.76	1.26	.87
Covariates					
7. Word count	--	88-831	401.1	151.1	.86
8. Relationship status	1-2	1-2	--	--	--

*Note. N*s range from 103 to 120 (pairwise deletion). *M* and *SD* for perfectionistic concerns and perfectionism cognitions were calculated by summing items and for agency by summing across scenes. Alpha reliabilities are reported for questionnaires and word count. Inter-rater reliability using intraclass correlations is reported for agency. Romantic relationship status is dichotomous (1 = no relationship; 2 = in a relationship).

Table 4.2

Bivariate Correlations

Variable	1	2	3	4	5	6	7
Wave 1							
1. Perfectionistic concerns	--						
2. Perfectionism cognitions	.65***	--					
3. Agency	.20*	.22*	--				
Wave 2							
4. Perfectionistic concerns	.90***	.64***	.14	--			
5. Perfectionism cognitions	.60***	.76***	.22*	.70***	--		
6. Agency	.22*	.24*	.19	.29**	.23*	--	
Covariates							
7. Word count	.18	.22*	.14	.19*	.17	.15	--
8. Relationship status	-.16	-.20*	-.03	-.18	-.20*	.05	-.10

*Note. N*s range from 103 to 120 (pairwise deletion). A bivariate correlation of .10 signifies a

small effect size, .30 signifies a medium effect size, and .50 signifies a large effect size

*p < .05; **p < .01; ***p < .001.

Table 4.3

Summary Table of Thematic Analysis for Agency Themes

Theme	T1 N (%)	T3 N (%)	Description of theme	Sample quotation
ACHIEVEMENT/RESPONSIBILITY				
Grade-Focused Performance	30 (49.2)	41 (77.4)	After a period of self-doubt, distress, or poor performance, participants get a good grade and feel better.	"I hadn't got higher than a C+ since I started. My last paper I got back was a B […]. I was on cloud nine" (Wave 2, High Point, 59th PCI percentile)
Non-School Performance	18 (29.5)	11 (20.8)	Participants overcome an obstacle, and emphasize their excellent performance in a non-school domain.	"I was nervous [...]. I turned out to be pretty good and I kept up with all the really intense fitness." (Wave 1, High Point, 37th PCI percentile)
University Transition	13 (21.3)	1 (1.9)	Participants are accepted to university or graduate from high school, and emphasize their hard work or maturity.	"Being accepted to [a Canadian University] [...] I've worked hard all my life to get where I am." (Wave 1, Turning Point, 26th PCI percentile)

Theme	T1 N (%)	T3 N (%)	Description of theme	Sample quotation
STATUS/VICTORY				
Performance Award	32 (80.0)	1 (9.1)	Participants are publicly appreciated by others for their academic, athletic, or employment performance by winning an award.	"I just like got a [scholarship] and it is a lot of money, but when you put it into comparison of what other people got, I got so upset" (Wave 1, Low Point, 80th PCI percentile)
Sports Victory	3 (7.5)	7 (63.6)	Participants defeat a rival in organized sports or become part of a sports team, achieving public recognition for their performance.	"She's chosen defense and I was on the list […] I could not believe that I'd made it over her." (Wave 2, Other Story, 78th PCI percentile)
Gain Employment	5 (12.5)	3 (27.3)	Participants defeat other applicants in the job hiring process, and acquire new employment.	"I actually applied for this job [...] it was really nerve-wracking [...] I got the job." (Wave 1, Turning Point, 46th PCI percentile)
POWER/IMPACT				
Controlling Others	13 (100)	13 (100)	Participants forcefully and effectively exert their will over other people.	"One of the guys tried to put me into a head lock […] but I reacted and ended up throwing him on his butt." (Wave 2, Other Story, 56th PCI percentile)

Theme	T1 N (%)	T3 N (%)	Description of theme	Sample quotation
SELF-MASTERY				
School Mastery	22 (17.3)	39 (35.8)	Participants strive to do better in school, realize they need to work harder, and/or some other school-related insight.	"It was a slap in the face to fail courses […] I don't know if I'm cut out to do what I thought I wanted to do. [...] I need to try more." (Wave 2, Turning Point, 62nd PCI percentile)
Controlling Social Problems	36 (28.3)	27 (24.8)	Participants realize they have interpersonal problems, and try to change themselves or eliminate relationships to fix the problem.	"A lot of friend conflicts [...] I kind of decided that I didn't really care what people thought about me." (Wave 2, Turning Point, 77th PCI percentile)
Coming of Age	27 (21.3)	15 (13.8)	Participants come to the realization that they are becoming an adult and/or assert independence from their parents.	"It made me realize that I have to be an adult [...] to learn to deal with things like that on my own." (Wave 3, Turning Point, 22nd PCI percentile)
Mental Health or Drug Use	8 (6.3)	13 (11.9)	Participants strive for self-control or accept that they have (or someone else has) a problem after taking drugs or dealing with psychological difficulties.	"I just felt really depressed about the amount of alcohol I thought I needed to drink to have fun I [...] shouldn't drink that much." (Wave 2, Low Point, 68th PCI percentile)
Work-Related Achievement Striving	12 (9.5)	1 (0.9)	Participants gain employment-related self-insight, strive to perform better in a work setting, or make a career decision.	"I hadn't really realized before, I just kind of thought of my job as a way to make money. But now I kind of see it as a way to grow." (Wave 1, High Point, 24th PCI percentile)

Theme	T1 N (%)	T3 N (%)	Description of theme	Sample quotation
"Other" Self-Mastery	22 (17.3)	14 (12.8)	Other instances of striving for self-control, performance striving, or agentic self-insight that do not fall into any other category.	"I finally understood that […] unless I [...] really work hard […] I'm not really gonna become the athlete that I imagine I can become." (Wave 1, Other Story, 75th PCI percentile)

Note. N refers to the frequency of a subtheme at a given wave. For example, since $N = 30$ for grade-focused performance at Wave 1, this means this subtheme was observed 30 times across all participants at Wave 1. Percentages are calculated by dividing N by the total number of stories told within a given theme at that wave (e.g., Wave 1 grade-focused performance N / total number of achievement/responsibility themes at Wave 1). For example, the percentage for grade-focused performance at Wave 1 is calculated by (30 / (30+18+13))*100%. The participant's percentile ranking on the perfectionism cognitions inventory at the wave the story was told is indicated in parentheses after the sample quotes.
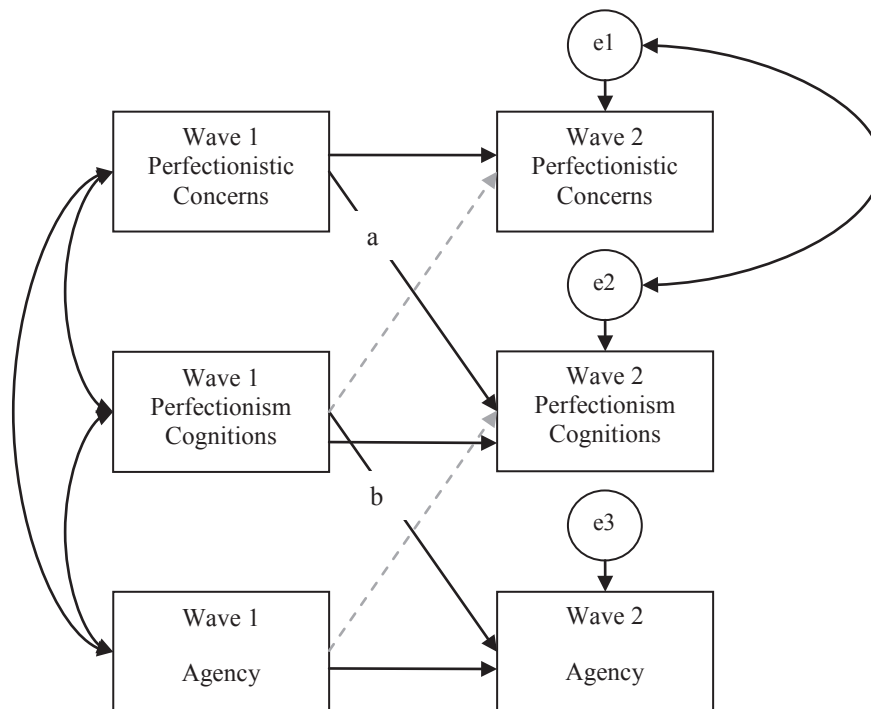
Figure 4.1. Two-wave panel model for testing mediation (hypothesized). Rectangles

represent measured variables. Black arrows represent hypothesized significant effects;

dotted grey arrows represent hypothesized nonsignificant effects. Single-headed arrows

represent paths. Double-headed arrows represent correlations. The indirect effect of

perfectionistic concerns on agency through perfectionism cognitions was calculated by

multiplying paths a and b. Circles represent residual error terms for endogenous
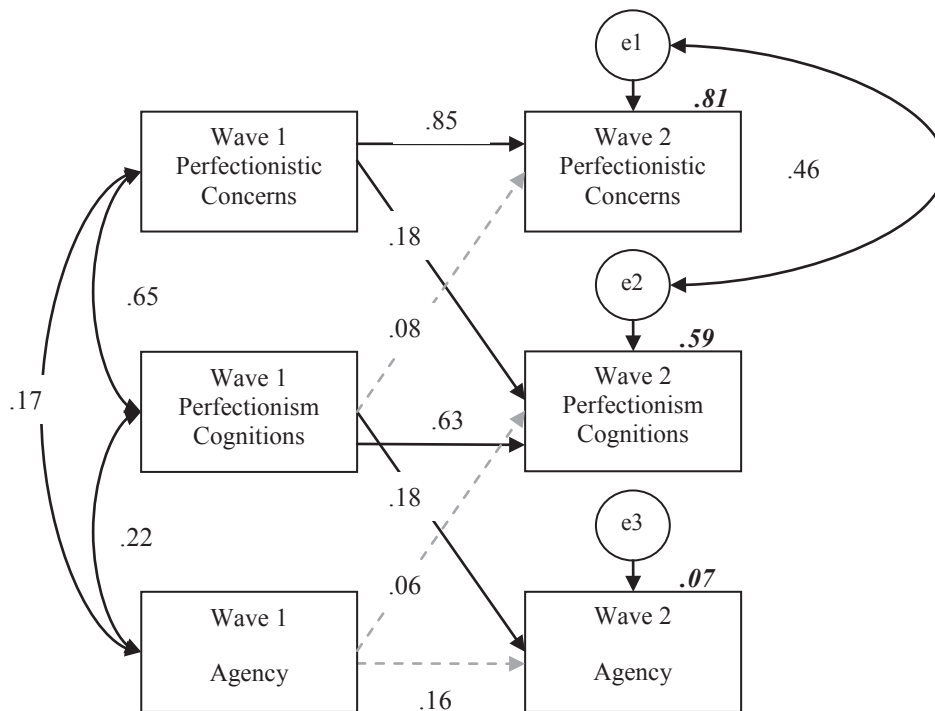
variables.

Figure 4.2. Two-wave panel model testing mediation (actual data). Rectangles represent

measured variables. Circles represent residual error terms for endogenous variables.

Numbers beside paths represent standardized correlations or path coefficients. Italicized,

bolded numbers represent the proportion of variance in endogenous variables accounted

for by exogenous variables. Single-headed and double-headed black arrows are

significant ($p < .05$). Dotted grey arrows are nonsignificant ($p > .05$). The relationship

between wave 1 and wave 2 agency was marginally significant ($p < .10$).

Acknowledgements

Chapter 5: Perfectionistic concerns, communion, and subjective well-being:

A test of the social disconnection model

    This study represents a set of planned hypothesis tests from Sean's dissertation proposal, and contains data analysis on the same dataset used in Chapters 2 and 4. As with prior papers, Sean played a lead role in all aspects of study design, collection and analysis for this paper. Sean completed all the writing for this manuscript, and received editorial feedback from Dr. Simon Sherry. He also received assistance with copyediting from paid research assistants Matt MacNeil (BA) and Courtney Heisler (BA). This manuscript was not submitted to any peer-reviewed journal, and represents an original contribution to this dissertation manuscript.

Running Head: PERFECTIONISM COMMUNION AND WELL-BEING

Perfectionistic concerns, communion, and subjective well-being:

A test of the social disconnection model

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Abstract

The present study tested the links between perfectionistic concerns, subjective well-being (SWB), and themes of communion as coded from autobiographical narratives. Using the social disconnection model as a theoretical guide, we predicted that communion would be negatively correlated with perfectionistic concerns and positively correlated with SWB. Moreover, we hypothesized that themes of communion would mediate the relationship between perfectionistic concerns and SWB. A sample of first year undergraduate students ($N = 127$) participated in a 2-wave, 130-day, mixed methods design. Perfectionistic concerns and SWB were measured using questionnaires, and themes of communion were coded from autobiographical narratives using an established coding scheme. Results failed to support hypotheses. Themes of communion were uncorrelated with both perfectionistic concerns and SWB. However, themes of communion did demonstrate inter-rater reliability and test-retest reliability. Moreover, a qualitative thematic analysis suggests that themes of communion have good face validity. Possible explanations for the failure to support hypotheses are discussed.

Chapter 5

Perfectionistic concerns, communion, and subjective well-being:

A test of the social disconnection model

Chapter 5 represents additional tests of a priori hypotheses regarding

perfectionism, relationship intimacy, and well-being. Based on the social disconnection

model (Hewitt et al., 2006), I predicted that perfectionistic concerns would be associated

with fewer themes of communion in autobiographical narratives, which in turn would be

associated with decreased SWB. This line of research is consistent with research I

conducted on romantic couples for my first comprehensive project (Mackinnon et al.,

2012). Overall, tests of the social disconnection model were not supported by my

dissertation results. However, because these analyses were predicted a priori, results and

a rationale for these hypotheses are included as a separate chapter here. This chapter

takes the form of a short research report examining the relationship between

perfectionistic concerns, themes of communion, and SWB.

Vulnerability models of perfectionistic concerns and well-being

Perfectionistic concerns is a personality trait involving persistent doubts about

one's own ability, concern over mistakes and being evaluated, and strong negative

reactions to perceived failures (Dunkley et al., 2003). SWB is characterized by a

combination of positive affect, absence of negative affect, and life satisfaction (Busseri &

Sadava, 2011). Numerous cross-sectional studies show that perfectionistic concerns are

negatively correlated with SWB (e.g., Chang, 2000; Hewitt & Flett, 1991). Theory

suggests that perfectionistic concerns confer vulnerability for decreased SWB, rather than

the reverse (Hewitt & Flett, 2002). Research supports this theory. Although most studies

have focused on depressive symptoms rather than the broader conceptualization of SWB outlined by Busseri and Sadava (2011), longitudinal research indicates that perfectionistic concerns predict decreased SWB, but not the reverse. For example, in short-term longitudinal studies, perfectionistic concerns confer risk for depressive symptoms in undergraduate samples (Graham et al., 2010; Rice & Aldea, 2006). Similarly, Enns and Cox (2005) found that perfectionistic concerns conferred vulnerability for increased depressive symptoms one year later using a clinical sample. Results from Chapter 2 support the notion that perfectionistic concerns confer risk for diminished SWB indirectly through perfectionism cognitions.

Social disconnection model

Theory and research suggest people high in perfectionistic concerns experience interpersonal difficulties (Hewitt et al., 2006). The social disconnection model suggests a persistent sense of falling short of others' expectations and a maladaptive pattern of interpersonally-aversive behaviour is responsible for heightened levels of both subjective and objective measures of social disconnection observed in prior research (Hewitt et al., 2006). Consistent with the theoretical model, research shows that perfectionistic concerns confer risk for decreased perceived social support (Sherry, Law, Hewitt, Flett, & Besser, 2008), increased dyadic conflict in romantic relationships (Mackinnon et al., 2012), as well as a host of other interpersonal problems such as hostility, rejection, and decreased relationship satisfaction (Habke & Flynn, 2002). Thus, the social disconnection model posits that interpersonal difficulties mediate the relationship between perfectionistic concerns and decreased SWB.

Perfectionism and communion

Given the postulates of the social disconnection model (Hewitt et al., 2006), it seems reasonable that these interpersonal problems would manifest in the autobiographical memories of perfectionistic people. Perfectionists are likely to have fewer positive memories involving other people because they tend to have smaller social networks, increased relational conflict, more frequent relationship dissolution, and less intimate personal relationships (Habke & Flynn, 2002; Hewitt et al., 2006; Mackinnon et al., 2012). Moreover, because of the cognitive biases associated with perfectionism (Flett et al., 1998), it seems likely that people high in perfectionistic concerns are likely to have distorted memories of other people as being unsupportive, unfair, and excessively demanding (Hewitt & Flett, 1991; Holm-Denoma, Otamendi, & Joiner, 2008). Qualitative research supports these ideas, suggesting that interpersonal problems are a prominent theme in the narratives of perfectionists (e.g., Rice et al., 2003). In sum, individuals high in perfectionistic concerns are likely to express fewer communal themes when narrating autobiographical memories.

Emerging from Bakan's (1966) work, communion is a broad construct represented by an orientation towards close interpersonal relationships. Themes of communion in autobiographical narratives are identified using a coding scheme developed by McAdams, Hoffman, Day, and Mansfield (1996). In McAdams et al.'s (1996) coding scheme, communion focuses on the self in relation to others, and is typically manifested in narratives as themes of love, dialogue, caring, and community. Themes of communion are thought to represent a form of communal motivation; that is, they represent the motivation to merge with others and sacrifice individuality for the sake

of the group (Grossbaum & Bates, 2002). Themes of communion are positively associated with intimacy motivation (McAdams et al., 1996), extraversion (i.e. a tendency towards personal warmth, gregariousness, assertiveness, excitement seeking, heightened activity, and positive emotions), and agreeableness (i.e., the tendency to be pleasant or accommodating in social situations; McAdams et al., 2004). Additionally, themes of communion are positively associated with SWB in some studies (Bauer & McAdams, 2010), but not in others (Grossbaum & Bates, 2002). Communion shows moderate test-retest correlations over 10-week and 3-year periods, supporting the measure's reliability (McAdams et al., 2006).

Rationale and Hypotheses

Perfectionistic concerns are associated with numerous relationship problems, such as decreased social support, increased relationship conflict, and increased interpersonal hostility (Habke & Flynn, 2002; Holm-Denoma et al., 2008). However, much of the extant literature relies on cross-sectional correlations and mono-method self-report questionnaires (e.g., Sherry et al., 2008). The present study uses a 2-wave, 130-day mixed-methods design to test the relationship between perfectionistic concerns, communion, and well-being. Consistent with the social disconnection model (Hewitt et al., 2006) and prior research on communion (e.g., Bauer & McAdams, 2010), two hypotheses were proposed:

Hypothesis 1: Communion will be positively correlated with SWB and negatively correlated with perfectionistic concerns.

Hypothesis 2: The relationship between perfectionistic concerns and SWB will be mediated by communion.

Similar to Chapter 4, I also conducted a qualitative thematic analysis on themes of communion in autobiographical narratives. This analysis provides a rich description of communion as measured in this study, and will further explicate quantitative findings. Thematic analysis will also help clarify any non-significant findings by allowing us to probe the nature of communal themes in greater detail. Thus, this chapter has one primary research question in addition to the hypotheses proposed earlier:

Research Question 1: What are the prototypical communal stories told by emerging adults undergoing a transition to university for the first time?

Method

Participants

The same participants from Chapters 2 and 4 were used. See the participants section of each respective chapter for more information.

Procedure

Since this chapter simply represents a re-analysis of existing data using the same dataset with one new variable (i.e., communion), the procedure is virtually identical to the procedure outlined in Chapter 4. As in Chapter 4, only Waves 1 and 3 were used, because the narrative data were not collected at Wave 2.

Materials

Perfectionistic concerns. The same measure as used in Chapters 2 and 4 were used. This measure is a composite of three short-form self-report questionnaires: Socially-prescribed perfectionism (Hewitt & Flett, 1991), concern over mistakes, and doubts about actions (Frost et al., 1990). See Chapters 2 and 4 for more details. All questionnaires are presented in Appendix A.

SWB. The same measure of SWB as described in Chapter 2 was used. This measure is a composite of three self-report questionnaires: Positive affect, reverse-coded negative affect (Watson et al., 1988), and life satisfaction (Diener et al., 1985). See Chapter 2 for more details.

Communion. In accordance with McAdams et al.'s (1996) coding scheme, each key scene was coded for four communion themes: Love/Friendship (i.e., a relationship becomes closer), Dialogue (i.e., reciprocal, non-hostile, non-instrumental communication), Caring/Help (i.e., providing care, assistance, or support), and Unity/Togetherness (i.e., a sense of oneness with a community of people). Total scores for communion are calculated by summing themes across all four key scenes, so total scores for each can range from 0 to 16 (McAdams et al., 2006). The communion coding protocol is presented in Appendix E.

I worked with a trained research assistant to code 400 key scenes (50 of each scene at both waves) for themes of communion in order to calculate inter-rater reliability. Inter-rater reliability was moderate to excellent when examined for each individual theme (AC_1s ranged from .72 to 1.00; Gwet, 2002) and for total scores (ICCs at both waves were .87). Once inter-rater reliability was established, the trained research assistant coded the remaining key scenes, consulting with me regularly.

Word count. An average measure for word count was calculated by averaging across all eight stories. See Chapter 4 for more details.

Data analytic strategy

The data analytic strategy and design is identical to Chapter 4, with the following differences: (a) The mediating variable is communion; (b) the dependent variable is

SWB; (c) the qualitative thematic analysis focuses on themes of communion (474 data items in total). See Chapter 4 for details.

Results

Missing values

Overall, 9.9% of data was missing, with covariance coverage ranging from .90 to 1.00. Missing data was handled using listwise deletion for bivariate correlations and full information maximum likelihood estimation for path analyses.

Descriptive statistics

In total, 474 communion themes were coded. Love/Friendship themes ($N = 191$) were the most common, followed by dialogue ($N = 161$), caring/help ($N = 89$), and unity/togetherness ($N = 33$). The mean for the communion total score ($M = 2.01$, $SD = 1.65$) was within one standard deviation of prior work (e.g., McAdams et al., 2006). Means and standard deviations for other variables are reported in Chapters 2 and 4, and will not be repeated here.

Correlations

A correlation matrix can be found in Table 5.1. Perfectionistic concerns and components of SWB had acceptable test-retest reliability (rs from .40 to .89, ps < .05) and perfectionistic concerns was negatively correlated with both the total score and individual facets of SWB (rs from -.34 to -.51 , ps < .05), which is consistent with the findings reported in Chapter 2. The test-retest correlation was significant for communion, $r = .23$, $p = .025$, supporting its test-retest reliability. Word count was also mildly but significantly correlated with communion (rs from .23 to .27, ps < .05), replicating prior work (McAdams et al., 2006). However, communion was uncorrelated with

perfectionism variables and with SWB (rs from -.01 to .11), failing to support hypothesis 1. Though these non-significant correlations indicate it is extremely unlikely that mediation will occur, I conducted the path analysis specified a priori for hypothesis 2 because the addition of covariates and robust estimates of standard errors in Mplus might have produced different values. [12]

Path analyses

A two-wave panel model for testing mediation was used to test hypothesis 2 (see Figure 5.1). The mediation model in Figure 5.1 fits the data poorly: $\chi^2(N = 127) = 11.96$, $p = .008$; $\chi^2/df = 3.99$; CFI = .97; TLI = .87; RMSEA = .15 (90% CI: .07, .25). The direct effect from Wave 1 perfectionistic concerns to Wave 3 SWB was retained because it was statistically significant ($\beta = -.26$, $p = .008$). Though communion had significant test-retest reliability ($\beta = .25$, $p = .009$), it was uncorrelated with SWB and perfectionistic concerns at both waves, as in the bivariate correlations. The bias-corrected, bootstrapped indirect effect from perfectionistic concerns to SWB through communion was not statistically significant, 95% CI [-.001, .002], failing to support hypothesis 2. When average word count was added into the model as a covariate, the test-retest reliability for communion becomes marginally significant ($\beta = .19$, $p = .088$). Otherwise, the paths in Figure 5.1 do not change. Word count was significantly correlated with perfectionistic concerns ($\beta =$

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[12] I also examined whether perfectionism, themes of agency, or sex moderated the communion-SWB relationship. These analyses were non-significant (ps > .05), and are not reported further.

.18, *p* = .045) and communion (β = .24, *p* = .02) at Wave 1. Thus, the addition of average

word count as a covariate had minimal impact on the analysis in Figure 5.1.

Thematic Analysis

For each of the four communion themes, thematic analysis was conducted to

describe the content of those themes. A summary of the thematic analysis, including

frequencies, definitions, and sample quotes, can be found in Table 5.2.

Love/Friendship. The most common love/friendship subtheme identified was

friendship, which accounted for over half of the love/friendship themes. In this subtheme,

the relationship with a friend becomes stronger or closer. These stories typically focused

on shared experiences, such as parties, eating at a restaurant, personal conversations, or

simply hanging out. At Wave 1, the prototypical story was the final get-together with

high school friends before moving away to university, culminating in an expression of

renewed love and appreciation for their friends. At Wave 3, friendship stories tended to

focus on meeting new people at university, and how, after a precipitating event (e.g.,

talking at a party), they became close friends. In both cases, the story culminated with

increased closeness with a friend. For example:

> "...I met my first university friend, it was in our first day of classes. [...] I'm just
>
> really shy and quiet and I don't know what to say but weirdly enough, he and I
>
> were just like super nervous together talking about web comics and that kind of
>
> thing (laughs) and we just became great friends almost immediately (Wave 3,
>
> Other Important Event)

Another common subtheme was *familial love*, in which participants become emotionally

closer to a family member. Though many stories centered on parents, the full range of

family members was represented across stories, including siblings, cousins, aunts/uncles, and grandparents. In familial love stories, there is typically an important precipitating event (e.g., family vacation, holidays, or personal conversations) that results in a stronger, closer relationship. The least common subtheme was *romantic love*, which is perhaps not surprising given that only 36.8% of participants were in a romantic relationship at Wave 1. In this story, there is a strong expression of love for a romantic partner. Though many participants expressed relationship difficulties associated with beginning a long-distance relationship after moving to university, participants who told romantic love stories are able to overcome these difficulties and express strong feelings of love: "We wanted to stay together even though it's extremely long distance [...] I'm in love with him, so I want to be with him" (Wave 1, Other Important Event).

Dialogue. The most common dialogue theme was *talking to friends,* which is a non-hostile and reciprocal conversation with a friend. Typically, examples of this subtheme focused on more regular, day-to-day conversations with friends (e.g., chatting about school), though occasionally stories represented more engaging personal conversations or advice sessions. A typical example would be something like: "We spent like three hours in the car just like talking and listening to music" (Time 1, Other Important Event). The remaining subthemes were similar, but the target person varied. When participants were *talking with family,* they were usually talking to a parent (about 50% of the time), but this subtheme also represented conversations with aunts, uncles, cousins, grandparents, or siblings. When participants were *talking to romantic partners*, conversations were typically intimate and focused on shared emotions. *Talking to other*

people included conversations with teachers, customers, coworkers, a partner's family, or strangers.

The data items for dialogue were comparatively impoverished, containing scant insight into the participants' narratives. For example, participants often did not specify what the conversation was about, instead noting only that they had a conversation. The impoverished nature of these data items limited the amount of rich description that is possible for themes of dialogue. When present, themes of love/friendship, caring/help, and unity/togetherness tended to be the central themes driving the key scene's story. In contrast, dialogue themes were often more peripheral. For example, a story might focus on how a parent provided emotional support over the phone (i.e., caring/help), but would also be coded for dialogue because the conversation was non-hostile and reciprocal. Therefore, dialogue themes – more than any other communion theme – tended to accentuate stories that were already communal in some way, rather than being the central focus of the story.

Caring/Help. In general, themes of caring/help tended to focus on participants receiving help from someone else, rather than helping other people. This was split into two subthemes: (a) *support received from family* and; (b) *support received from others*. These two themes were broadly similar to one another, except for variation in the person doing the helping. In both of these stories, the participant experienced some sort of difficulty with their emotional, financial, or physical well-being. Another person provided assistance, which resulted in an improvement in the participant's well-being. Typically, these stories focused on emotional stressors (e.g., having a bad day, feeling

stressed) which improved after an intimate personal discussion with someone close. For example:

> A bunch of shitty stuff had just happened, like the breakup on like Halloween, and I was just like having a shit time. [...] and then [my friend and I] just climbed the top of the giant mud pile and got drunk (laughs) on the top of it in the rain [...] It was the first time I've had a conversation with someone who told me that the thoughts and the feelings I was having were legitimate and that I wasn't as insane as I thought I was (Wave 3, Turning Point; also codes for Dialogue).

Though caring/help themes were typically about receiving help, a few stories were about *helping others*. These stories followed a similar script, except that the participant was providing assistance to someone else. At Wave 1, participants were more likely to tell a story about helping other people. A closer reading of the stories reveals that helping others often occurred in formal settings as a volunteer or as part of their employment (e.g., camp counsellor) at Wave 1, but did not occur in the aforementioned settings at Wave 3 when participants were well into the academic year.

Unity/Togetherness. Themes of unity/togetherness were quite heterogeneous, despite being the rarest communion theme. The most common subtheme was *friend/family togetherness*, which was a story in which the participant felt a strong sense of oneness or togetherness with a large group of family or friends. At Wave 1, this subtheme was coded for feelings of togetherness during high school graduation or a camping trip. At Wave 3, this subtheme was coded for feelings of togetherness during frosh week or dormitory activities. The next most common subtheme was *work and sports community*, in which participants either described stories in which they felt close

to their co-workers or stories in which they bonded with members of their sports team. Bonding with sports teams typically occurred in Wave 3, usually after winning an important game. For example: "So I guess winning was nice 'cause we won but also it brought us [the team] together even more" (Wave 3, High Point; Also codes for Status/Victory). A less common theme was for *community closeness*, in which participants felt close to a large, undifferentiated group such as a nation, ethnic minority, or even all humankind.

Re-visiting Quantitative Analyses Using Subthemes

Following this thematic analysis, each subtheme was converted into a separate quantitative variable (i.e., 1 = present; 0 = absent). Further, each subtheme variable was correlated with perfectionistic concerns and SWB at both waves. Spearman's rank-order correlation with listwise deletion ($N = 108$) was used in these analyses as a non-parametric alternative statistic because assumptions of multivariate normality were violated. Of the 104 correlations (i.e., 26 subthemes x 2 perfectionism variables x 2 SWB variables = 104) conducted in these exploratory analyses, only 3 were significant using the $p < .05$ criterion: The Wave 1 talking to others dialogue subtheme was negatively correlated with perfectionistic concerns at Wave 1 ($r_s = -.22, p = .022$) and Wave 3 ($r_s = -.22, p = .023$). In addition, the friend/family togetherness subtheme at Wave 1 was positively correlated with SWB at Wave 3 ($r_s = .21, p = .026$). The remaining subthemes were uncorrelated with perfectionistic concerns and SWB.

Spearman rank-order correlations were also examined between perfectionistic concerns, SWB, and the total scores summed across all four stories within each wave for love/friendship, dialogue, caring/help, and unity/togetherness themes, respectively. Of the

32 correlations (i.e., 8 narrative variables x 2 perfectionism variables x 2 SWB variables = 32) only the relationship between Wave 1 SWB and Wave 1 love/friendship themes was statistically significant (r_s = .20, p = .045). Given the large number of correlations conducted in these exploratory analyses, the few significant correlations that were found may be spurious. In sum, the re-analysis of the quantitative data using the subcomponents generally continued to support the overall conclusion that communion is unrelated to perfectionistic concerns and SWB.

Discussion

Themes of communion in autobiographical narratives were uncorrelated with perfectionistic concerns and SWB, failing to support hypothesis 1. This was true when examining total scores and individual subthemes identified through thematic analysis. Though perfectionistic concerns conferred vulnerability for decreased SWB, themes of communion did not mediate this relationship, failing to support hypothesis 2. The thematic analysis showed that communal stories were most likely to focus on friendships, and secondarily focus on family relationships.

One response to the null findings would be to question the reliability and validity of the communion construct. That is, one might contend that the communion construct as measured in this study has poor psychometric properties, which contributes to the null relationships. However, an assessment of the prior literature and the results of the current study do not support this conclusion. Themes of communion have excellent inter-rater reliability (ICCs > .86) and moderate test-retest reliability (rs from .23 to .43) both in the current data and in prior work, supporting the reliability of this coding scheme (e.g.,

McAdams et al., 2006)[13]. Themes of communion are positively correlated with intimacy motivation in prior work (McAdams et al., 1996) supporting its convergent validity. Moreover, themes of communion are positively correlated with overall word count (rs from .22 to .29) both in the present study and in prior work, suggesting that stories illustrating themes of communion tend to be more complex, and richly differentiated (McAdams et al., 2006). Though word count is rarely investigated except as a covariate in prior work on narratives (e.g., Mackinnon et al., 2011; McAdams et al., 2006), this pattern of correlations does suggest this study coded communion in a similar way to prior studies. Finally, the thematic analysis did not suggest any wide deviation from the codes of communion as described in prior work (e.g., Grossbaum & Bates, 2002; McAdams et al., 1996; 2006). As demonstrated in the thematic analysis, themes of communion were quite positive in valence and typically placed a strong emphasis on relatedness and close interpersonal relationships. The thematic analysis thus provides a strong degree of face validity for the communion variable. Taken together, these results suggest the null findings are not likely simply a result of poor reliability and/or validity.

Having ruled out poor psychometric properties, other explanations for the null findings must be explored. It is possible that themes of communion do not tap the same underlying constructs as prior work on the social disconnection model. That is,

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[13] Note that my dissertation used a different timeframe when compared to McAdams' prior work (i.e., asking participants to tell stories from a discrete four-month period instead of from any time in their lives; McAdams et al., 1996; 2006). For this reason, the measure of communion presented here may not be directly comparable to past research.

communion may not clearly measure subjective social disconnection (e.g., low levels of perceived social support) or objective social disconnection (e.g., an objectively impoverished social network). Though we can infer that people who tell communal stories place value on close interpersonal relationships, the stories themselves tell the researcher little about objective social disconnection. Some authors conceptualize themes of communion as a communal form of motivation (e.g., McAdams et al., 2006): People who tell communal stories are motivated by a need to belong and be loved by other people. The need to belong is a fundamental human need (Baumeister & Leary, 1995); however, people who tell many communal stories are thought to have a stronger need to belong than others; correspondingly, they are higher in intimacy motivation and the need for affiliation (McAdams et al., 1996).

Theory predicts that perfectionists feel subjectively disconnected from others, and may have difficulty forming close relationships (Hewitt et al., 2006). However, the social disconnection model does not make predictions regarding communal motivation. In fact, there is little reason to believe perfectionists are less motivated by the need for relatedness. Indeed, evidence suggests that perfectionists place an inordinate amount of pressure on themselves to perform well as a way of obtaining acceptance and love from others (Hewitt & Flett, 1991). Perfectionists want to be loved, but feel others place unreasonable demands on them, and that relational intimacy is contingent on their performance (e.g., a sample item from the Concern Over Mistakes subscale is "The fewer mistakes I make, the more people will like me"; Frost et al., 1990). If communion is primarily a measure of communal motivation, then the null results make sense. Perfectionists want to have close interpersonal relationships; however, they are plagued

by self-doubt and feel others are constantly judging them, impairing their ability to engage in close relationships. Thus, perfectionists may *want* to be close to others, but objectively fail to do so in a variety of ways. This nuance is not captured by the measure of communion used in the present study.

Some studies have suggested a link between themes of communion in autobiographical narratives and SWB (Bauer & McAdams, 2004; 2010). At first glance, it might seem as though the present results contradict these previous findings. However, studies finding a link between communal themes and SWB differ substantially in their approach to coding narratives. Bauer and McAdams (2004; 2010) use a coding scheme which measures *communal growth*, which is designed to measure the actual attainment of communal goals. In contrast, the coding scheme used in the present study represents *communal motivation*, which is thought to measure the degree to which participants are motivated by communal goals (McAdams et al., 1996; McAdams et al., 2006). Accordingly, authors who use the original coding scheme for communion (i.e., communal motivation) find null relationships with well-being (Grossbaum & Bates, 2002), but authors who use an alternate coding scheme which focuses instead on communal growth tend to find positive relationships with SWB (Bauer & McAdams, 2004; 2010). The seemingly contradictory results across studies are likely due to differences in the coding schemes used. The present study is in line with prior work using McAdams et al.'s (1996) original coding scheme for communion (Grossbaum & Bates, 2002). I chose this coding scheme because it has more research supporting its validity and reliability at the present time. In the present study then, it appears that neither perfectionistic concerns nor SWB are associated with communal motivation.

Limitations and Future Directions

The self-reported nature of all variables in this study may be a considerable limitation when testing the social disconnection model. Perfectionists also tend to hide their flaws through a perfectionistic self-presentational style (see Chapter 2), which may make it difficult to assess relationship problems through self-report (see Vazire & Carlson, 2010, for a review of the limitations of self-report data). Future research should collect information from informants (e.g., romantic partners, friends, parents) to overcome these limitations. Nonetheless, prior research (e.g., Habke & Flynn, 2002) shows that perfectionistic people will admit to some interpersonal difficulties on self-report questionnaires, so this explanation may not wholly explain the failure to observe the expected relationship between communion and perfectionism. The measurement of communion in the present study may also be a sub-optimal test of the social disconnection model. Using communal variables that more clearly focus on relationship intimacy (Mackinnon et al., 2011) or communal growth (Bauer & McAdams, 2010) may produce different results. Similarly, it might help to develop a coding scheme that more clearly focuses on social negativity (e.g., conflict, hostility), as these themes might provide a more direct test of the social disconnection model (Hewitt et al., 2006). The sample size was also relatively small, making it difficult to detect small effects. Finally, because narrative data were collected only at Waves 1 and 3, we did not use the questionnaire data from Wave 2. This is a clear limitation, because longitudinal analysis with three or more waves is more desirable from a statistical perspective because it allows for the control of pre-existing levels of study variables (Little et al., 2007).

Conclusion

This study did not provide evidence to support the social disconnection model (Hewitt et al., 2006). Though it is difficult to explain null results conclusively, it is possible that method variance (i.e., reliance on self-report scales for all variables) may have inflated relationships between perfectionistic concerns and social disconnection in past work (e.g., Sherry et al., 2008). Another possible explanation is that themes of communion do not tap the same underlying construct as measures of social disconnection used in past tests of the model (e.g., Mackinnon et al., 2012). Instead, themes of communion may better represent a form of communal motivation, which indicates a person's desire for close interpersonal relationships. Measuring personality through life narratives is an area of research still in its infancy, and there is much to learn about measurement in this area. It is encouraging that communion themes have good inter-rater reliability, moderate test-retest reliability, and good face validity in a thematic analysis, which supports the emerging literature testing the psychometric properties of this measure (McAdams et al., 2006). It is also important that themes of communion are uncorrelated with perfectionistic concerns and SWB, as it helps develop a greater understanding of what communion does *not* represent. As the field progresses, the body of knowledge about narrative identity will increase, and a clearer taxonomy of narrative identity constructs may emerge. The present study incrementally advances this literature by providing information on psychometric properties of communion and demonstrates that communion is uncorrelated with perfectionistic concerns and SWB.

Table 5.1

Bivariate Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13
Wave 1													
1. Perfectionistic Concerns	-												
2. Communion	-.12	-											
3. Life Satisfaction	-.46***	.06	-										
4. Negative Affect	.38***	-.12	-.41***	-									
5. Positive Affect	-.31***	.06	.60***	-.27**	-								
6. SWB Total	-.49***	.10	.86***	-.71***	.79***	-							
Wave 2													
7. Perfectionistic Concerns	.89***	-.01	-.50***	.36***	-.34***	-.51***	-						
8. Communion	-.01	.23*	.11	-.01	.11	.10	.02	-					
9. Life Satisfaction	-.32***	-.06	.70***	-.22*	.44***	.58***	-.42***	.00	-				
10. Negative Affect	.41***	-.08	-.34***	.40***	-.32**	-.45***	.51***	.07	-.54***	-			
11. Positive Affect	-.28**	-.02	.44***	-.08	.62***	.48***	-.36***	.09	.67***	-.46***	-		
12. SWB Total	-.40***	.00	.59***	-.28**	.55***	.60***	-.51***	.01	.88***	-.79***	.84***	-	
13. Word Count	.16	.27**	-.04	.08	-.06	-.08	.22*	.23*	-.07	.24*	-.05	-.14	-

Note. $N = 95$. SWB = Subjective Well-Being. A bivariate correlation around .10 signifies a small effect size, .30 signifies a medium effect size, and .50 signifies a large effect size. See Chapter 4 for the rationale for including only a single index for word count, rather than a separate measure at each wave.

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

Table 5.2

Overall Summary Table of Communal Themes

Theme	T1 N (%)	T3 N (%)	Description of theme	Sample quotation
LOVE/FRIENDSHIP				
Friendship	52 (54.74)	53 (55.21)	Participants realize how much they love their friends and/or the friendship becomes stronger or closer.	"I just realized I loved those people that I was with [...] I just realized how much those people meant to me [...] how much I value my friends" (Wave 3, High Point).
Familial Love	28 (29.47)	36 (37.50)	Participants learn to appreciate and/or love their family more, typically after an important event (e.g., moving, vacation).	"My dad and I sat down and we had this big talk [...] we've actually been much better friends since" (Wave 3, Turning Point).
Romantic Love	15 (15.79)	7 (7.29)	Participants start a new romantic relationship, realize they love their romantic partner, or the romantic relationship becomes closer.	"I don't want to be with anybody else because he's the one for me and I just felt so much love" (Wave 1, Other Story).

Theme	T1 N (%)	T3 N (%)	Description of theme	Sample quotation
DIALOGUE				
Talking to Friends	38 (43.18)	39 (53.42)	A reciprocal and non-hostile conversation or advice session with a friend.	"We just talked about all the times we've had together, from grade nine to grade twelve" (Wave 1, Other Story).
Talking to Family	27 (30.68)	21 (28.77)	A reciprocal and non-hostile conversation or advice session with a family member.	"Me and my dad and my uncle, just talking about my dad's side of the family" (Wave 3, Other Story).
Talking to Partner	11 (12.50)	6 (8.22)	A reciprocal and non-hostile conversation or advice session with a romantic partner.	"I get a text from [my partner] and that was when we started talking" (Wave 1, Other Story).
Talking to Other People	12 (13.64)	7 (9.59)	A reciprocal and non-hostile conversation or advice session with someone who is not a friend, family member, or romantic partner.	"While I was at that camp we were asked to share our life stories [...] it's sometimes good to just talk" (Wave 1, Other Story).
CARING/HELP				
Support Received from Family	7 (14.29)	13 (32.50)	Family members provide care and/or support for the well-being of the participant.	"I broke down and called my parents and […] my parents were comforting me on the phone" (Wave 3, Low Point).
Support Received from Others	13 (26.53)	17 (42.50)	Other people (e.g., friends, classmates, therapist) provide care and/or support for the well-being of the participant.	"I cried and then I called my best friend and […] she calmed me down a bit" (Wave 3, Low Point).

Theme	T1 N (%)	T3 N (%)	Description of theme	Sample quotation
Helping Others	29 (59.18)	10 (25.00)	The participant provides care and/or support for the well-being of someone else, or strives to help others in the future.	"She was so upset [...] I just wrote a little note and […] she was like, oh thank you so much for the note" (Wave 1, High Point)
UNITY/TOGETHERNESS				
Community Closeness	3 (18.75)	4 (25.00)	Participants feel a sense of connectedness or solidarity with a large community of people (e.g., a whole ethnic group, all humankind).	"It was an awesome feeling [...] being welcomed in to such a social community" (Wave 1, High Point).
Family/Friend Togetherness	9 (56.25)	6 (37.50)	Participants experience a sense of togetherness with a large group of friends or family during an important event (e.g., graduation).	"Just the unity; we're all together [...] Being with all my family in an area that I love" (Wave 1, High Point).
Sports & Work Community	4 (25.00)	6 (37.50)	Participants bond with sports team members or co-workers and feel a sense of community.	"Being accepted into a community that you're working in" (Wave 1, Turning Point).

Note. *N* refers to the frequency of a subtheme at a given wave. For example, since *N* = 52 for Friendship at Wave 1, this means this subtheme was observed 52 times across all participants at Wave 1. Percentages are calculated by dividing *N* by the total number of stories told within a given theme at that wave (e.g., Wave 1 Friendship *N* / total number of Love/Friendship themes at Wave 1). For example, the percentage for Friendship at Wave 1 is calculated by (52 / (52+28+15))*100%.
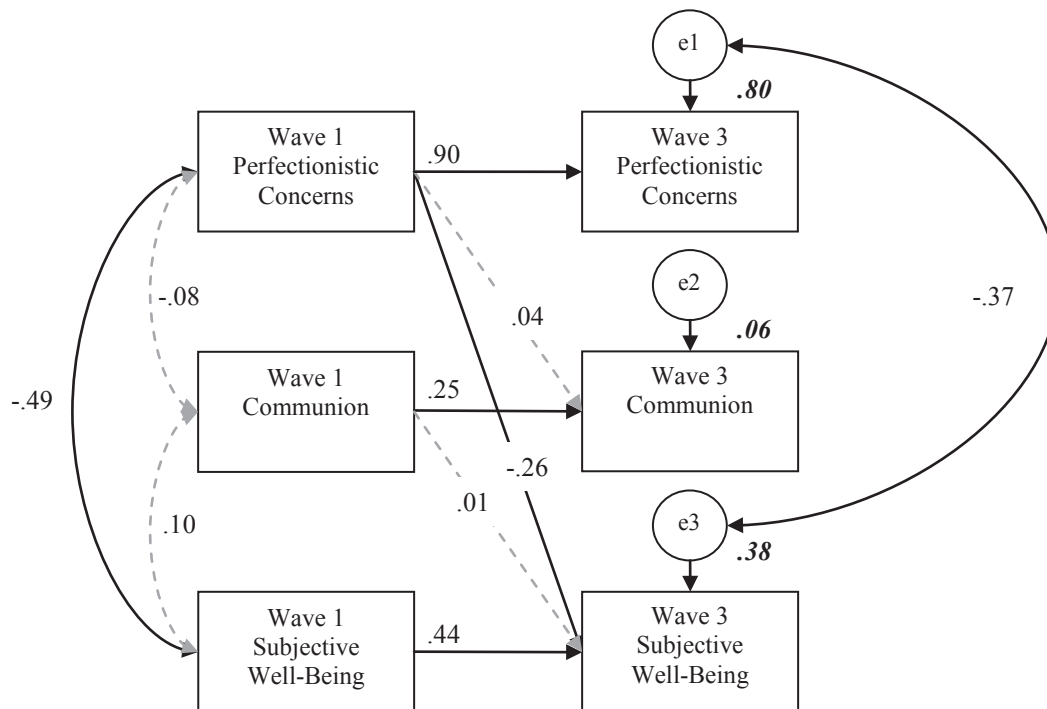
Figure 5.1. Two-wave panel mediation model (actual data). Rectangles represent measured variables. Circles represent residual error terms for endogenous variables. Numbers beside paths represent standardized path coefficients or correlations. Italicized, bolded numbers represent the proportion of variance accounted for by exogenous variables. Solid black lines are statistically significant (*p* < .05). Dotted grey lines are nonsignificant (*p* > .05). A correlated error term between perfectionistic concerns and SWB was included to account for method variance (i.e., both measures involved self-report questionnaires; Cole & Maxwell, 2003).

Chapter 6

Discussion

All four objectives outlined in Chapter 1 were successfully tested. In Chapter 2, I

demonstrated that perfectionistic concerns confer vulnerability for decreased SWB in

freshman students during the transition to university. This finding is consistent with

theory (Hewitt & Flett, 2002), prior evidence (e.g., Chang, 2000; Chang & Rand, 2000;

Cox et al., 2009), and the hypothesis outlined in Objective 1. The results in Chapter 2

also demonstrated that perfectionistic self-presentation mediates the relationship between

perfectionistic concerns and decreased SWB. This finding is also in line with theory (e.g.,

McAdams & Pals, 2006; McCrae & Costa, 1999; see also Figure 1.1), prior research

(Kawamura & Frost, 2004), and the hypothesis outlined in Objective 2.

In Chapter 4, I demonstrated that perfectionistic concerns are positively

associated with themes of agency in autobiographical narratives (i.e., themes of

achievement, status, power, and self-mastery; McAdams et al., 1996). Moreover,

qualitative analyses identified clear themes of performance-related concerns, with

undertones of self-doubt and high standards in the narratives of perfectionistic students.

Together, these results support theory (Frost et al., 1990; Hewitt & Flett, 1991), prior

qualitative research (e.g., Rice et al., 2003; Slaney & Ashby, 1996), and support the

hypotheses outlined in Objective 3. Additionally, the results of Chapter 4 indicate that

perfectionistic cognitions mediate the relationship between perfectionistic concerns and

decreased SWB, consistent with the model outlined in Figure 1.1, and supporting the

hypotheses outlined in Objective 4.

The results in Chapter 5 did not support predictions outlined by the social
disconnection model (Hewitt et al., 2006; Mackinnon et al., 2012; Sherry et al., 2008),
which posits that the relationship between perfectionistic concerns and decreased SWB is
mediated by decreased themes of communion in autobiographical narratives (i.e.,
decreased themes of love, dialogue, caring, and togetherness; McAdams et al., 1996).
Though communion did exhibit acceptable test-retest reliability and good face validity in
qualitative analyses, communion was uncorrelated with perfectionistic concerns and
SWB. This analysis tested predictions in Objective 3, but failed to support the hypotheses
regarding communion. Various explanations for these null results are discussed in
Chapter 5. In sum, excepting the null results in Chapter 5, results from Chapters 2 and 4
provide support for the aforementioned hypotheses.

Methodological Strengths

The 3-wave, 130-day longitudinal design used in my dissertation permits stronger
causal inferences and more advanced statistical analyses compared to cross-sectional
research (i.e., all measurements collected at a single point in time). Cross-sectional tests
of mediation cannot be used to make causal inferences (Cole & Maxwell, 2003) because
temporal precedence cannot be inferred (i.e., for something to play an efficient causal
role it must be demonstrated to reliably precede an outcome in time). Moreover, it cannot
be inferred that outcome variables change over time without controlling for prior levels
of outcome variables. The cross-lagged panel analysis of mediation outlined by Cole and
Maxwell (2003; see also Figures 2.1 and 4.1) overcomes these limitations, permitting
stronger causal inferences than cross-sectional designs. Though longitudinal research
cannot directly test cause-and-effect hypotheses – a domain that necessitates the use of

experimental designs – longitudinal designs with cross-lagged panel tests of mediation are preferred when experimental manipulation is not feasible (Little et al., 2007). To my knowledge, this rigorous analysis has been conducted in only one other paper in the perfectionism literature to date (Rice et al., 2012).

My dissertation research had an impressively low attrition rate (i.e., only 10.2% of participants dropped out by Wave 3). A meta-analysis of 92 longitudinal studies of personality ($N = 50,120$) suggests that the average attrition rate in longitudinal studies is 44%, indicating that the rate of attrition in my dissertation is well below average (Roberts, Walton, & Viechtbauer, 2006). This success can be attributed to a multifaceted, disciplined approach to retaining participants. Participants were sent reminder emails one week and one day before each appointment, and were called once via phone to confirm appointments. With the assistance of seven highly trained research assistants, I was able to be flexible in accommodating convenient times for students to participate, ranging from early morning to late evening. Participant inducements (course credit and/or cash) increased in value at each successive wave. The low rate of missing data permits more powerful and unbiased statistical analyses, and avoids confounds associated with attrition (e.g., participants might systematically drop out of the study for unmeasured reasons; also known as data that are Missing Not At Random; Graham, 2009).

Though student samples are often selected for convenience, I carefully selected from the pool of available postsecondary students to ensure that all participants were undergoing a similar developmental transition. All participants were emerging adults (aged 18 to 25 years; Arnett, 2000) attending a postsecondary institution for the first time in their lives. This sampling approach controls for variation in age and prior university

experience. The timeframes used were also carefully selected. All participants completed

Wave 1 within the first 50 days of fall term. Wave 2 took place during the second half of

fall term (45 days after Wave 1) and Wave 3 took place at the beginning of winter term

(130 days after Wave 1). These waves were selected as a representative cross-section of

the transition to university: Following the initial transition period (Wave 1), following the

stress of mid-terms and final exams (Wave 2), and following the completion of first

semester at university (Wave 3). In the narrative data, participants described their

summer vacation at Wave 1 and their first semester at university at Wave 3. By clearly

outlining a specific period of time for participants to narrate, our ability to make

inferences about temporal precedence was improved compared to prior research on

narratives (e.g., McAdams et al., 2006).

Mixed methods designs (i.e., quantitative and qualitative data collection and

analysis) also represent a significant methodological strength. By combining quantitative

and qualitative methods, researchers can better understand phenomena when compared to

either method in isolation by capitalizing on the strengths of each respective method

(Creswell & Clark, 2006; see also Chapter 3). The use of mixed methods in Chapters 4

and 5 permitted a more nuanced and detailed understanding of the interrelation between

different facets of perfectionistic personality, and is unique in scope within the literature

on perfectionism. In sum, the methodology used in my dissertation is both novel and

rigorous. These methodological strengths allow for stronger arguments compared to

cross-sectional, mono-method research.

Psychology is uniquely situated at the centre of numerous disciplines, drawing on

ideas from many different disciplines, including biology, computer sciences, and

medicine (Bollen et al., 2009). Psychology continues to be an extremely interdisciplinary area of study. Mixed methods research is particularly valuable in psychology because it helps disassemble perceived communication barriers between "hard" sciences (i.e., those using strictly quantitative measures, such as biology, physics, and chemistry) and "soft" sciences (i.e., fields using primarily qualitative methods, such as sociology, anthropology, and the humanities). When thinking about the future of psychology as a unified science almost 20 years ago, Gardner (1992) placed the study of self, personality, will, and consciousness among the most important and unique areas studied in psychology. He noted also that "the study of self or personality is at once a problem of psychology and the home ground of literature" (p. 18), and speculated about possible collaborations between scholars of literature and personality psychologists. With the advent of mixed methods (Creswell & Clark, 2006) and the growing interest in studying life narratives as an important aspect of personality (McAdams & Pals, 2006), the way forward for these collaborations is becoming clearer. As the field progresses, it will be interesting to see how psychologists use literary theories to better understand the storied nature of human lives.

Limitations and Future Directions

Although the use of three measurement occasions in Chapter 2 is a substantial improvement over cross-sectional designs, including four or more measurement occasions would allow researchers to examine non-linear growth over time and would provide greater precision in statistical estimates (Cole & Maxwell, 2003). Because narrative data was only collected at two waves, the results presented in Chapters 4 and 5 only used data from Waves 1 and 3. While this approach is superior to cross-sectional

estimates of mediation, it is less rigorous than approaches using three measurement occasions. Narrative data was not collected at Wave 2 due to lack of research funding. In future research, collecting narrative data at three or more waves would be beneficial.

The choice of time lags between measurement occasions (i.e., 45 days between Wave 1 and Wave 2; 85 days between Wave 2 and Wave 3) was somewhat arbitrary and chosen to account for the difficulty of collecting data from students during Christmas break. It is possible that different results would be found if different time lags were used (e.g., one week, one year). Because there are no clear evidence-based recommendations for time lags between measurement occasions in perfectionism research, future research using different time lags for comparative purposes would be beneficial.

The sample size in my dissertation research ($N = 127$) is fairly large for research involving life narratives (e.g., $N = 47$ in Adler, 2012); however, it is relatively small compared to many longitudinal, mono-method questionnaire studies in the perfectionism literature (e.g., $N = 357$ in Rice et al., 2012). The small sample size limited the statistical techniques available (e.g., structural equation modelling; Kline, 2005) and resulted in a lack of statistical power to detect small effect sizes. Future research should strive to collect larger samples to allow for more complex statistical modelling.

Though selecting a homogenous sample of university students between the ages of 18-25 years who were transitioning to university for the first time helps reduce the impact of potential confounding variables, it comes at the cost of decreased external validity (i.e., generalizability). The reliance on undergraduate samples who have typically grown up in a Western, educated, industrialized, wealthy, and democratic society has been strongly criticized as a shortcoming of virtually all psychology research (Henrich,

Heine, & Norenzayan, 2010). These concerns are very real and limit the external validity of the research. However, students undergoing university transition may be worth studying in their own right given the heightened stress and personality changes that often occur during this developmental period, as well as the heightened risk for anxiety, depression, and alcohol problems (Fisher & Hood, 1987; Hicks & Heastie, 2008; Lodi-Smith et al., 2009). Nonetheless, the present research should not be generalized beyond Western emerging adults transitioning to university. In future research, I would like to study non-student samples in transition periods, such as clinical samples beginning psychotherapy (see Adler & McAdams, 2007), older adults transitioning to retirement, and emerging adults transitioning from high school but not attending university – a population Arnett (2000) refers to as the "forgotten half." When studying populations outside of academia – an environment which, in many ways, places unrealistic demands upon students – we might expect themes of agency in autobiographical narratives to emerge as a more positive, life-enhancing feature. It remains to be seen if themes of agency will retain perfectionistic undertones in these samples. Cross-cultural research studying participants from different societies would also be beneficial.

Some results of this study may be biased by method variance. That is, features of the study design might influence the observed relationships (Barker et al., 2002). Research and theory indicate relationships between variables using a similar measurement approach (e.g., if all variables use self-reported questionnaires) tend to have inflated effect sizes, and are more susceptible to Type I error (Brannik, Chan, Conway, Lance, & Spector, 2010). Further, relationships between two different kinds of measurement (e.g., self-report questionnaire correlated with narrative codes) tend to have

attenuated effect sizes, and are more susceptible to Type II error (Brannik et al., 2010).

Thus, the effect sizes observed in Chapter 2 might be slightly inflated, since only self-

report data were used. On the other hand, the effect sizes for correlations between

perfectionism variables and themes of agency and communion are likely underestimated

in Chapters 4 and 5. Future research should use a multi-trait, multi-method approach

(Campbell & Fiske, 1959) which involves measuring all constructs with multiple

methods (e.g., self-report questionnaire, informant reports, interviews) and analyzing

them together in a single analysis. In future research, I would like to develop a

comprehensive interview measure of perfectionism to combine with interview measures

of well-being (e.g., the Montgomery-Asberg Depression Rating Scale; Williams &

Kobak, 2008) and informant reports of well-being (e.g., reports from close friends) as a

more rigorous test of the relationship between perfectionism and SWB.

Implications for Research on Perfectionism

The evidence presented in this dissertation provides empirical support for the

conceptual model of perfectionism outlined in Figure 1.1. This conceptual model

integrates a wide variety of extant perfectionism research literature, using grand

personality theories as a guide (e.g., McAdams & Pals, 2006). Perfectionism researchers

have not agreed on how the "maladaptive" forms of perfectionism should be defined. Are

the core features of perfectionism self-criticism (Blatt et al., 1976), undue concern over

mistakes and failure (Frost et al., 1990), the perception that others require perfection

(Hewitt & Flett, 1991), a perception of falling short of one's own standards (Slaney et al.,

2001), automatic cognitions surrounding perfection and failure (Flett et al., 1998), a

tendency to present oneself as perfect in public situations (Hewitt, Flett, Sherry, et al.,

2003), and/or a tendency to narrate one's life using perfectionistic themes (see Chapter 4)? Other models of perfectionism continue to emerge (e.g., dyadic perfectionism; Lopez, Fons-Scheyd, Morúa, & Chaliman, 2006; clinical perfectionism; Shafran et al., 2002) and there is no sign of convergence on a single method of measurement. Different measures of perfectionism tend to be positively correlated with one another (e.g., Dunkley et al., 2003; Flett et al., 1998; Hewitt, Flett, Besser, et al. 2003), yet each manages to cover unique conceptual ground. The literature on perfectionism needs to move beyond tests of incremental validity using multiple regression models to see which measure predicts the most variance in outcomes (e.g., Dunkley et al., 2006; Flett et al., 2007), and instead towards the integration of divergent measurement approaches into a single unifying theory. In my view, the most productive way forward in this literature will be to include multiple measures of perfectionism in multi-wave longitudinal designs. In this way, there will be increased comprehension of the dynamic interplay between different components of perfectionism, and a more encompassing understanding of how perfectionistic personality operates.

My dissertation also covers new conceptual ground by studying the ways that perfectionistic students narrate their lives through autobiographical stories. Evidence from Chapter 4 suggests that perfectionistic university students narrate their lives using maladaptive themes of agency, including excessive focus on extrinsically motivated performance-related concerns. The themes identified in Chapter 4 share resemblance to McAdams' (2006) contamination themes: Everything is going perfectly until a perceived failure "ruins" the experience, resulting in negative affect and self-doubt. For example,

the following story coded for Status/Victory because a student successfully won a prestigious scholarship; however, the story ends on a sour note:

> "I had been really hoping for a long time to get […] the biggest scholarship that was offered at [my university], and I got one that was close to it, […] I should have been really excited when I got the letter but instead I was somewhat disappointed, and (pause) I was a bit ashamed of feeling that way because I kind of felt like nothing, nothing was good enough for me" (Wave 1, Turning Point).

Themes of excessively high perfectionistic standards are palpable in the above quote, providing encouraging evidence that perfectionism can be measured from narrative interviews as well as questionnaires. Autobiographical narratives open a window to how people organize and make meaning out of their experiences, as people integrate their reconstructed past and imagined future into an ever-changing sense of identity (McAdams & Pals, 2006). Autobiographical narratives are one of the initial and crucial pieces of information gleaned during clinical interviews; by understanding how perfectionistic people typically narrate their lives, it will be easier for therapists to identify perfectionism and help clients re-author their stories in healthier ways (Morris, 2006; Parry & Doan, 1994). Though there is much research to be done, the ultimate goal is to identify prototypical themes that exist in the autobiographical narratives of perfectionists. With this information, I hope eventually to develop an interview and coding scheme that can measure perfectionistic narratives in a reliable and valid way.

Developmental Implications

Despite their reliance on student samples (e.g., Dunkley et al., 2000; Graham et al., 2010), few perfectionism researchers characterize students within their unique

developmental context. In his influential review, Arnett (2000) argues that the period between ages 18-25 years is a unique developmental stage, which he calls "emerging adulthood." Emerging adulthood is characterized by exploration of new relationships, careers, and identities; it is a time of seemingly limitless possibility and uncertainty about the future. In Eriksonian (1950) terms, emerging adults are on the cusp of transitioning from one stage (identity versus role confusion) to another (intimacy versus isolation). For those emerging adults who choose to attend university (about 24% according to Human Resources and Skills Development Canada, 2011), freshman year is of immense developmental importance. University transition is associated with heightened psychological distress; moreover, first-year students are frequently removed from their social support networks, and enter a stressful environment where their performance is scrutinized, evaluated, and criticized (Hicks & Heastie, 2008). The current results suggest that high levels of perfectionistic concerns make this transition period more difficult.

Chapter 2 suggests that students high in perfectionistic concerns are more likely to respond to their new university environment by managing their public image through excessive self-promotion of perfection and defensive concealment of imperfections (Hewitt, Flett, Sherry, et al., 2003). Though students may engage in perfectionistic self-presentation in an effort to avoid evaluation and criticism from others, this strategy comes at the cost of decreased well-being (see Chapter 2). Presenting a false, "perfect" self to the world might also interfere with the development of close, intimate relationships, since mutual self-disclosure is a key determinant of close interpersonal relationships (Sprecher & Hendrick, 2004). Left untreated, perfectionistic concerns might have more far-reaching developmental outcomes in young adulthood (ages 25-40 years), when the key

developmental task is thought to be developing close, intimate relationships (Erikson,

1950).

Chapter 4 suggests that perfectionistic concerns and perfectionism cognitions

interfere with the development of a healthy, balanced identity. In Chapter 4, results

indicated perfectionistic university students tend to develop an identity based on

extrinsically-motivated performance-related concerns, with undertones of self-doubt and

high standards. The qualitative data showed most students placed a great deal of

importance on academic success. However, many students perform below their high

expectations in university (e.g., poor grades). Students may experience difficulties sorting

out their sense of identity under these circumstances, and may need to re-evaluate their

source of self-worth. It seems likely, however, that perfectionistic students may become

"stuck" in this discrepant state (e.g., I need to perform well, but my actual grades are

below my expectations), potentially leading to a state of identity diffusion (i.e., an

unresolved, uncertain sense of identity). By failing to achieve a healthy sense of identity

as an adolescent, the perfectionistic emerging adult is likely to experience difficulty at

later developmental stages (Erikson, 1950).

Clinical Implications

University counselling centers are becoming increasingly overburdened by

students seeking help for problems related to perfectionism (Benton, Robertson, Tseng,

Newton, & Benton, 2003). Though it is not clear whether perfectionism is on the rise, or

if the demands and expectations of university students are increasing, it is clear that many

students are in need of assistance. In order to quickly and accurately assess clients with

comorbid perfectionism, clinicians need to be well-versed in identifying perfectionism

from autobiographical accounts. Clients do not describe their problems in the form of Likert scales and numbers; instead, they provide detailed qualitative accounts of their personal experiences. Aptly identifying core features of perfectionistic narratives (e.g., maladaptive themes of agency; see Chapter 4) is essential to accurate identification of perfectionistic clients, and ultimately treatment of perfectionism. In particular, the focus on autobiographical narratives has implications for narrative therapy. Narrative therapy emphasizes the form of autobiographical narratives as a means of understanding people and certain types of psychopathology. Narrative therapy proposes: (a) The way people ascribe meaning to their experiences is a key determinant of their well-being; (b) people create meaning through the stories they tell about their lives; (c) the stories people tell are strongly influenced by social, cultural, and political contexts; and (d) psychological problems can be alleviated by helping a client to re-author problematic life narratives in a more positive way (Morris, 2006; Parry & Doan, 1994). Therapeutic approaches relying on narrative theory are effective in alleviating depressive symptoms in clinical trials (e.g., Vromans & Schweitzer, 2010), and there is hope that addressing perfectionistic narratives in a similar fashion might also prove to be efficacious. Indeed, case studies suggest that helping clients with personality disorders to re-author their autobiographical narratives may have clinical utility (Dimaggio, 2011).

Perfectionism must be malleable in order to be amenable to conventional treatment approaches within psychology. Though the results of Chapters 2 and 4 show that perfectionistic adaptations are relatively stable over time (test-retest βs from .63 to .81), there is still substantial variability across a 130-day period. Similarly, perfectionistic narratives exhibited substantial variability across waves (test-retest βs from .16 to .25).

Though perfectionistic concerns was highly stable over time in the present study (consistent with its conceptualization as a personality trait), it should be noted that perfectionistic concerns *can* decrease over time when specifically targeted by psychotherapy. For instance, clinical research suggests traits in the perfectionistic concerns family decrease over the course of cognitive-behavioural therapy for social phobia (Asbaugh, Antony, Liss, Summerfeldt, McCabe, & Swinson, 2007), after recovery from eating disorders (Bardone-Cone, Sturm, Lawson, Robinson, & Smith, 2010), and after a combined cognitive-behavioural and interpersonal approach for treating perfectionistic university students (Kutlesa & Arthur, 2008). Though there is little reason to expect changes in perfectionistic concerns when left untreated – indeed, the evidence suggests it is highly stable over time in short-term longitudinal studies of samples that are not undergoing treatment (e.g., Graham et al., 2010) – it is notable that even deeply ingrained, trait-like aspects of perfectionism are amenable to change with targeted treatment programs over longer periods of time. Given the common and clear problems that perfectionistic concerns causes for many university students (Kutlesa & Arthur, 2008), including a module on perfectionism into existing social support programs designed to ease the transition to university for freshman students (e.g., the T2U program; Pratt et al., 2000) might prove useful in the future.

Concluding Thoughts

In many ways, the life narratives in the present work are the most compelling data. These narratives capture a deeper, more nuanced understanding of how perfectionism operates in the lives of individual people. Take the following quote from a student in the 96th percentile on Wave 1 perfectionistic concerns as an example:

"It was almost embarrassing for me to have people go 'oh my God she didn't get

the highest average' and um it was just, it was really disappointing and it sounds

like I know I should have been happy to have such a high average, but […] I just

felt I'd let everyone down. My average was something like 97.7% and […] I

didn't want to go to graduation, I just wanted to like sit in my room" (Wave 1,

Low Point Story).

Perfectionistic themes pervade this story. There are examples of unrealistically high standards, perceived pressure from other people, and rigid black-and-white thinking involving success and failure. Despite evident achievement at a very high level, this student felt like a failure because of a relatively minor imperfection (i.e., she missed having the highest grade by 0.1%). There are also deep undertones of shame in this narrative. This perfectionistic young woman feels unworthy of love and acceptance because she thinks she is not good enough; in her world, others' acceptance is contingent on perfect performance. This quote (and many more like it in the data) are particularly poignant, and provide more information about how perfectionism operates in the day-to-day lives of people than quantitative measures alone.

Over 15 years ago, McAdams (1996) raised the question: "What do we know when we know a person?" (p. 301). We know that people cannot be fully understood using only a collection of quantitative dimensions of personality. To truly understand people in a practical, intimate way, we need to know their stories. Our life story is what makes us uniquely *human*. Stories provide humans a means to share similarities and differences, and are a fundamental method of communication in our social world. As psychologists, we cannot ignore this aspect of human personality if we desire to truly

understand people. This dissertation represents a crucial first step towards

conceptualizing perfectionistic personality in a more complete, holistic way using both

quantitative measures and autobiographical narratives. It is my sincere hope that the field

of personality psychology will do the same, so that we can develop a greater

understanding of the complexity of human personality.

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Appendix A: Questionnaires

Demographic Questionnaire

1. Your age: _____ years

2. Your sex:
male _____ female _____

3. Your ethnicity (e.g., Asian, Caucasian/White, First Nations, etc.): _____

4. Your mother's ethnicity: _____

5. Your father's ethnicity: _____

6. Your country of birth: _____

7. Your mother's country of birth: _____

8. Your father's country of birth: _____

9. How long have you lived in Canada? _____ years

10. Your relationship status (check one):
single _____
dating _____
separated _____
married _____
divorced _____
cohabiting (i.e., living with your partner) _____
widowed _____
other (please specify) _____

11. Your number of years of formal education (i.e., from kindergarten to the present) _____

12. Your year of study in university (e.g., 1st):
_____

13. Your major in university (e.g., Economics):
_____ note: "undecided" or "undeclared" may be listed as a major

14. Check the option that best describes your employment situation:
I work full-time _____
I work part-time _____
I am unemployed _____
I am a homemaker _____
I am retired _____
other (please specify)
_____

15. Check the option that best describes your Educational situation:
I am a part-time student _____
I am a full-time student _____
other (please specify)
_____

16. What year did you graduate high school? (e.g. 2010)
_____

Short-Form Hewitt and Flett Multidimensional Perfectionism Scale (Hewitt & Flett, 1991)

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you ***strongly agree***, circle 7; if you ***strongly disagree***, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided, the midpoint is 4.

These questions are about the kind of person you generally are, that is, how you usually have felt or behaved **over the past several years.**

	Strongly Disagree					Strongly Agree

Socially Prescribed Perfectionism
(Sample Items)

1. Success means that I must work even harder to please others   1 2 3 4 5 6 7

2. The better I do, the better I am expected to do   1 2 3 4 5 6 7

This scale is copyrighted and cannot be printed in full here. For more sample items, see Hewitt & Flett (1991)

Self-Oriented Perfectionism
(Sample Items)

1. One of my goals is to be perfect in everything I do   1 2 3 4 5 6 7

2. I strive to be as perfect as I can be   1 2 3 4 5 6 7

This scale is copyrighted and cannot be printed in full here. For more sample items, see Hewitt & Flett (1991)

Short-Form Frost Multidimensional Perfectionism Scale (Frost et al., 1990)

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you *strongly agree*, circle 5; if you *strongly disagree*, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 5. If you feel neutral or undecided, the midpoint is 3.

These questions are about the kind of person you generally are, that is, how you usually have felt or behaved **over the past several years**.

	Strongly Disagree				Strongly Agree
Concern Over Mistakes					
1. If I fail at work/school, I am a failure as a person	1	2	3	4	5
2. If someone does a task at work/school better than I, then I feel like I failed the whole task	1	2	3	4	5
3. If I fail partly, it is as bad as being a complete failure	1	2	3	4	5
4. If I do not do as well as other people, it means I am an inferior human being	1	2	3	4	5
5. The fewer mistakes I make, the more people will like me	1	2	3	4	5
Doubts About Actions					
6. Even when I do something very carefully, I often feel that it is not quite right	1	2	3	4	5
7. I usually have doubts about the simple everyday things I do	1	2	3	4	5
8. I tend to get behind in my work because I repeat things over and over	1	2	3	4	5
9. It takes me a long time to do something "right."	1	2	3	4	5
Personal Standards					
10. It is important to me that I be perfect in everything I do	1	2	3	4	5
11. I set higher goals than most people	1	2	3	4	5
12. Other people seem to accept lower standards from themselves than I do	1	2	3	4	5
13. I expect higher performance in my daily tasks than most people	1	2	3	4	5

Perfectionistic Self-Presentation Scale (Hewitt et al., 2003)

Listed below are a group of statements. Please rate your agreement with each of the statements using the following scale. If you strongly agree, circle 7; if you disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between 1 and 7. If you feel neutral or undecided, the midpoint is 4. Consider your thoughts and behaviours **during the last 7 days.**

DURING THE PAST 7 DAYS…

	Strongly Disagree			Neutral		Strongly Agree	
1. It was okay to show others that I am not perfect	1	2	3	4	5	6	7
2. I judged myself based on the mistakes I made in front of other people	1	2	3	4	5	6	7
3. I would have done almost anything to cover up a mistake	1	2	3	4	5	6	7
4. Errors were much worse if they were made in public rather than in private	1	2	3	4	5	6	7
5. I always tried to present a picture of perfection	1	2	3	4	5	6	7
6. I thought it would be awful if I made a fool of myself in front of others	1	2	3	4	5	6	7
7. I tried to seem perfect so others would see me more positively	1	2	3	4	5	6	7
8. I brooded over mistakes that I made in front of others	1	2	3	4	5	6	7
9. I never let others know how hard I worked on things	1	2	3	4	5	6	7
10. I wanted to appear more competent than I really am	1	2	3	4	5	6	7
11. It didn't matter if there was a flaw in my looks	1	2	3	4	5	6	7
12. I did not want people to see me do something unless I was very good at it	1	2	3	4	5	6	7
13. I always kept my problems to myself	1	2	3	4	5	6	7

	Strongly Disagree		Neutral			Strongly Agree	
14. I thought that I should solve my own problems rather than admit them to others	1	2	3	4	5	6	7
15. I had to appear to be in control of my actions at all times	1	2	3	4	5	6	7
16. It was okay to admit mistakes to others	1	2	3	4	5	6	7
17. It was important to act perfectly in social situations	1	2	3	4	5	6	7
18. I didn't really care about being perfectly groomed	1	2	3	4	5	6	7
19. I thought that admitting failure to others would be the worst possible thing	1	2	3	4	5	6	7
20. I hated to make errors in public	1	2	3	4	5	6	7
21. I tried to keep my faults to myself	1	2	3	4	5	6	7
22. I did not care about making mistakes in public	1	2	3	4	5	6	7
23. I needed to be seen as perfectly capable in everything I did	1	2	3	4	5	6	7
24. I thought that failing at something would be awful if other people knew about it	1	2	3	4	5	6	7
25. It was very important that I always appeared to be "on top of things"	1	2	3	4	5	6	7
26. I had to always appear to be perfect	1	2	3	4	5	6	7
27. I strived to look perfect to others	1	2	3	4	5	6	7

<u>Perfectionism Cognitions Inventory (Flett, Hewitt, Blankstein, & Gray, 1998)</u>

Listed below are a variety of thoughts that sometimes pop into people's heads. Please read each thought and indicate how frequently, if at all, the thoughts occurred to you **during the last 7 days.** Please read each statement carefully and *circle* the appropriate number, using the scale below.

0 = Not At All
1 = Sometimes
2 = Moderately Often
3 = Often
4 = All Of The Time

1.	Why can't I be perfect?	0	1	2	3	4
2.	I need to do better	0	1	2	3	4
3.	I should be perfect	0	1	2	3	4
4.	I should never make the same mistake twice	0	1	2	3	4
5.	I've got to keep working on my goals	0	1	2	3	4
6.	I have to be the best	0	1	2	3	4
7.	I should be doing more	0	1	2	3	4
8.	I can't stand to make mistakes	0	1	2	3	4
9.	I have to work hard all the time	0	1	2	3	4
10.	No matter how much I do, it's never enough	0	1	2	3	4
11.	People expect me to be perfect	0	1	2	3	4
12.	I must be efficient at all times	0	1	2	3	4
13.	My goals are very high	0	1	2	3	4
14.	I can always do better, even if things are almost perfect	0	1	2	3	4
15.	I expect to be perfect	0	1	2	3	4
16.	Why can't things be perfect?	0	1	2	3	4
17.	My work has to be superior	0	1	2	3	4

18. It would be great if everything in my life was perfect   0   1   2   3   4

19. My work should be flawless   0   1   2   3   4

20. Things are seldom ideal   0   1   2   3   4

21. How well am I doing?   0   1   2   3   4

22. I can't do this perfectly   0   1   2   3   4

23. I certainly have high standards   0   1   2   3   4

24. Maybe I should lower my goals   0   1   2   3   4

25. I am too much of a perfectionist   0   1   2   3   4

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

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

DURING THE PAST 7 DAYS ...

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1. In most ways my life was close to my ideal	1	2	3	4	5	6	7
2. The conditions of my life were excellent	1	2	3	4	5	6	7
3. I was satisfied with my life	1	2	3	4	5	6	7
4. I thought that, so far, I have gotten the important things I want in life	1	2	3	4	5	6	7
5. I thought that, if I could live my life over, I would change almost nothing	1	2	3	4	5	6	7

**Positive and Negative Affect Schedule: Positive and Negative Affect Subscales
(Watson & Clark, 1998)**

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way **during the past 7 days**. Use the following scale to record your answers:

DURING THE PAST 7 DAYS I FELT …

	Very Slightly or not at all	A little	Moderately	Quite a bit	Extremely
Negative Affect					
1. Afraid	1	2	3	4	5
2. Scared	1	2	3	4	5
3. Nervous	1	2	3	4	5
4. Jittery	1	2	3	4	5
5. Irritable	1	2	3	4	5
6. Hostile	1	2	3	4	5
7. Guilty	1	2	3	4	5
8. Ashamed	1	2	3	4	5
9. Upset	1	2	3	4	5
10. Distressed	1	2	3	4	5
Positive Affect					
11. Active	1	2	3	4	5
12 .Alert	1	2	3	4	5
13. Attentive	1	2	3	4	5
14 .Determined	1	2	3	4	5
15.Enthusiastic	1	2	3	4	5
16 .Excited	1	2	3	4	5
17. Inspired	1	2	3	4	5
18. Interested	1	2	3	4	5
19. Proud	1	2	3	4	5
20. Strong	1	2	3	4	5

Appendix B

Guided Autobiography Interview Protocol

Preamble to the Interview

✓ "This is an interview about the <u>story</u> of your life. We are interested in your life leading up to you coming to university. Specifically, we are interested in your life between [May 1st and August 31st **OR** September 1st and December 31st] of this year."

✓ "We are asking you to play the role of storyteller about your own life -- to construct for us the story of this 4-month period. People's lives vary tremendously, and people make sense of their own lives in a wide variety of ways. As social scientists, our goal is to collect as many different life stories as we can in order to begin the process of understanding of how people make sense of their own lives. Therefore, we are collecting and analyzing life stories of freshman university students and we are looking for significant commonalities and significant differences in those life stories that students tell us."

✓ "The interview should not be seen as a 'therapy session.' This interview is for research purposes only, and its sole purpose is the collection of data concerning people's life stories. Your responses are fully confidential: However, please keep in mind that we may have a duty to disclose information to the proper authorities if you talk about abuse or neglect of a child, an adult in need of protection, plans to commit suicide, or planning to harm another person."

✓ "In telling us a story about your experiences, you do not need to tell us everything that has ever happened to you. A story is selective. It may focus on a few key events, a few key relationships, a few key themes which stand out in your story. In telling your own story, you should concentrate on material in your own life that you believe to be important in some fundamental way -- information about yourself and your life which says something significant about you and how you have come to be who you are. Your story should tell how you are similar to other people as well as how you are unique."

✓ "In order to complete the interview within, say, 30 minutes or so, we would like you to concentrate on a few key events that may stand out in important ways in the story. A key event should be a specific happening, a critical incident, a significant episode in your past set in a particular time and place. It is helpful to think of such

an event as being a specific moment in your life story which stands out for some reason. For example, an important conversation you had with your mother in the kitchen in November might qualify as a key event in your life story. These are particular moments set in a particular time and place, complete with particular characters, actions, thoughts, and feelings. A week-long vacation -- be it very happy or very sad or very important in some way -- on the other hand, would not qualify as a key event because it takes place over an extended period of time. (Unless, of course, you chose a single, specific scene or event from that week.)"

✓ "I am going to ask you about four specific life events. For each event, describe in detail what happened, where you were, who was involved, what you did, and what you were thinking and feeling in the event. Also, try to convey what impact this key event has had in your life story and <u>what this event says about who you are or were as a person.</u> Please be very specific here."

✓ *Participant will be provided with a handout which lists the above paragraph for reference during the interview*

✓ "Before we begin, do you have any questions?"

✓ ***You are to read the below script exactly as it is written. Of course if participants ask for clarification, or if you need to ask a participant for further clarification on their answers, you may respond in a more natural, conversational way. Wherever possible though, stick to the script!***

✓ ***Please also note that the ORDER in which you will ask each of the four interview questions will change from participant to participant. This counterbalancing is necessary to control for order effects. In the binder you will find a sheet called "Participant Counter Balancing Order." This sheet will tell you what order to ask the questions in for each participant.***

<u>Narrative Interview</u>

<u>REMEMBER TO START THE AUDIO RECORDER BEFORE ASKING THESE QUESTIONS!!!!</u>

#1 High Point/Peak Experience

✓ "First, we would like you to tell us about a peak experience that occurred <u>between [May 1st and August 31st **OR** September 1st and December 31st] of this year</u>**.** A peak experience would be a high point -- perhaps <u>the</u> high point -- during this four

month period of your life. It would be a moment or episode in which you experienced positive emotions, like joy, excitement, great happiness, inspiration, or even deep inner peace. Today, the episode would stand out in your memory as one of the best, highest, most wonderful scenes or moments that occurred during this period. Please describe in some detail a peak experience, or something like it, that you have experienced between [May 1st and August 31st **OR** September 1st and December 31st] of this year. Tell me exactly what happened, where it happened, who was involved, what you did, what you were thinking and feeling, what impact this experience may have had upon you, and **what this experience says about who you were or who you are as a person."**

#2 Low Point

- ✓ "Next, we would like you to tell us about a low point in your life that occurred between [May 1st and August 31st **OR** September 1st and December 31st] of this year. This story is the opposite of a peak experience. Try to remember a specific experience in which you felt negative emotions, such as despair, disillusionment, fear, guilt, etc. You should consider this experience to represent one of the 'low points' of your life during this 4-month period. Even though this memory is unpleasant, we would still appreciate an attempt on your part to be as honest and detailed as you can be. Please remember to be specific and to answer all the questions indicated on your cue card."
- ✓ *After the participant has had a chance to describe the event, and appears to be finished speaking, the interviewer can ask the participant questions to ensure that all the questions on their cue card were answered. Again, do not interrupt the participant with these questions; instead, wait until they have stopped speaking of their own volition.*
- ✓ *You may ask questions about any of the following, if they did not answer any given question on the cue card:* "Tell me exactly what happened, where it happened, who was involved, what you did, what you were thinking and feeling, what impact this experience may have had upon you, and what this experience says about who you were or who you are as a person."
- ✓ *Asking the participant for further clarity at the end is also acceptable, if you had difficulty following their story at any given point.*

#3 Turning Point

- ✓ "In looking back on one's life, it is often possible to identify certain key 'turning points' -- episodes through which a person undergoes a large or important change. Turning points can occur in many different areas of a person's life -- in relationships with other people, in work and school, in outside interests, and so

on. I am especially interested in a turning point <u>in your understanding of yourself</u>. Please identify a particular episode in your life story that occurred <u>between [May 1st and August 31st **OR** September 1st and December 31st] of this year</u> that you now see as a turning point. If you feel that your life story contains no turning points, then describe a particular episode in your life period that comes closer than any other to qualifying as a turning point during this 4-month period. Please remember also to answer all the questions indicated on your cue card."

- ✓ *Questions on the Cue Card:* "Tell me exactly what happened, where it happened, who was involved, what you did, what you were thinking and feeling, what impact this experience may have had upon you, and what this experience says about who you were or who you are as a person."
- ✓ *Note: If subject repeats an earlier event (e.g., peak experience, low point) for this question or any subsequent question, ask him or her to choose another one. Each of the four critical events in this section should be independent. We want four separate events.*

#4 One Other Important Scene

- ✓ "Describe one more event that occurred <u>between [May 1st and August 31st **OR** September 1st and December 31st] of this year</u> that stands out in your memory as being especially important or significant in some way. Please remember to be specific and to answer all the questions indicated on your cue card."
- ✓ *Questions on the Cue Card:* "Tell me exactly what happened, where it happened, who was involved, what you did, what you were thinking and feeling, what impact this experience may have had upon you, and what this experience says about who you were or who you are as a person."

- ✓ <u>"Okay, we're almost at the end of the interview now. Is there anything else you would like to add?" *[Wait for a response, in case they have something to say. Most people won't though]*.</u>

- ✓ <u>"Okay, that's great. The interview is done."</u>

Appendix C: Transcriptionist Instructions

GENERAL INSTRUCTIONS

The **transcriber** shall transcribe all interviews using the following formatting:

1. Times New Roman 12-point face-font
2. One-inch top, bottom, right, and left margins
3. All text shall begin at the left-hand margin (no indents)
4. Entire document shall be left justified
5. Document should be single spaced, with one blank line between sections (i.e., between questions, to separate interviewer & participant responses).

Labeling Interview Transcripts
Each transcript shall include the following labeling information at the top of the document:

Example:
Participant ID #: 999
Phase: 1
Date: January 1, 2010
Total Length of Interview: 22 minutes, 15 seconds
Interviewed by: Sean Mackinnon
Transcribed by: Natalie Gyenes
Double Checked by: Sean Mackinnon, January 25, 2010

See the end of this document for more information on double-checking. As a rule, nobody double-checks their own transcription. The double checking is done by another person, so this part can be left blank until the file is double checked.

Documenting Comments
Comments or questions by the Interviewer should be labeled by typing "**I:**" at the left margin. Any comments or responses from participants should be labeled with **P:** at the left margin. Each response should be separated by a blank line.

Example
I: OK, before we begin the interview itself, I'd like to confirm that you have read and signed the informed consent form, that you understand that your participation in this study is entirely voluntary, that you may refuse to answer any questions, and that you may withdraw from the study at any time.

P: Yes, I had read it and understand this.

I: Do you have questions before we proceed?

End of Interview
In addition, the transcriber shall indicate when the interview session has reached completion by typing END OF INTERVIEW in uppercase letters on the last line of the transcript. A single blank line should precede this information.

Example:

I: Is there anything else that you would like to add?

P: Nope, I think that about covers it.

I: Well, thanks for taking the time to talk with me today. I really appreciate it.

END OF INTERVIEW

CONTENT

Audio recordings shall be transcribed verbatim (i.e., recorded word for word, exactly as said), including any nonverbal or background sounds (e.g., laughter, sighs, coughs, claps, snaps fingers, pen clicking, etc.).

- Nonverbal sounds uttered by the participant shall be typed in parentheses, for example, (laughs), (groans), (loud bang), etc.
- Filler words uttered by the participant such as hm, huh, mm, mhm, uh huh, um, mkay, yeah, yuhuh, nah huh, ugh, whoa, uh oh, ah, and ahah should be transcribed, but do not need to be placed in parentheses.

Example:
P1: I was, like, um, wondering what I should do (laughs).

- If the interviewer makes any nonverbal sounds (e.g., laughs) or response tokens (i.e., where the interviewer is signifying interest or understanding by briefly responding with things "right," "okay," "wow," "uh huh," etc.) when the participant is speaking, these utterances should be transcribed and placed in square brackets [ ].

Example:
P1: It was a really tough day, you know? [yeah] So I just did my best.

- If interviewers or interviewees mispronounce words, these words shall be transcribed as the individual said them. The transcript shall not be "cleaned up" by removing foul language, slang, grammatical errors, or misuse of words or concepts.

- If an incorrect or unexpected pronunciation results in difficulties with comprehension of the text, the correct word shall be typed in square brackets. A forward slash shall be placed immediately behind the open square bracket and another in front of the closed square bracket.

Example:
P: I thought that was pretty pacific [/specific/], but they disagreed.

Inaudible Information
The transcriber should identify portions of the audiotape that are inaudible or difficult to decipher. If a relatively small segment of the tape (a word or short sentence) is partially unintelligible, the transcriber shall type the phrase "inaudible" This information shall appear in parentheses ( ).

Example:
The process of identifying missing words in an audiotaped interview of poor quality is (inaudible).

If a lengthy segment of the tape is inaudible, unintelligible, the transcriber shall record this information in parentheses on a separate line. In addition, the transcriber shall provide a time estimate for information that could not be transcribed.

Example:
I: So, how did that make you feel?

(Inaudible: 2 minutes of interview missing)

Overlapping Speech
If individuals are speaking at the same time (i.e., overlapping speech) and it is not possible to distinguish what each person is saying, the transcriber shall place the phrase "cross talk" in square brackets immediately after the last identifiable speaker's text and pick up with the next audible speaker.

Example:
P: Turn taking may not always occur. People may simultaneously contribute to the conversation; hence, making it difficult to differentiate between one person's statement [cross talk]. This results in loss of some information.

Pauses
If an individual pauses briefly between statements or trails off at the end of a statement, the transcriber shall use three ellipses. A brief pause is defined as a 2 to 3 second break in

speech.

Example:
P: Sometimes, a participant briefly loses . . . a train of thought or . . . pauses after making a poignant remark. Other times, they end their statements with a clause such as but then . . .

If a substantial speech delay occurs (more than 3 seconds), the transcriber shall use "long pause" in parentheses.

Example:
P: Sometimes the individual may require additional time to construct a response (long pause). Other times, he or she is waiting for additional instructions or probes.

Questionable Text
If the transcriber is unsure of the accuracy of a statement made by a speaker, this statement shall be placed inside parentheses and a question mark placed in front of the open parenthesis and behind the close parenthesis.

Example:
P: I wanted to switch to ?(Kibuli Hospital)? if they have a job available for me because I think the conditions would be better.

Sensitive Information
If an individual uses his or her own name during the discussion, the transcriber shall replace this information with the participant's ID number in the study.

Example (assuming this was participant ID #001):
P: My supervisor said to me, "P001, think about things before you open your mouth."

If an individual provides the names of other people, do not write out the full name used. Instead, record only the first letter of the name given, written as a capital letter (i.e. Mary becomes "M," Mr. Smith becomes "S", John Doe becomes "J").

Other sensitive information that is not a name (e.g., locations, organizations) should be indicated with an equal sign immediately before and after the named information. Analysts will use this labeling information to easily identify other sensitive information that may require substitution.

Example: **P:**   My colleague J was very unhappy in his job so he started talking to his supervisor at =Dalhousie University= about a different job.

REVIEWING FOR ACCURACY

A subset of transcripts will be double-checked by another person. The proofreader will listen to the transcript while reading along with the written transcript to check for accuracy (e.g., does it match what the participant actually said?) and/or mistakes in following the protocol (e.g., failing to put a long pause in parentheses). Any changes (if necessary) will be made in the transcript by this proofreader, and placed in <mark>yellow highlight</mark> so that it is clear what segments have been changed. Make sure also to fill out the "Double checked by:" section at the beginning of the transcript with your name and the date double-checked.

Example:

Original: Long pause, Overall, it was a great day.
Proofread: <mark>(long pause)</mark> Overall, it was a great day.

Appendix D: Sample Interview Transcript

Participant ID#: =Omitted to preserve anonymity=
Wave: 1
Total Length of Interview: 27 minutes, 29 seconds
Interviewed by: Sean Mackinnon
Transcribed by: Natalie Gyenes
Double Checked by: Sean Mackinnon, October 29, 2010

Note: This transcript has been purged of identifying material. When the transcript was altered to preserve anonymity, the sections were identified with the "=" symbol on each side of the altered text.

TURNING POINT STORY

I: Alright, so the first question that I'd like to ask you about, in looking back on one's life it's often possible to identify certain key turning points. These are episodes in which a person undergoes a large or important change of some sort. Uh, turning points can occur in many different areas in your life, in relationships with other people and work, school, outside interests, and so on. I am especially interested in a turning point in your understanding of yourself, if you can think of one. Please identify a particular episode in your life, a story that occurred between the May 1 and August 31 period that you see as a turning point in your life. If you feel your story in this time doesn't have any turning points, then just describe a particular episode that comes closer to any other that will qualify for this, and just remember to answer the questions on the cue-card.

P: Okay… um… I guess one would be the very beginning of May when I got my like scholarship letter and stuff for =a Canadian University=, [okay] um, I had been really hoping for a long time to get one of the, one of the =prestigious= scholarships, the the biggest scholarship that was offered at =my university= [wow], and um I got one that was close to it, so it'll still be enough that I don't have student debt, but it wasn't exactly what I'd hoped for, and I should have been really excited when I got the letter but instead I was somewhat disappointed, and um … I was a bit ashamed of feeling that way because I kind of felt like nothing, nothing was good enough for me, and it should have, I should have been really pleased with that cuz that's a big accomplishment, and it'll help me a lot in the future, having this scholarship. So ... I don't know ... and then when I showed my parents the letter and they saw that I was disappointed, they were somewhat annoyed (laughs) [laughs] that I was disappointed with getting this letter so it was kind of um a bittersweet thing that I just kind of realized that I need to… be a bit more, I don't know, not so hard on myself, and… um… just accept things as they come and not feel let down when good things happen. And I should not try and be so much of a fer, perfectionist when that kind of stuff happens, I guess, um yeah. So, now I've learned to appreciate it

more, and I am certainly not disappointed that I didn't get the biggest scholarship, because it's still helping me out quite a bit this year [mmhmm]. Um ... yeah.

I: Okay, so when you actually got the letter, where were you?

P: Um, I was … outside the front of my house, um, and I was home alone, and then my parents came home later, and I'd spent a little while thinking about it before I told them and showed them the letter and they were, they were really happy about it, I was kind of trying to fake that I was happy [alright] … um … yeah…

I: Okay, and what do you think this event says about who you are, or were as a person?

P: Um… I think I was… a bit too much of a perfectionist [mhmm] and um … I set somewhat impossibly high standards for things that I couldn't really control, such as awarding scholarship – you can't control, you can just try your best [mhmm]. Um so I think in some ways I was setting myself up for disappointment, and um now I've learned kind of not to do that, so, yeah.

LOW POINT STORY

I: Yeah okay, great, thank you. Now move onto the second scene … uh …okay, so this time I'd like you just to tell us about a low point in your life, that occurred between that May 1st to August 31st period. So it's sort of like the opposite of a higher peak experience, so you try to remember a specific experience where you felt negative emotions like despair, disillusionment, fear, guilt, or anything like that, and you should consider it, the experience represents one of the low points in that four month period. Even though it's unpleasant, we would appreciate an attempt to be honest and as detailed as you can be.

P: Um ... okay, in very early July, I was on holiday in =a Canadian province= with two good friends of mine that graduated with me, and my mother [right], and um we were sitting around in our hotel room and I was exhausted, and typically I go to bed early and I'm very studious, my two friends are not, and they were kind of hazing me and mocking me because I was so studious and um didn't have a very exciting life – so that was, um, quite depressing, and (laughs) [yeah] and I was quite upset about that just because I was happy with my life, and I felt like I was accomplishing goals that I'd set for myself, and um I was leading a mostly productive life, and um it was just uh rather disappointing to find that when other people were looking at my life, they were seeing something that was not exciting, not fun (laughs) and dull and boring and any other adjectives that are similar [right] so that was, yeah that was rather disappointing and put a damper on the holiday for sure because they would go out and do things and I was a bit reluctant or was exhausted because it was very humid and hot out, um … yeah. So, this year, I decided to kind of focus more on striking a balance between studying for school and enjoying =the

city I live in= and enjoying life and having more fun. So I guess in that sense it has had a positive impact on me. [okay]

I: So what did you, in the scene you were thinking of, what did you end up doing when they were hazing you sort of?

P: Um… (laughs) what did I do, we sat around, we compromised, we watched TV for a while and I went to bed early (laughs) and um… yeah… and still felt quite, quite upset [right] and then just kind of tried to forget about it and enjoy (laughs) the rest of the holiday with them.

I: And what do you think this event says about who you are or were as a person?

P: Um… I guess that in some sense it says that I was a bit too sensitive as to what other people think, when it shouldn't really matter that much. Um, I think I am still that way, so I don't think any of that has changed. Um… but, yeah, just was overly sensitive to maybe what wasn't meant to be a hurtful comment, mostly just a kind of joking around but it was taken as a hurtful comment [right, I understand, okay].

HIGH POINT STORY

I: So this time we're going to talk about a high point or peak experience. So we want you to tell us about a peak experience that occurred between May 1st and August 31st. This would be a high point, or maybe the high point during this four month period of your life, so it's a moment where you experienced positive emotions like joy, excitement, happiness, inspiration, inner peace, anything like that. So today this episode would stand out in your memory as one of the best, uh, highest, most wonderful scenes that occurred during that period of time. Please describe in some detail the peak experience or something like it that you experienced during the past four months.

P: Um, okay, I guess it's pretty obvious, one that stands out for me was, was like our our graduation ceremony and um banquet that happened afterwards [right]. Um, the banquet was held at like the nicest hotel in =a Canadian City=, and it was just really nice to to sit at a big round table with all my friends, a lot of them have lost contact in the last year with too much schoolwork and sports activities and everything else. So it was really nice to to reconnect with all my good friends, um, for grad there were a bunch of us that were leaving so it was kind of a goodbye and celebration but it was still really really positive and um I don't know, it was nice to just relax for one evening, we just finished all of our exams so it was really no stress and we were, yeah, so it was a really positive, um, … impact on me, I guess… (tongue clicking) I don't know, just that it's a really positive memory I have of high school that's any maybe negative memories of high school are kind of overshadowed by by graduating and celebrating with all my friends [mmhmm] um… I'm not sure what this says about me as a person (laughs) um… yeah I'm not sure

what it says about me as a person, or, also um, during the summer especially near the end of the summer, um, I really started having a lot of fun at my job, I work at kind of a tourist um destination place in =a Canadian city= tourist attraction, and um, just really having positive experiences with all my colleagues and um, having a lot of fun at work, and seeing that even if you know my job isn't really glamorous, I mean I pick up garbage sometimes which is gross, um, that it's possible to have fun in any job as long as you're with the right people, and um that was just a really positive whole summer working with um really enthusiastic people and I guess it taught me my type of personality, and that I enjoy being around a large group of people and working in a team, so yeah that's kind of what it taught me about myself.

I: Okay, so you kind of tell two stories there, if you were to pick one of the two that you thought was the high point, would it be something about the job? Or would it be the graduation ceremony?

P: I think it would actually be the job. [yeah] I think it was, yeah, more positive point even than grad.

I: Okay, do you think you could pick out like maybe a moment or a scene from that job that you recall being important?

P: Um… I guess we we sell tickets and when there's a huge lineup of cars sometimes it can be a bit, um I can feel a bit, I don't know, anxious about helping everyone but at the same time it's great to just be working in a big team and if everyone has a positive attitude it really became a lot of fun, even if there was a huge lineup of people we were helping just working in a big team and everyone's joking around when we have a spare minute and everyone's, you know, helping each other out if we need help, and um yeah just everyone smiling and that would be really the high point and specific part of my job that I really enjoyed.

I: Okay, so when you were doing that part of your job what were you … what's like going through your mind? What are you thinking and feeling when you do it?

P: Um… I'm thinking I guess at first like trying to remember all the customer service stuff and helping the like customer I am helping, but at the same time taking note of everything else that's happening around me and what all the other staff that I am working with are doing, and seeing if I can help them or if I need help, looking to someone who can help me. Um, I guess I'm thinking about maintaining a positive attitude if I'm getting tired, remembering to smile and to make a joke if someone else is looking like they're kind of getting tired, um, yeah. Guess that's mostly what I'm thinking about.

I: okay, uh and what impact do you think the job had?

P: Umm (long pause) umm… mostly that it just kind of taught me what skills I enjoy using like working with the public and working in a team, umm, those things I hadn't really realized before, I just kind of thought of my job as a way to make money. But now I kind of see it as a way to grow as a person, and to, um, you know, figure out what other skills I have that I can use later. Um, (inaudible) yeah, so that's what that impacted me.

OTHER IMPORTANT EVENT

I: Okay, that's great, thank you. Alright, so we're going to, this next one is a little more general. It says, we want you to describe one more event that occurred between May 1st and August 31st, uh stands out in your memory as being especially important and significant in some way to you. And uh describe it again using the questions on your cue card.

P: Um, okay. Um I guess near the end of August I think it was the 24th of August, we had kind of a going away barbeque for myself and four of my other very good friends who were moving away from me from =a Canadian city= to go to university, um so we were all kind of sitting around in my best friend's backyard and um just having a good time, had a potluck dinner, played some games, and then some people had to leave early so it was kind of like oh, alright, well now we'll say goodbye and won't see you for the next four to eight months depending on if we're coming home for Christmas or not. Um, so that was pretty significant because some, some of my friends, especially the ones staying in =a Canadian city= that weren't moving away, for them it seemed like it wasn't really a big deal because not much was really changing for them, they'll still keep in contact with us and everything, um but I could really tell for myself and the three or four other um people that were moving away that it was really affecting them in a different way, that they were um, they understood that everything was kind of changing, and that they might not keep in contact (laughs) with the people in =a Canadian city= that um might lose contact, which is a bit sad to think about. Um … but … yeah I was I guess what was I thinking umm ... I was just thinking about trying to remember all the moments and stuff and um take pictures and so I could just remember umm… what had happened and… (tongue clicking).. I guess I was feeling kind of sad to say goodbye to everybody but at the same time really happy because I was starting something new and there were so many unknowns and that was really exciting, um and also really excited for all of my friends who were moving away and going to have similar experiences. Um, and I guess it impacted me because it was the first time I had really like said goodbye to a big group of friends like that – from we'd been good friends since we were about five or six years old [right], so that was, that was a big change. Um, that had a big impact on me, and um… I guess… what it says about me as a person, is that um … I form very strong friendships with people I've known for a long period of time and I really do hope that we'll keep in contact, so far we've been keeping in contact pretty well so, yeah that was a really significant event, saying goodbye to everyone and trying to value the moments I was spending with them.

ANYTHING TO ADD

I: Okay, so we're almost at the end of the interview now, is there anything else that you wanted to add?

P: Umm (long pause) not really, I don't think? I'm excited to start my year at =a Canadian university= and that there's so many unknowns. Usually um I don't like unknowns, I like to kind of plan everything and when it doesn't turn out perfectly I'm a bit disappointed, but I've decided to try not to do that this year and it helps because I really don't know what's going to happen, I really have no idea what's going on [right] no that's not true, I know a bit. But um … yeah, I'm excited for all the unknowns and all the discoveries and everything else this year. Yeah! [Alright, that's great, and that's the interview!]   END OF INTERVIEW

Appendix E: McAdams' Agency & Communion Coding Scheme

Reprinted verbatim with permission from:
http://www.sesp.northwestern.edu/foley/instruments/agency/

The coding system is designed to detect the salience of agency and communion themes in accounts of discrete life-story episodes, such as life story "high points," "low points," "turning points," and "earliest memories." Such accounts may be collected through life-narrative open-ended questionnaires or through interviews. In general, the coding scheme works best when subjects describe particular events in their lives that they find to be especially personally meaningful -- events that the subjects themselves may see as having had an important impact on their identity. For each event, subjects are typically asked to describe (verbally or in writing) what happened in the event itself, who was involved, what the subject was thinking and feeling during the event, and what (if anything) the event means in the context of the subject's own self-defining life story. Subjects may describe events that are either positive or negative in emotional tone.
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(With assistance from Bonnie Kaplan, Mary Anne Machado and Yi Ting Huang)
Northwestern University
Revised: October 17, 2002

David Bakan (1966) introduced the concepts of agency and communion in the following passage:

"I have adopted the terms "agency" and "communion" to characterize two fundamental modalities in the existence of living forms, agency for the existence of an organism as an individual, and communion for the participation of the individual in some larger organism of which the individual is a part. Agency manifests itself in self-protection, self-assertion, and self-expansion; communion manifests itself in the sense of being at one with other organisms. Agency manifests itself in the formation of separations; communion in the lack of separations. Agency manifests itself in isolation, alienation, and aloneness; communion in contact, openness, and union. Agency manifests itself in the urge to master; communion in noncontractual cooperation." (pp. 14-15).

These two generic "modalities in the existence of living forms" may also be viewed as two thematic clusterings in life narratives, each articulating important life goals, strivings, needs, and desires. Following the work of Bakan and many others, McAdams (1985; McAdams, Hoffman, Day, & Mansfield, 1996) has suggested that agency and communion are the two central superordinate thematic clusterings in life narratives. People's life stories differ with respect to the salience of agency and communion themes, and those differences are measurable. This manual is designed to enable the researcher to capture some of those individual differences in the thematic coding of particular life narrative episodes. It describes a simple and reliable method for coding the salience of

agency and communion themes in written or verbal accounts of especially significant autobiographical events, or what McAdams (1985) calls "nuclear episodes" in life stories.

The coding system is designed to detect the salience of agency and communion themes in accounts of discrete life-story episodes, such as life story "high points," "low points," "turning points," and "earliest memories." Such accounts may be collected through life-narrative open-ended questionnaires or through interviews. In general, the coding scheme works best when subjects describe particular events in their lives that they find to be especially personally meaningful -- events that the subjects themselves may see as having had an important impact on their identity. For each event, subjects are typically asked to describe (verbally or in writing) what happened in the event itself, who was involved, what the subject was thinking and feeling during the event, and what (if anything) the event means in the context of the subject's own self-defining life story. Subjects may describe events that are either positive or negative in emotional tone. In general, however, the categories described below refer to positively-valenced themes in life narrative.

In coding an account for themes of agency and communion, the scoring unit is the episode itself. Each episode is coded for the presence (score +1) or absence (score 0) of eight different themes, four under the heading of agency and four under the heading of communion.

The four agency themes are: (1) Achievement/Responsibility (AR), (2) Power/Impact (PI), (3) Self-insight (SI), and (4) Status/Victory (SV). The four communion themes are: (5) Love/Friendship (LF), (6) Dialogue (DG), (7) Caring/Help (CH), and (8) Unity/Togetherness (UT). The coder must determine whether or not the story contains evidence of each of the eight themes. If evidence exists for the theme in the episode, then the theme receives a score of +1 for the corresponding episode. If no evidence exists, the theme receives a score of 0 for that episode. A theme is scored only once per episode. Theme scores may then be summed across agency and across communion categories within an episode, to provide summary scores for agency and communion respectively. Thus, the highest possible score for agency or communion for a given episode would be "4." The lowest score would be "0."

The coding system for agency and communion is a conservative scheme. The scorer should not give a point (+1) for a given theme in a given episode unless there is clear and explicit proof of the theme's existence in the episode. The scorer should be careful not to read anything into the literal description of the account. The scorer should avoid clinical inferences and extensions beyond the written or spoken word.

Two independent coders should score episodes, and then correlation coefficients should be calculated to determine interscorer reliability. Reliabilities may be calculated for each theme score, summed across however many episodes a subject describes, and for the total

agency and total communion scores, summed across episodes. Scorers may need to work together in early phases of coding in order to build up a common understanding, so that eventually their independent codings will show acceptable reliability.

Themes of Agency:

Agency encompasses a wide range of psychological and motivational ideas, including the concepts of strength, power, expansion, mastery, control, dominance, autonomy, separation, and independence. Most accounts of important autobiographical experiences are couched in agentic terms to one degree or another. After all, the subject is telling the researcher about an important experience for the self, so we should not be surprised if the account entails at least a modicum of self-celebration, self-focus, self-expansion, and so on. The necessary focus on the self, therefore, encourages a rhetoric of agency in most autobiographical accounts, especially among contemporary citizens of Western societies, imbued with an ethic of individualism. For example, many turning point episodes will tell how a person moved from dependence to "autonomy." The attainment of autonomy in human development is a very common theme among Westerners, especially those in the middle classes. The four agentic themes articulated below, however, go above and beyond the typical agentic rhetoric of autobiographical expression. They express highly agentic ideas that, even by the cultural standards of contemporary self rhetoric, stand out as especially indicative of Bakan's concept of agency in human lives.

1. ACHIEVEMENT/RESPONSIBILITY (AR).
The protagonist in the story reports substantial success in the achievement of tasks, jobs, instrumental goals, or in the assumption of important responsibilities. He or she feels proud, confident, masterful, accomplished, or successful in (1) meeting significant challenges or overcoming important obstacles concerning instrumental achievement in life and/or (2) taking on major responsibilities for other people and assuming roles that require the person to be in charge of things or people. Most often these accomplishments and responsibilities would occur in achievement settings, such as school or work, rather than in more personal settings, such as with reference to spiritual or romantic goals. This category requires that the protagonist strive to do things, produce things, or assume responsibilities in such a way as to meet an implicit or explicit standard of excellence. In this sense, AR bears strong resemblance to the "achievement motivation" scoring categories in McClelland and Atkinson's coding system for TAT stories (McClelland et al., 1953).

Examples of AR:
A student works hard to perfect a short story for a class assignment. He spends hours polishing word choice, getting the imagery right, and so on.
An executive meets his annual goals for the company.
A young boy builds a tree house, and he is very proud of his accomplishment.
A student masters a class on computer programming.

A secretary takes over an office and turns it into a model of efficiency and productivity.
After having their first child, a couple now realizes the significant financial
responsibilities they have assumed.

A woman endeavors to interact with her colleagues in a "healthy and productive manner."
Here the explicit reference to being productive in the workplace qualifies the response for
AR.

A woman describes her movement from college to graduate school: "I was able to settle
down and become focused and to become productive in a much more real way than up
until then. I had always produced a lot of stuff academically; I'm also the kind of person
who is constantly productive with something, or at least I used to be that way. I would
have six projects going on at once." But now she was able to become more focused on
one project at a time, which enhanced her productivity.

A father reflects: "You're the head of the family and you're responsible for a lot more
than you were before. It's a real maturing experience."

A group of young adults builds a community in the wilderness: "We were building a
community. We were really working with our muscles, you know, passing buckets of
cement."

A man is accustomed to failing, but he achieves success in an important business venture,
building his confidence.

An author publishes her first short story.

A middle-aged mother reflects on her children, who have recently left for college. She
decides that she has done an "excellent job" as a caregiver. Even through this is an
interpersonal rather than instrumental task, the writer explicitly couches it in achievement
terms -- as a job well done.

A pilot completes his first solo flight.

Studying a foreign culture for many years, an anthropologist comes up with a new way of
seeing the culture, solving an intellectual problem which she had puzzled over for a long
time.

First day on the job, a nurse confronts a difficult assignment, but she is successful in
completing the task.

At the age of 65, a man runs in his first marathon.

A young man is kicked out of his house by his parents. He struggles to survive, but
eventually he becomes "a successful and responsible adult."

A woman is proud of her college achievements -- in academics as well as in clubs and
associations on campus.

A man reports after his divorce: "I challenge myself to the limit academically, physically,
and on my job. Since that time I have accomplished virtually any goal I set for myself. I
have never been happier."

A woman reports after her divorce: "In order to survive financially and support these
children, I decided to enroll in a graduate program in counseling psychology at a major
university. I was accepted and began the program with great determination . . . I felt the
failure of marriage was reversed by the success of completing a graduate degree through
years of difficult and intellectually stimulating study."

"This was my senior recital. I began my first piece. I played it with all my heart. I never felt so proud of myself before. I wanted to do a terrific job and I did."

"My important goal is finding a job. I just went to my first interview. I managed to calm myself down and answer the question professionally. In general, the experience was pretty positive and will help in future interviews."

"Right now the single most important goal to me is getting into medical school. In the summer, I voluntarily joined an apprenticeship program where I was to help out and learn at the hospital in the surgery department. If I had not finished the program, I would not have something to submit to the medical schools, showing them what I did."

"The earliest memory I have is the day I first dressed myself. It was a huge accomplishment for me because I did something on my own that I always needed help for."

I chose to come to this university over others, and I chose to work hard and enter a competitive environment rather than enter a school where I could have more fun and work less."

"I remember learning how to ride a bike at age seven."

"One of my goals is to get involved in the deaf community and increase my sign language proficiency. Last year I was taking my first American Sign Language classes. A year later, I am conversing with people by signing in front of a group."

"My freshman and sophomore year were very tough academically. So I took biology the summer after my sophomore year and it actually went okay. This was the summer when I learned how to study."

"Every Saturday of home game the marching band performs a highly demanding thirteen minute show that requires us to push ourselves to our limits. I loved the performance exhilaration and constantly challenging myself to perform better than before – to push my limits and grow as an individual."

"The birth of my younger brother was a new addition to our family. I was no longer the youngest child. It was my turn to carry some responsibility."

"When I was three, I was lying on the floor of our kitchen writing my name with a red crayon. I learned how to read and write at an early age."

"I think winning the 1990 Golden Apple Award for Excellence in Teaching was my high point because I was the one who accomplished it."

"A turning point occurred for me in 1984 when my daughter was born. I then realized that becoming a father was a huge responsibility and took a lot of work and patience."

"The day I graduated from graduate school was a very special day in my life…I felt very excited and proud to have finished my degree…I took a risk to go back to school and I did it."

2. POWER/IMPACT (PI).

The protagonist asserts him- or herself in a powerful way and thereby has a strong impact on other people or on the world more generally. The impact may take the form of aggression (physical or verbal), retaliation, argument, persuasion, control, or attempting

to make a strong impression on others. The protagonist feels strong, masterful, powerful, or especially effective in exerting his or her will to change things in the environment. The change may be destructive or positive. Positive change may come from leadership or other effective actions that mobilize people to do things in accord with the wishes or plans of the protagonist. This category resembles the "power imagery" prime category in the TAT-based scoring system for power motivation (Winter, 1973).

Examples of PI:
A politician pushes through a piece of legislation.
A woman persuades her friends to change their views about a controversial topic.
A graduate student impresses her advisor.
A bully beats up other children on the playground.
A woman slaps her husband.
Somebody saves somebody else's life.
A preacher's sermon is so convincing that many people in the congregation go through a conversion experience.
The lawyer convinces his client to accept the terms offered by opposing counsel.
"I had a toy my friend wanted, but I had it first so she bit me and took the toy. I bit her back."
"I was a lifeguard during the summer. As I was looking around the pool sitting in my chair, I suddenly notices an overturned raft with a little boy struggling next to it. I just quickly jumped in the water, grabbed the kid within a couple of seconds, and gave the kid to his father."
"My family was pressuring me and I was not feeling happy or capable of emotional stability. I somehow ended up getting into an argument with my brother and mom and bursting into tears and shaking all the while saying, 'Look if you guys don't back off and stop pressuring me, I'm going to go nuts and you're going to have to pay for a psychiatrist.' I think they realized that I put enough pressure on myself without their added help."
"My good friend got alcohol poisoning. I took charge of the situation and took her to the emergency room."
"I am a woman of convictions who needs to feel as independent as possible. Accordingly, I began to feel hampered by my boyfriend's expressions of love. I decided to break up with him. This incident shows that I can be assertive and will do what is best for me no matter how much it hurts."
"I went out on my first real date when I was sixteen years old. I remember my grandmother being really strict and saying that I could not go out with anyone. But I rebelled and sneaked out of the house at night when my grandmother was asleep to date this guy."
"As we were leaving the bar, one of my girlfriends was being harassed by an intoxicated male. In an effort to defend her, me and several of my fraternity brothers spoke up and thus started a fight."
"There was alcohol at this party and almost everyone was becoming rather intoxicated.

Even though I knew I would be made fun of, I refused to let any of my friends drive home."

"I find it important to set a positive first impression to people who have never met a Jew. There are moments when it is harder but in general all of these experiences have made me realize that it is important to do everything in my power to change myself and therefore influence others."

"Moving to college was a very high point in my life. This was the first time in my life I was going to be on my own and that gave me a great joy. I knew that the homesickness would go away because I was strong and was going to make it on my own."

"I took part in a show where I was in one of the dance numbers. I always wanted to do it my way. I have been like that for as long as I can remember. I am very high in power motivation. I like being in charge or in control. When I am not, it bothers me and I react against those who are."

"I remember walking home from first grade with my brother. He told me 'there is no such thing as Santa Claus, the Easter Bunny, and the Tooth Fairy.' I was devastated – but I wasn't a crybaby so I didn't tell my mom and instead I went to school the next day and told everyone else. If my childhood was going to be ruined, I decided everyone else's should be."

"In eighth grade, I got in a huge fight with a bully that had given me a hard time for a couple of years. But this day he kept pushing all my buttons so I picked a fight. He had beaten me down long enough so I took control of the situation. He didn't pick on me anymore because I had shown him up in front of a bunch of people."

"I attended an international peace conference in Venice, Italy. I realized how many other young people like myself wanted to affect change in their community."

"I am glad my eyes were opened early to the fact that there were a lot of prejudiced people in my class. Later in junior high, I would break out of my usual silence when people would make racist remarks in class or tell a racist joke. It was at this point that I would speak out and try to make people realize they were wrong."

"When we agreed to pledge a fraternity, most of us expected some sort of hazing to come along with it. One night, the fun was pushed to its limits. I decided something needed to be done. The next day, I called the national headquarters. For the first time, I stood up for what I believed in."

"…I told him I would make up a bed in the living room and that he was to leave the next day…Ever since then I've had increasing confidence in my capabilities…I really believe this comes from an inner strength which some find in religion but I think I find in myself."

"I was always defending my mother and raging against (my father) and his drinking."

"I see this event as the first time that I can remember directly questioning and confronting authority with logic and reason…I now feel that this event had a strong bearing relative to my view of authority which does not like to be questioned…Never again would I allow any authority over me to go unexamined."

3. SELF-MASTERY (SM).
The story protagonist strives successfully to master, control, enlarge, or perfect the self. Through forceful or effective action, thought, or experience, the protagonist is able to strengthen the self, to become a larger, wiser, or more powerful agent in the world. A relatively common expression of the theme involves the protagonist's attaining a dramatic *insight* into the meaning of his or her life. The insight may be seen as a transformation in self-awareness or a leap forward in self-understanding that entails the realization of new goals, plans, or missions in life -- a significant insight into one's *identity.* Another relatively common expression of SM involves the protagonist's experiencing a greatly enhanced sense of *control* over his or her destiny in the wake of an important event (e.g., divorce, death of a loved one, reaching a life milestone). Other examples of SM typically show up in accounts in which the individual reports that he or she felt "strengthened" by an important event, or in which a person explicitly says that the experience provided him or her with a feeling of *power*.

Examples of SM through "insight":
A man comes into contact with the spiritual dimensions of his life at a weekend retreat designed to stimulate psychological growth.
A man accepts the awful truth that he is indeed an alcoholic.
A subject responds that her most important goal in life is the attainment of wisdom, which she describes as "the re-creation of myself as a better person."
A woman comes to see her life's mission as being an artist. She quits her job, sets up a studio, and strives to actualize her dream.
A young man experiences a religious conversion which provides him with new insight into his own life.
A middle-aged man realizes that he is being exploited by his current employer. He breaks away from the firm and embarks upon a new line of work, more in keeping with his life goals.
A woman comes to the conclusion that she has wasted 20 years of her life in a desperate drive for material well-being. She decides to dedicate her life to helping others.
Inspired by reading Freud, a young man comes to the realization that he wants to be a psychotherapist.
After a near-death experience, a man comes to a new understanding of the quality of life. He pledges to slow down, enjoy his family more, take everything one day at a time.
After the death of his son, a man changes his "philosophy of life."

Examples of SM through "control":
A woman reports feelings of deep satisfaction in being able to manage the pain of labor during childbirth. She is able to master the self by controlling her own pain.
A divorce frees up a woman to take control of her own life and the life of her son.
A man feels SM by sticking to a regimen of weight-lifting and dieting; SM is

experienced by controlling (and perfecting) the body.

A drug addict kicks the habit; takes control of his life.

A woman argues with her doctor about the method by which she will give birth to her first child. She wins the argument and is able to have the child "naturally," with minimal assistance from medical technologies. She is thus able to control the situation and control her own bodily processes in accord with her image of herself as a powerful agent.

A young White woman defies her family's objections and marries a black man.

A student is able to control his raging emotions in confronting a professor about a perceived injustice in class. The student prevails in convincing the instructor of his point of view, showing that controlling the self can reap significant external benefits.

Though a highly disciplined regimen of reading and study, a professor continues to improve her mind and enlarge her understanding of her chosen field of study.

Other examples of SM:

A married couple go through tremendous hardships in their first year of marriage, experiencing the death of both sets of parents. They emerge from this period strengthened and better able to cope with life's problems.

A musician experiences a sense of power or mastery during a performance.

An army recruit feels "strong" after finishing basic training.

4. STATUS/VICTORY (SV).

The protagonist attains a heightened status or prestige among his or her peers, through receiving a special recognition or honor or winning a contest or competition. The implication in SV is that status or victory is achieved vis a vis others. There is always an interpersonal and implicitly competitive context in SV. Typically, the person "wins." There is victory or triumph. SV refers to significant recognition, especially prestigious honors, and various kinds of victories over others. Simply "doing a good job," getting good grades, or successfully achieving a goal is not enough to score for SV.

Examples of SV:

A young woman is elected homecoming queen.

An actor wins a coveted lead part in an upcoming play.

A student graduates from college with special honors (e.g., magna cum laude).

A person receives an award for outstanding achievement.

The quarterback completes a crucial pass, which gives his team the victory in the football game.

A musician receives a standing ovation.

A professor is honored at a party for receiving tenure at the university.

An aspiring writer is granted admission to a prestigious graduate program.

A swimmer wins a race.

A lawyer wins a case.

A person is granted an important position or awarded a prestigious job.

A high school student gains admission to a good university.

A student wins a scholarship or grant.

"I got accepted to the University of Pennsylvania. It was expensive but had a good reputation."

"One game we played a rival high school who is always a tough opponent. I saw the ball go into the corner of the net and the arms of all my teammates in the air and embracing me. We won the game. The game-winning goal made me feel proud and very good about myself."

"A peak experience occurred when I participated in the Martin W. Essex School for the gifted and talented. It was a summer program for sixty high school seniors who were selected based on academic excellence."

"My high school's varsity boys basketball team was in the finals of the state basketball tournament for the first time in the history of the school."

"The speech coach was finally able to convince me to attend the Iowa high school individual event speech contest my junior year. I presented a speech I had written for her speech class in the category of original oratory, earning the right to perform at the all-state speech festival."

"In eighth grade I tried out for high school cheerleading and was one of the three girls from my class to make football and basketball cheerleading."

"Ten days ago, I swam what they call a perfect meet. I entered and won eleven individual events…Thus, I won the high point award, not only for my team but for the female of the entire meet."

"I was being presented with a little cup for "camper of the year" in my age group…I was singled out for something very special that meant people liked me."

Themes of Communion

Communion encompasses psychological and motivational ideas concerning love, friendship, intimacy, sharing, belonging, affiliation, merger, union, nurturance, and so on. At its heart, communion involves different people coming together in warm, close, caring, and communicative relationships. McAdams's (1980) thematic coding system for "intimacy motivation," employed with TAT stories, is explicitly modeled after Bakan's conception of communion, as well as related ideas in the writings of Maslow (being-love), Buber (the I-Thou relation), and Sullivan (the need for interpersonal intimacy). The four communion categories below represent a distillation and sharpening of the ten categories employed by McAdams in the TAT coding system for intimacy motivation. In addition, the four categories for communion draw more generally from Murray's (1938) communal concepts of "need for affiliation" and "need for nurturance."

5. LOVE/FRIENDSHIP (LF).
A protagonist experiences an enhancement of love or friendship toward another person. A relationship between people becomes warmer or closer.

Examples of LF:
Two friends feel that they grow emotionally closer to each other after spending time together on a vacation.
A man proposes to a woman. (Or vice versa.)
A woman describes her marriage to a wonderful man as the high point of her life.
A man marvels at the love and commitment his wife has given him over the past 40 years.
A young couple enjoy lovemaking on a Saturday afternoon.
An older woman teaches a young man about sex and love.
A woman is strongly attracted to a man in her class. He finally asks her out.
A couple reflects on their happy honeymoon.
A college student takes a friend to a formal dance: "I went to the formal with my friend, Melissa, even though she had a boyfriend. I felt incredibly happy during the slow dance with her. As I held her close and tight, I felt her acceptance and happiness with me. We felt truly comfortable and happy with each other, as friends. Even though there was no direct romantic relationship between us, I sense a mutual true love."
A person remarks on a good friendship he has experienced.

"We spent the previous year building up a strong friendship at school in London."
"This simple phone conversation was the start of a new relationship with my mother."
"I value close relationships."
"This girl and I knew we liked each other. During our two weeks at camp, we carried on whatever semblance of a relationship 10-year-olds can carry on."
"I chose marriage and there have been illness-related complications. However, we will celebrate our 20th anniversary and I know I made the right decision. The quality of our relationship transcends the illness. Perhaps the illness has even brought us closer."
"…I befriended a priest…who was temporarily assigned to my parish. We were bonded together by our mutual love of music. We used to really 'hang out.'"

6. DIALOGUE (DG).
A character in the story experiences a reciprocal and noninstrumental form of communication or dialogue with another person or group of others. DG usually takes the form of a conversation between people. The conversation is viewed as an end in itself (justified for its own sake) rather than as a means to another end. Thus, such instrumental conversations as "interviews" or "planning sessions" do not qualify for DG because they are undertaken for noncommunal reasons (e.g., to obtain information or make plans). Furthermore, highly contentious or unpleasant conversations -- such as hostile arguments or exchanges in which people do not seem to be listening to each other -- do not qualify for DG. In order to score for DG, a conversation need not be about especially intimate topics, though of course it may be. A friendly chat about the weather, for example, would qualify for DG. What is important to note is that the communication between the

protagonist and other characters in the story is reciprocal (mutual), nonhostile, and viewed as an end in itself rather than a means to an instrumental end. Note also, that conversations for the express purpose of helping another person (e.g., providing advice, therapy) do qualify for this theme.

Examples of DG:
"We sat across from each other and tossed ideas back and forth, ideas of what we thought the plays were about."
"Sara and I had been writing letters to each other all summer."
"We drank a carafe of wine and had a memorable conversation about love and parents."
"My peak experience was both a time of sadness and joy. Sadness because my friend told me she had cancer. Joy because we had opened up to each other and it was a beautiful experience."
"My mother and I talked in depth about the problems my brother was having. I felt like so much of who I have become is like my mother. I felt warmth and closeness when we said good-bye." (also scores for LF).
"On the last night, three of us plus our facilitators gathered around a circle with a single candle in the middle. We all went around to express our feelings of what peace was, what we learned from this unprecedented event . . ."
"When I was in preschool I recall sitting on my teacher's lap during a recess time and I remember her telling me . . ."
"I ran up the driveway into the house and picked up the phone. No one was home to share my moment with me, so I called my mom at work."
"My aunt had just had a baby girl, my cousin, and she asked me to be the godmother. I agreed without even thinking about what it meant to me."
"We had a great time, sitting around drinking wine after dinner and just talking into the night."
Sometimes a communication can be nonverbal, as in this example of DG: "She did not have to say a word. I knew instinctively what she meant."

7. CARING/HELP (CH).
The protagonist reports that he or she provides care, assistance, nurturance, help, aid, support, or therapy for another, providing for the physical, material, social, or emotional welfare or well-being of the other. Instances of receiving such care from others also qualify for CH.

Examples of CH:
Many accounts of childbirth score for CH, as well as accounts of adoption. In order to score, the subject must express a strong emotional reaction of love, tenderness, care, nurturance, joy, warmth, or the like in response to the event.
Accounts of taking care of children as they grow up, meeting their needs and looking after them during difficult times, typically score for CH. Also included here are accounts

of providing needed financial support, as in the role of the family breadwinner. Providing assistance or care for spouses, siblings, parents, friends, co-workers, and colleagues may be included, as well. Mere technical assistance, however, does not qualify for CH. An emotional quality of caring must accompany the assistance, which is usually associated with providing counseling or therapy concerning life problems or interpersonal difficulties.

Developing empathy for other people, even if it is not acted upon in a given event, scores for CH. In one example, a woman describes reading a particular novel when she was a girl and developing an empathic attitude toward impoverished and oppressed people as a result.

"After I was sexually assaulted, my world was torn apart. The only thing that was stable in my life was the support I received from my mother."

"I like the feeling of being a vocal advocate and I would like to help others with similar problems."

"I held his hand to help him over the rocks safely."

"So I decided to have them settle their differences by taking them back to my room and for the next few hours, I had them talking and explaining each other's hatred, why there was miscommunications."

"My dad heard me and helped me. He helped me not only with the fly, but with my panic. He was caring, confident, and knew what to do."

"Near the end of 1967…a group of Black men decided to form an organization to help Black youth…My thinking at that time was, yes, there is a need to be a role model for our boys."

8. UNITY/TOGETHERNESS (UT).

Whereas the communal themes of LF, DG, and CH tend to specify particular relationships between the protagonist and one or a few other people, the theme of Unity/Togetherness captures the communal idea of being part of a larger community. In UT, the protagonist experiences a sense of oneness, unity, harmony, synchrony, togetherness, allegiance, belongingness, or solidarity with a group of people, a community, or even all of humankind. A common manifestation of this theme involves the protagonist's being surrounded by friends and family at an important event (e.g., a wedding, graduation), experiencing strong positive emotion because a community of important others have joined him or her at this time. However, there are many other manifestations of UT, as well.

Examples of UT:
"I was warm, surrounded by friends and positive regard that night. I felt unconditionally loved." (Also scores for LF.)

Some accounts of weddings may qualify for both LF and UT. The developing love relationship between spouses provides evidence for LF while the wedding's bringing together of many friends and family members may provide evidence for UT.

Examples of being accepted, cherished, or affirmed by friendship, family, or other social groups qualify for UT.

"The most important part of the day was being surrounded by my peers who I loved . . I finally felt completely comfortable with my classmates. I could call them my friends . . ." (Also scores for LF.)

"The bonds of sisterhood can never be broken. After a week and a half trampling around in the cold chitchatting for sorority rush, my Rho Chi Heather handed me the envelope and inside I saw it – the invitation to be a sister of Alpha Phi . . . What this says about my personality is that I love to belong . . ."

"This event showed me how much I cared for not only my dad but my mother and entire family as well."

"I remember when I joined the Cub Scouts…The uniforms that the scouts wore were blue. I couldn't wait until I received my uniform. It made me feel important and a part of something."

"We looked up and looming next to us, literally, was the Acropolis…I recall feeling both small and big in the sense of belonging to a society that was responsible for this tremendous architecture."

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Appendix F: Supplementary Analyses for Chapter 4

This appendix contains supplementary analyses on the data presented in Chapter 4. These analyses were not included in Chapter 4 to remain within page limits at the *Journal of Personality*. Moreover, the restricted variance of these analyses coupled with the very large number of correlations makes these analyses less reliable than those presented in Chapter 4. However, they are included here because they may be of interest to readers.

Analyses of the four agency components

The first set of analyses breaks down the total score into its four component themes (i.e., achievement/responsibility, status/victory, power/impact, self-mastery) to examine how they were intercorrelated with perfectionistic concerns and perfectionism cognitions. Because the data are no longer normally distributed and have limited variance when broken down in this way, Spearman rank-order correlations were used as a non-parametric alternative. These analyses are presented in Table A1. Broadly speaking, the results in Table A1 suggest that the positive correlations between perfectionism cognitions and themes of agency observed in Chapter 4 are primarily driven by status/victory and self-mastery themes. In contrast, achievement/responsibility and power/impact themes were unrelated to perfectionism cognitions.

Analyses of agency subthemes identified in thematic analysis

In the second set of analyses, I converted each of the subthemes identified in the thematic analysis in Chapter 4 into a separate quantitative variable (i.e., 1 = present; 0 = absent) and correlated each subtheme variable with perfectionistic concerns and SWB at both waves. Again, Spearman rank-order correlations were used as a nonparametric alternative. Out of the 96 correlations (i.e., 24 subthemes x 2 perfectionism variables x 2 SWB variables = 96) conducted in these exploratory analyses, 15 were significant using the $p < .05$ criterion. Only the 15 statistically significant correlations are reported below. All other correlations were non-significant ($p > .05$).

For subthemes of achievement/responsibility, only four correlations were significant at the $p < .05$ level. The Wave 1 grade-focused performance subtheme positively correlated with both perfectionistic concerns ($r_s = .21$, $p = .033$) and perfectionism cognitions ($r_s = .25$, $p = .012$) at Wave 1. The Wave 1 university transition subtheme negatively correlated with Wave 1 perfectionistic concerns ($r_s = -.22$, $p = .027$). Finally, the Wave 1 non-school performance subtheme was positively correlated with Wave 2 perfectionism cognitions scores ($r_s = .21$, $p = .033$).

Power/impact had no subthemes when the thematic analysis was conducted, and is not examined further. For subthemes of status/victory, significant positive correlations were found between the Wave 1 sports victory subtheme and Wave 2 of perfectionistic concerns ($r_s = .21$, $p = .041$). The Wave 2 gained employment subtheme was positively correlated with Wave 1 perfectionistic concerns ($r_s = .24$, $p = .020$), and Wave 1

perfectionism cognitions (r_s =.20, p = .045), as well as Wave 2 perfectionistic concerns (r_s =.22, p = .032) and cognitions (r_s =.20, p = .049).

For subthemes of self-mastery, the Wave 1 of controlling social problems subtheme was positively associated with perfectionism cognitions at both Wave 1 (r_s =.22, p = .030), and Wave 2 (r_s =.25, p = .013). Similarly, the "other" self-mastery subtheme at Wave 1 was positively correlated with perfectionistic concerns at both Wave 1 (r_s =.20, p = .050) and Wave 2 (r_s =.21, p = .036). The Wave 2 subtheme of mental health or drug use was positively correlated with Wave 2 perfectionistic concerns (r_s =.22, p = .026) and Wave 2 perfectionism cognitions (r_s =.26, p = .010).

Conclusions

These supplementary analyses reveal a few interesting pieces of information. First, the correlations between perfectionism and agency seem to be driven primarily by the subcomponents of status/victory, and self-mastery. This is perhaps not surprising given research linking perfectionistic concerns to extrinsic motivation (i.e., motivated by external forces; Mills & Blankstein, 2000), and evidence suggesting that status/victory themes represent the most extrinsically motivated form of agency as coded from narratives (Bauer & McAdams, 2000). Moreover, since themes of self-control and self-betterment are so central to the construct of perfectionism (Frost et al., 1990; Hewitt & Flett, 1991), it seems reasonable to expect perfectionism to correlate with themes of self-mastery.

Using the subthemes identified in thematic analysis helped further clarify the nature of perfectionism as manifested in the narratives. At Wave 1, perfectionistic concerns was positively correlated with the more extrinsically motivated theme of grade-focused performance (i.e., feeling better after achieving a good grade) but negatively correlated with the more intrinsically motivated theme of university transition (i.e., emphasizing the importance of hard work and maturity after graduating). This mix of extrinsic and intrinsically motivated themes in the data may account for the null correlations between perfectionism variables and achievement/responsibility themes. It is also noteworthy that issues of interpersonal problems and problems with mental health emerge as specific issues that perfectionistic students sought to control in their self-mastery narratives, as both issues are well-documented to be problems that perfectionistic people face (Habke & Flynn, 2002; Hewitt & Flett, 1991). In sum, these supplementary analyses provide useful preliminary data for developing coding schemes specifically designed to measure perfectionistic themes in narratives in future research. In particular, it will be interesting to focus on themes of extrinsic motivation in future research.

Table A1

Spearman Rank-Order Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12
Wave 1												
1. Perfectionistic concerns	--											
2. Perfectionistic cognitions	.64***	--										
3. Achievement/Responsibility	.07	.16	--									
4. Status/Victory	.16	.20	.42***	--								
5. Power/Impact	.10	.10	-.03	-.03	--							
6. Self Mastery	.09	.21*	.01	.15	.15	--						
Wave 2												
7. Perfectionistic concerns	.89***	.62***	.09	.09	.12	.05	--					
8. Perfectionistic cognitions	.57***	.72***	.13	.15	.09	.24*	.68***	--				
9. Achievement/Responsibility	-.02	-.01	.03	-.01	-.11	-.16	-.03	-.13	--			
10. Status/Victory	.24*	.24*	-.14	-.00	.02	.07	.24*	.26*	.13	--		
11. Power/Impact	-.01	-.02	-.04	-.07	.08	-.04	.04	.00	-.05	.07	--	
12. Self Mastery	.12-	.15	.09	.08	-.07	.35***	.20	.23*	-.19	-.16	-.03	--

Note. N's range from 103 to 120 (pairwise deletion). A bivariate correlation around .10 signifies a small effect size, .30 signifies a medium effect size, and .50 signifies a large effect size.

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

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Appendix H: Longitudinal Factor Analysis and Factorial Invariance

Data Analytic Strategy

To support the underlying factor structure of the composite variables in my dissertation, I conducted two longitudinal factor analyses: The first used the subscale totals for perfectionistic concerns (HFMPS socially prescribed perfectionism, FMPS concern over mistakes, FMPS doubts about actions) at all three waves as indicators and the second used subscale totals for perfectionistic strivings (HFMPS socially prescribed perfectionism, FMPS personal standards, EDI socially prescribed perfectionism) at all three waves as indicators

I also tested the longitudinal factorial invariance of these composite variables over time using the approach outlined by Widaman, Ferrer, and Conger (2010). This tests whether the factor structures of perfectionistic concerns and strivings remained stable across time. Testing factorial invariance involves testing four nested models in a step-by-step fashion, moving from the least constrained to the most constrained model: (a) Configural invariance model (a baseline model with minimal identification constraints); (b) weak factorial invariance model (constrain the factor loadings to equality over time); (c) strong factorial invariance model (constrain the factor loadings and intercepts to equality over time); and (d) strict factorial invariance model (constrain the factor loadings, intercepts, and unique factor variances to equality over time). The configural model is the baseline model to which all other models are compared.

To compare between these models, I used ΔCFI. If the ΔCFI is greater than .01, then the models are significantly different from one another (Cheung & Rensvold, 2002). Overall model fit for each model was assessed using multiple fit indices, as outlined in Chapters 2, 4 and 5. Similarly, error terms for each measure were correlated across waves, consistent with Cole and Maxwell (2003), and the analytic approach taken in Chapter 2.

Results

A comparison of CFI, TLI, and RMSEA values for each of the four nested models is located in Table A2. I first tested factorial invariance for perfectionistic concerns. Based on the ΔCFI, the strict factorial invariance model fit significantly worse than the configural model (ΔCFI = .011). However, the weak and strong factorial invariance models were not significantly different from the configural model (ΔCFIs < .01). Thus, the strong factorial invariance model is the most parsimonious, well-fitting model for perfectionistic concerns. The strong factorial invariance model for perfectionistic concerns fits the data well, $\chi^2(N = 127) = 24.90$, $p = .47$; $\chi^2/df = 1.00$; CFI = 1.00; TLI = 1.00; RMSEA = .00 (90% CI: .00, .07). See Figure A1 for factor loadings and correlations for perfectionistic concerns using the strong factorial invariance model.

I next tested factorial invariance for perfectionistic strivings. Based on the ΔCFI, the strong (ΔCFI = .028) strict factorial invariance models fit significantly worse than the configural model (ΔCFI = .038). However, the weak factorial invariance model was not significantly different from the configural model (ΔCFI < .01). This suggests that the weak factorial invariance model is the best of the four models tested. The weak factorial invariance model for perfectionistic concerns fits the data well, $\chi^2(N = 127) = 30.75$, $p = .08$; $\chi^2/df = 1.46$; CFI = .99; TLI = .98; RMSEA = .06 (90% CI: .00, .10). See Figure A2 for factor loadings and correlations for perfectionistic strivings using the weak factorial invariance model.

Conclusions

Overall, the factor structure for perfectionistic concerns and perfectionistic strivings appears to be unidimensional, supporting the choice to combine subscales into composite measures. When testing longitudinal factor invariance for perfectionistic concerns, the strong factorial invariance model holds. This means that the values for the factor loadings and intercepts do not change over time. Thus, perfectionistic concerns should be similarly related to outcome variables regardless of which wave of data is used. However, only the weak factorial invariance model held for perfectionistic strivings. This means that the intercepts vary across time. Thus, the relationships between perfectionistic strivings and outcome variables are likely to be more unstable over time, with results depending upon which wave of data is used.

Table A2

Comparison of Fit Indicies Testing Factorial Invariance

Model	CFI	TLI	RMSEA
Perfectionistic Concerns			
Configural Model	.995	.986	.046
Weak Factorial Invariance Model	.998	.996	.025
Strong Factorial Invariance Model	1.00	1.00	.000
Strict Factorial Invariance Model	.984	.976	.060
Perfectionistic Strivings			
Configural Model	.990	.974	.066
Weak Factorial Invariance Model	.990	.978	.061
Strong Factorial Invariance Model	.962	.931	.108
Strict Factorial Invariance Model	.952	.930	.109

Note. The configural invariance model is a baseline model with minimal identification

constraints. The weak factorial invariance model constrains the factor loadings to equality

over time. The strong factorial invariance model constrains the factor loadings and

intercepts to equality over time. The strict factorial invariance model constrains the factor

loadings, intercepts, and unique factor variances to equality over time. CFI =

Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square
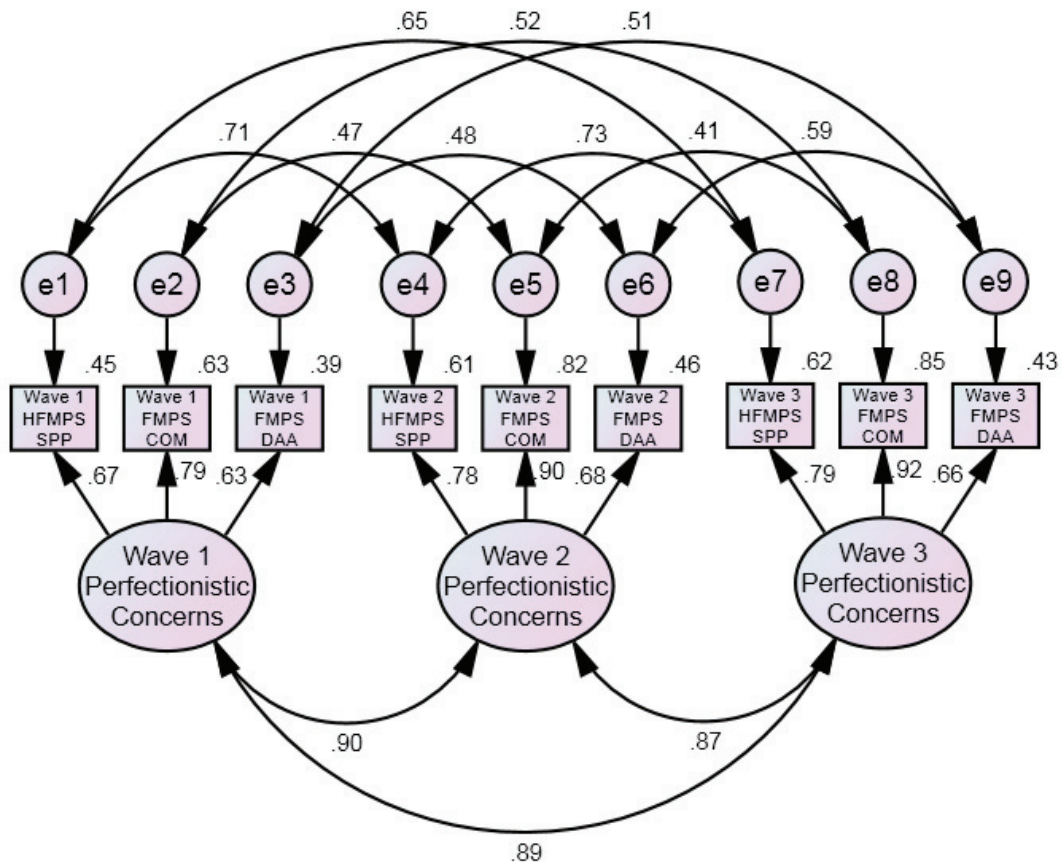
Approximation of Error.

Figure A1. Longitudinal confirmatory factor analysis for perfectionistic concerns. Ovals indicate latent variables. Rectangles indicate manifest indicators. Circles e1-e9 represent error terms. Numbers beside single-headed arrows pointing to manifest indicators represent standardized factor loadings. Numbers above the upper right hand corner of manifest indicators indicate R^2 values. Double-headed arrows indicate correlations. Figure A1 represents the strong factorial invariance model, where unstandardized factor loadings and intercepts were constrained to equality across waves. HFMPS SPP = Hewitt and Flett's (1991) Socially Prescribed Perfectionism; FMPS PS = Frost et al.'s (1990) Concern Over Mistakes; FMPS DAA = (Frost et al.'s (1990) Doubts About Actions.
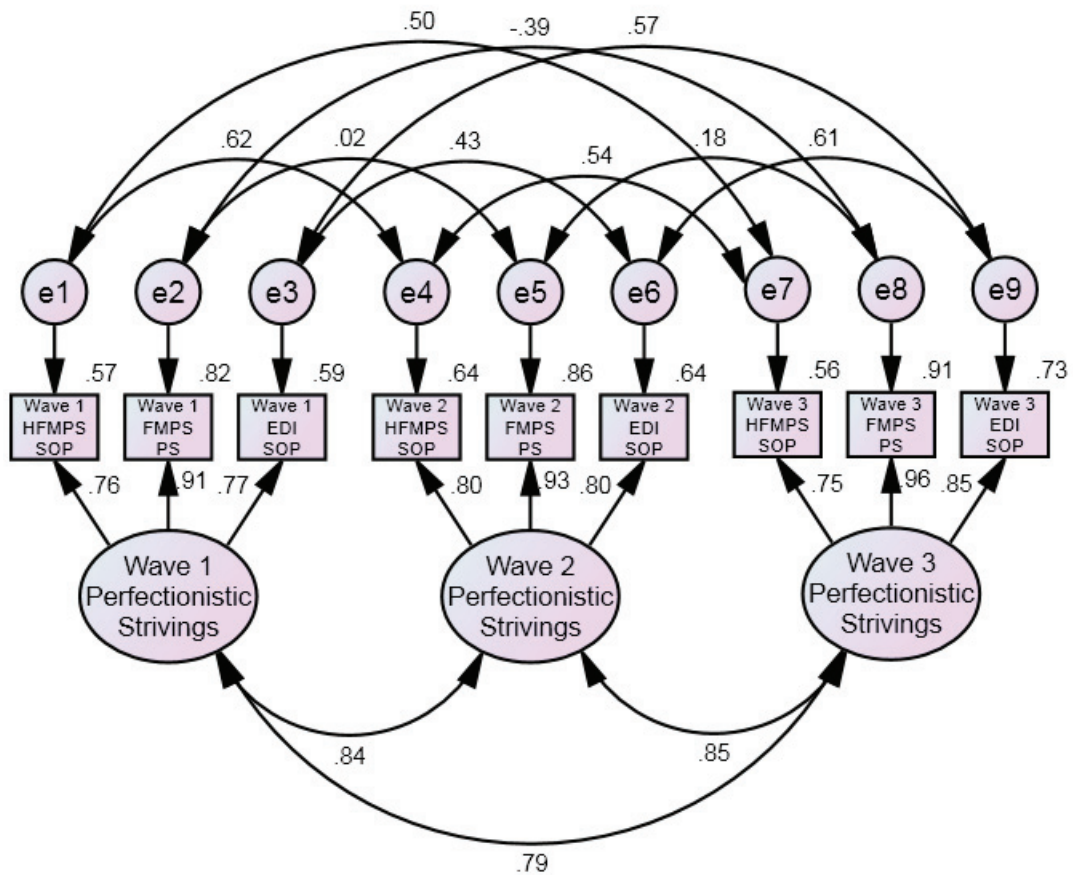
Figure A2. Longitudinal confirmatory factor analysis for perfectionistic strivings. Ovals

indicate latent variables. Rectangles indicate manifest indicators. Circles e1-e9 represent

error terms. Numbers beside single-headed arrows pointing to manifest indicators

represent standardized factor loadings. Numbers above the upper right hand corner of

manifest indicators indicate R^2 values. Double-headed arrows indicate correlations.

Figure A2 represents the weak factorial invariance model, where unstandardized factor

loadings were constrained to equality across waves. HFMPS SOP = Hewitt and Flett's

(1991) Self Oriented Perfectionism; FMPS PS = Frost et al.'s (1990) Personal Standards;

EDI SOP = Eating Disorder Inventory (Garner et al., 1983) Self Oriented Perfectionism.