

Antecedents and Consequences of Life Aspirations:  
Implications for Well-being and Self-regulation in Three Longitudinal  
Investigations

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## Table of Contents

Abstract.....	iii
Résumé.....	vi
Acknowledgments.....	ix
Contribution of Authors.....	xii
Statement of Original Contribution.....	xiv
General Introduction.....	1
Article 1.....	22
Bridge to Article 2.....	49
Article 2.....	50
Bridge to Article 3.....	92
Article 3.....	95
Summary and Conclusions.....	138
General References.....	156

### **Abstract**

The aim of the present doctoral thesis was to investigate the development of intrinsic relative to extrinsic values priorities, and the impact of individual differences in values priorities on adaptive functioning over time. Life aspirations of affluence, beauty, and fame are promoted by the mass media in Western society, yet mounting evidence has revealed that such aspirations may be detrimental to well-being. Self-determination theory researchers Kasser and Ryan (1993; 1996) have distinguished two forms of life values, intrinsic aspirations (personal growth, community contribution, and building close relationships) and extrinsic aspirations (wealth, popularity/fame, and physical attractiveness). Previous research has revealed that individuals who tend to prioritize intrinsic aspirations over extrinsic aspirations tend to experience greater well-being, and fewer symptoms of anxiety and depression.

However, recent reviews of this body of research (Koestner & Hope, 2014; Dittmar, Bond, Hurst, & Kasser, 2014) have found a lack of longitudinal studies necessary for examining both the developmental trajectory of aspirations and the impact of aspirations on future well-being. Without rigorous longitudinal investigations directionality in the relationship between prioritization of intrinsic relative to extrinsic aspirations and well-being remains unknown. Therefore, the present thesis examined the antecedents and consequences of the relative prioritization of intrinsic aspirations for young adults in three longitudinal investigations. Article 1 examines the influence of *change* in young adults' values (intrinsic relative to extrinsic aspirations) over an academic year on their changes in well-being and their psychosocial development. Following 196 students from September to April, I found that found that increased prioritization of intrinsic relative to extrinsic

values over the year led to greater identity and intimacy development. Article 2 continues on the theme of longitudinally examining the consequences of intrinsic relative to extrinsic aspirations. However, instead of focusing on intrinsic relative to extrinsic aspirations exclusively at the level of the person, Article 2 also considers the impact of differences in aspirational strivings at the level of the goal. Specifically, Article 2 examines the impact of pursuing personal goals connected to intrinsic relative to extrinsic aspirations on young adults' goal progress and goal-related affect. I found that individuals make greater goal progress and experience greater vitality from pursuing their more intrinsic personal goals. In my final doctoral investigation, Article 3, I elucidated pathways to development of young adults' values, examining the influence of social context and close others' personality (e.g., trait perfectionism) on individuals' prioritization of intrinsic relative to extrinsic aspirations. In this multi-informant longitudinal study of 341 students and their friends and family members, I found that friends' level of perfectionism predicted an increase in the students' extrinsic aspirations over time. In turn, as students' prioritized extrinsic over intrinsic aspirations, their well-being decreased, and they became more controlled and less autonomous in their motivation for their personal goals.

Overall, the empirical evidence collected for the present work suggests a positive impact of prioritizing intrinsic aspirations over time. In the conclusion, I review the following empirical contributions of the present work: 1) young adults who prioritize intrinsic relative to extrinsic aspirations more highly tend to experience increased well-being over time, compared to those who are lower on prioritization of intrinsic aspirations 2) prioritizing intrinsic aspirations and pursuing personal goals connected to intrinsic

aspirations leads to greater goal progress and vitality for goals, and 3) close friends' perfectionism influences young adults' values priorities, predicting greater prioritization of extrinsic aspirations.

## Résumé

L'objectif de cette présente thèse de doctorat était d'étudier le développement des valeurs intrinsèques et extrinsèques ainsi que l'impact qu'ont les différences individuelles au niveau des valeurs sur le fonctionnement adaptatif au fil du temps. Les aspirations de richesse, beauté et célébrité sont promues par les médias dans les sociétés occidentales. Toutefois, des données de plus en plus nombreuses démontrent que de telles aspirations peuvent être néfastes pour le bien-être. Les chercheurs Kasser et Ryan (1993; 1996), étudiant la théorie de l'auto-détermination, ont différencié deux formes de valeurs de vie: les aspirations intrinsèques (croissance personnelle, contribution communautaire, et formation de relations étroites) et les aspirations extrinsèques (richesse, popularité/célébrité, et apparence physique). Des études antérieures ont révélé que les individus qui accordent davantage d'importance aux aspirations intrinsèques, par rapport aux aspirations extrinsèques, ont tendance à ressentir un plus grand bien-être et moins de symptômes liés à la dépression et l'anxiété.

Cependant, de récentes analyses de ce champ de recherche (Koestner & Hope, 2014; Dittmar, Bond, Hurst, & Kasser, 2014) ont démontré un manque de recherches longitudinales nécessaires à l'étude des trajectoires développementales des aspirations et de l'impact des aspirations sur le bien-être futur. En l'absence d'études longitudinales rigoureuses, la relation entre la mise en priorité des aspirations intrinsèques, par rapport aux aspirations extrinsèques, et le bien-être demeure inconnue. Ainsi, la présente thèse examine les antécédents et les conséquences de la mise en priorité relative des aspirations intrinsèques chez les jeunes adultes dans trois études longitudinales. L'Article 1 étudie l'influence des changements survenant au cours d'une année scolaire dans les valeurs des

jeunes adultes (aspirations intrinsèques par rapport à extrinsèques) sur les changements au niveau du bien-être et du développement psychosocial. En suivant 196 étudiants de septembre à avril, j'ai trouvé qu'une plus grande mise en priorité des valeurs intrinsèques au cours de l'année, par rapport aux valeurs extrinsèques, mène à un développement supérieur de l'identité et de l'intimité.

L'Article 2 continue sur le thème de l'étude longitudinale des conséquences associées aux aspirations intrinsèques, par rapport aux aspirations extrinsèques. Par contre, plutôt que de se concentrer uniquement sur les aspirations intrinsèques et extrinsèques au niveau de l'individu, L'Article 2 examine également l'impact des différences en terme d'ambition et de motivation au niveau des objectifs. Plus précisément, L'Article 2 étudie l'impact de la poursuite d'objectifs personnels associés aux valeurs intrinsèques, par rapport aux valeurs extrinsèques, sur la progression de l'objectif et l'état émotionnel lié à l'objectif chez les jeunes adultes. J'ai trouvé que les individus font davantage de progrès et ressentent davantage de vitalité en poursuivant leurs objectifs personnels les plus intrinsèques.

Dans mon étude doctorale finale, L'Article 3, j'ai élucidé les trajectoires de développement des valeurs chez les jeunes adultes, examinant les influences du contexte social et de la personnalité des proches (ex. le perfectionnisme) sur la mise en priorité des aspirations intrinsèques par rapport aux aspirations extrinsèques. Dans cette longitudinale à informateurs multiples effectuée auprès de 341 étudiants, de leurs amis et des membres de leur famille, j'ai trouvé que le niveau de perfectionnisme chez les amis prédit une augmentation des aspirations extrinsèques avec le temps. D'une autre part, lorsque les étudiants mettent en priorité des aspirations extrinsèques, par rapport aux aspirations

intrinsèques, leur bien-être diminue et ils deviennent davantage contrôlés et moins autonomes dans leur motivation à poursuivre leurs objectifs personnels.

Dans l'ensemble, les données empiriques recueillies pour le présent ouvrage suggèrent un impact positif de la mise en priorité des aspirations intrinsèques au fil du temps. Dans la conclusion, je passe en revue les contributions empiriques suivantes du présent ouvrage: 1) les jeunes adultes qui privilégient les aspirations intrinsèques, par rapport aux aspirations extrinsèques, ont davantage tendance à éprouver une augmentation de leur bien-être avec le temps, par rapport à ceux qui accordent moins d'importance aux aspirations intrinsèques 2) mettre en priorité des aspirations intrinsèques, ainsi que la poursuite d'objectifs personnels associés aux aspirations intrinsèques, mène à davantage de progrès dans les objectifs et de vitalité face aux objectifs, et 3) le perfectionnisme des amis proches influence la mise en priorité des valeurs chez les jeunes adultes, prédisant une plus importante mise en priorité des aspirations extrinsèques.



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### Contribution of Authors

Three manuscripts are included in the present doctoral thesis. The first manuscript was co-authored by myself, Marina Milyavskaya, Anne Holding and Richard Koestner. I conducted the literature review, which led to the research questions of the study. These questions were further developed with the input of Richard Koestner. The data was collected by myself, Marina Milyavskaya, and Richard Koestner, with assistance from undergraduate research assistants. I conducted all data analyses and interpreted the data, with some input from Marina Milyavsaya and Richard Koestner. I wrote and revised the manuscript, and received editorial assistance from all three co-authors, Richard Koestner, Marina Milyavskaya, and Anne Holding, in revising the manuscript prior to its publication in *Social Psychological and Personality Science*.

The second manuscript is currently unpublished (under review) and was co-authored by myself, Marina Milyavskaya, Anne Holding, and Richard Koestner. I conceptualized the study and research questions with input from Richard Koestner. The data for both studies included in the manuscript was collected by myself and Marina Milyavskaya, under the supervision of Richard Koestner. Data analysis was conducted by myself and Marina Milyavskaya, with assistance in interpretation from Richard Koestner. I conducted the literature review of relevant areas of research and wrote the manuscript with input from Richard Koestner. Anne Holding, Marina Milyavskaya, and Richard Koestner contributed to revision of the manuscript for publication.

The third manuscript was co-authored by myself, Anne Holding, Brenda Harvey, and Richard Koestner. Anne Holding and I designed the study and collected the data, under Richard Koestner's supervision. Brenda Harvey contributed to study conceptualization and design, selecting the measures of perfectionism included in the

study. The data for the longitudinal study were analyzed and interpreted by myself and Richard Koester. I reviewed the literature and wrote the manuscript, with assistance from Dr. Richard Koestner. Anne Holding and Brenda Harvey further contributed to revision of the manuscript prior to its publication in *The Journal of Personality*.

## Statement of Original Contribution

### *Unique Analytical and Theoretical Contributions*

Life values are meaningfully associated with behaviour, attitudes, and well-being cross-sectionally (Rokeach, 1973; Kasser & Ryan 1993; 1996), however, values and other personal concerns have received limited empirical attention compared to dispositional traits (McAdams, 1995). Researchers have identified values as an understudied area of human differences and behaviour (Kasser, 2002; Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009; Lokes, 2012). In particular, there have been few studies that have investigated the relationship between life values and well-being or the process of change in values over time. Recently, Dittmar, Bond, Hurst, and Kasser (2014) identified longitudinal investigation of values (e.g., intrinsic relative to extrinsic aspirations) and well-being as a significant gap in the literature. Similarly, Bardi, Lee, Hofmann-Towfigh, and Soutar, (2009) have called for investigation of value change over time.

The present thesis addresses the gap in prospective investigation of life values and adaptive outcomes (well-being, goal progress, and self-concordance for goals) in a series of three longitudinal investigations. The three articles in the thesis each contribute unique additions to both analytical and theoretical understanding of the relationship between relative prioritization of intrinsic aspirations and adaptive outcomes. Article 1 is a longitudinal study looking at change in aspirations. Few studies have examined the phenomenon of value change in adults, although empirical research has shown that adults' values are not as stable as once presumed (Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009.) Article 1 tests a novel hypothesis, derived from Erikson's (1959) theory of psychosocial development. My colleagues and I tested the hypothesis that a shift towards intrinsic aspirations would relate to increased identity and intimacy development in

university students, which in turn would relate to increased well-being across the span of the study. Additionally, Article 1 also assesses both hedonic and eudaimonic conceptualizations of well-being. Eudaimonic outcomes, such as psychological well-being, have been under-investigated in studies assessing the relationship between life values and well-being.

Article 2 is unique in examining aspirations at the level of the person (individual differences in life aspirations) and the level of the goal (within person differences in aspirational content of goals). In order to examine the structure of life aspirations at both levels, the studies presented in Article 2 take a rigorous analytic approach. Specifically, goals are nested within individuals in a multilevel modeling (MLM) framework. First, this allows for examination of how overall life aspirations, an individual difference measure, influence the types of personal goals that someone elects to pursue. Secondly, this allows for comparison of outcomes for goals that are more intrinsic vs. goals that are more extrinsic in content *within person*: That is, as someone pursues different goals, what are the characteristics and outcomes of their goals on the basis of relative intrinsic aspirations content? Specifically, we examined goal progress (progress made on each of their goals) and affect (experience of vitality for each goal) over time. Article 2 also makes the case for motivational researchers to apply a MLM approach for research on personal goals. Most research on personal goal striving relies on between person analytic approaches, which neglects to account for within person differences in goal content and motivation. Without a MLM approach, the question of “what types of goals do people feel better pursuing?” and “what types of goals are more likely to be met with success?” cannot be fully answered.

Article 3 extends the efforts of Article 1 to address the neglect of longitudinal investigations on the relationship between life aspirations and well-being. Article 3 presents the results of a three-month multiple informant study on students' prioritization of extrinsic relative to intrinsic aspirations. In the investigation presented in Article 3, we recruited over 300 students, as well as a close family member and friend of each participant, and examined the impact of self-reported aspirations at the start of the study on changes in well-being and self-concordance (autonomous relative to controlled motivation for personal goals) over three months. Furthermore, Article 3 contributes to our understanding of life aspirations by considering the influence of close friends and family members' personality on students' values priorities. Previous research has demonstrated students' immersion in certain social environments, such as law school (Sheldon & Krieger, 2004), can catalyze a shift towards valuing extrinsic aspirations over intrinsic aspirations. However, the influence of close others' personality in the development of an orientation towards extrinsic relative to intrinsic aspirations in young adulthood has not been adequately considered or empirically characterized. I consider a novel antecedent of prioritization of extrinsic relative to intrinsic aspirations: close others' perfectionism.



## **General Introduction**

Over half a century ago, Abraham Maslow (1954/1987; 1968/1999) prescribed researchers with the mandate to develop a psychology of healthy, exemplary human phenomena in addition to the pathological. Maslow posited that the psychologically healthy human being could not simply be characterized by a lack of mental illness. Instead, psychological wellness had to be objectively defined and scientifically investigated at the levels of behaviour, motivation, and values. While the field of clinical psychology has traditionally focused on describing, elucidating, and treating the abnormal, aiming to bring mentally ill individuals back to the “normal”, Maslow argued that the “normal” was a dull and undeserving model for us to strive for. As Maslow stated:

“Human life will never be understood unless its highest aspirations are taken into account. Growth, self-actualization, the striving toward health, the quest for identity and autonomy, the yearning for excellence must by now be accepted beyond question as a widespread and perhaps universal human tendency.”

(Abraham Maslow, 1954/1987, p. 12)

The strivings and aspirations Maslow highlights are often manifested in individuals’ day-to-day goal pursuit. Indeed, both the nature of these strivings and whether or not goal progress is successful meaningfully influence subjective well-being. Prior research on subjective well-being and positive functioning over the past few decades has consistently shown that setting and progressing towards important personal goals is related to well-being outcomes (e.g., Diener, Suh, Lucas, & Smith, 1999).

Attention to the pleas of Maslow and other humanists, advocating for a psychology of the thriving and self-actualized side of human existence, has been slow-coming. In a 1995 review, Myers and Diener found that psychological articles investigating negative affective states predominated over those investigating positive states at a ratio of 17:1. However, in recent years, research on positive affective states, such as happiness, joy, and feelings of vitality has proliferated. Using “happiness” as a keyword search on the database PSYCinfo and setting the time frame to articles published within the fifteen years from 1985 to 1999, only 1,805 articles are retrieved. In contrast, searching again and setting the limits to the fifteen years from 2000 to 2014, 8,140 articles are retrieved, representing a growth of 451%.

### **Self-determination Theory**

An important source of renewed interest and greater empirical understanding of adaptive psychological functioning has been self-determination theory. Richard Ryan and Ed Deci’s self-determination theory (SDT; 2000) is a macro theory of personality and motivation, which proposes three basic psychological needs are fundamental to understanding human thriving. Ryan and Deci (2000) assert that these three needs are innate and universal. Environments or social pressures which thwart satisfaction of the three innate psychological needs are considered detrimental to well-being. The three psychological needs identified in SDT are the need for autonomy (deCharms, 1968; Deci, 1975), the need for competence (Harter, 1978; White, 1959), and the need for relatedness (Baumeister & Leary, 1995).

The need for autonomy refers to a person’s perceived control over their actions, specifically the perception of acting as the causal agent of one’s life (Deci & Ryan,

1985). To act autonomously means to have a sense of volition and personal endorsement in initiation and maintenance of behaviour. Acting autonomously is contrasted to controlled regulation, which involves feeling coerced into an action due to a demand, threat, guilt or even reward from another, rather than personal choice. For example, a student may feel more autonomous in a required course is by having choice over assignments on the basis of personal interest (e.g., a variety of optional topics, and the opportunity to create their own). Competence refers to the ability to exert an effect on the environment, and to reach wanted outcomes within it. For example, a student's need for competence in the classroom could be bolstered by progressing towards clear guidelines outlined by the professor and getting helpful individualized feedback from their teaching assistant. Relatedness, the final need, refers to the desire to be cared for, connect with, and experience compassion for others. Feeling supported and included in extracurricular activities by other students is one way a student's need for relatedness could be satisfied on the university campus.

SDT distinguishes itself from other motivational theories in two ways, i) the centrality of need for autonomy, and ii) the proposal that basic psychological needs are universal and innate. The need for autonomy is unique to self-determination theory, while the needs for relatedness and competence can be found in other psychological theories (Deci & Ryan, 2000). Deci and Ryan have emphasized that acting autonomously does not refer to being independent or disconnected from others (2000). Rather, autonomy entails “being volitional, acting from one's integrated sense of self, and endorsing one's actions” (p. 247). One can act autonomously in choosing to depend on others or behave in accordance to others, for example, choosing to commit to a

romantic relationship, or choosing to order the same entrée as a friend when dining out.

SDT can be contrasted to Motive Disposition Theory (MDT; McClelland, 1985), another prominent need theory; MDT proposes that through experience individuals come to vary in their motive dispositions, and in turn benefit most from behaviours that are concordant to their specific dispositions. For example, for one young management student, fulfillment of need for power may be very important to their well-being and direct their future goals (e.g., Gain an executive position in a company by age 35), while for another young management student, fulfillment of need for affiliation may be paramount to their well-being and future goals (e.g., Get married and have children by age 35). According to MDT, the first student will flourish if need for power is met in daily life, and flounder if need for power is thwarted. However, this student may not be negatively affected by sacrificing time with close others for long hours at work. If the second student (high in need for affiliation) is isolated in daily life, thus not fulfilling her need for affiliation, she will suffer.

Instead, SDT proposes that fulfillment of the basic psychological needs of autonomy, competence, and relatedness is beneficial to all, regardless of cultural context or life experience, and orientation toward fulfillment of basic needs is innate, rather than learned. According to SDT, both young management students will benefit from satisfaction of the needs of autonomy, competence, and relatedness in daily life. The first student, high in need for power, will not benefit less from satisfying relatedness needs (e.g., feeling connected to and cared for by friends) than the second student, high in need for relatedness. In fact, the first student could psychologically suffer if she subjugates her

need for relatedness by spending evenings isolated in her office working over time, even if she is doing so to progress towards her dreams of being an influential executive.

According to SDT, the three basic psychological needs are *essential nutrients* for growth (Deci & Ryan, 2000). The needs are essential nutrients in that need thwarting will result in poor functional outcomes, including ill-being and pursuit of maladaptive goals (i.e., need substitutes). A vitamin analogy has been used to relay the concept of psychological needs as basic nutrients (Deci & Ryan, 2013). Just as a vitamin deficiency will result in measurable deficits (e.g., hair loss), a need deficiency will result in measurable deficits in well-being. Therefore, if a phenomenon (e.g., autonomy) is a basic psychological need, there should be evidence of degradation if the need is not adequately satisfied, and evidence of thriving or well-being if the need is satisfied.

Empirical evidence has supported the SDT hypothesis that need satisfaction of autonomy, competence, and relatedness will result in increased well-being, while need deprivation will result in decreased well-being. Daily diary studies, using multi-level modeling (MLM) to investigate within-person fluctuations in need satisfaction and daily changes in well-being, have revealed that well-being fluctuates as a function of changes in need satisfaction in the environment (Sheldon, Ryan, Reis, 1996; Reis et al., 2000). Need satisfaction can be measured via self-report in general (e.g., measuring how autonomous one has felt in the past two weeks) or in specific domains (e.g., measuring how autonomous one feels when practicing and playing games with their soccer team). Recent investigations have found that both general need satisfaction and domain-specific need satisfaction (e.g., need satisfaction when at school; need satisfaction in leisure)

independently contribute to well-being (Milyavskaya, Philippe, & Koestner, 2013; Milyavskaya & Koestner, 2011).

### **The Study of Life Values**

A value is defined as a relatively stable belief that specifies a desired end-goal (e.g., world peace) or manner of behaving (e.g., honesty across situations) and serves as a standard to guide judgment and behaviour across time and place (Rokeach, 1973, p.25). A person's values can be said to serve as "guiding principles in life" (Schwartz & Bardi, 2001, p. 269). Attitudes are considered to be subservient to values, with values assuming a more influential role in an individual's behaviour across situations (Rokeach, 1973; Allport, 1961). In contrast to an attitude which is situation specific, "a value transcends objects and situations" (Rokeach, 1973, p.18).

According to Rokeach (1973), values serve an important motivational function, guiding actions and decision-making in everyday life. Furthermore, values facilitate long-term goal pursuit by specifying preferred end-goals and directing attention to delayed outcomes. For example, if someone highly values equality, that individual may forgo immediate personal gain (e.g., a one-time competitive bonus at work for one person) in favour of a shared future outcome that benefits everyone (e.g., pay equity across gender and race at work). Schwartz and Bilsky (1987, 1990; cf. Schwartz, 1992) assert that values orient individuals to satisfying "three universal requirements of human existence...: needs of individuals as biological organisms, requisites of coordinated social interaction, and survival and welfare needs of groups" (Schwartz, 1992, p. 4). Values can help an individual to transcend immediate temptations and selfish gains, to strive towards goals that present greater long-term benefits to the self or society.

Learning about an individual's value priorities, capturing their hopes for an ideal world, can tell us something important about the person that cannot be captured by trait assessment alone. In McAdams (1995) three-level framework of personality, values are considered a central feature of level 2, the level of personal concerns. An individual's personal concerns, which include values, personal goals, and competencies, are largely independent from dispositional traits (level 1; e.g., how neurotic, open to experience, agreeable, extraverted, and conscientiousness the person is), and life story (level 3; e.g., the inner narrative of the person's life course and identity). McAdams suggests that taken collectively, the three levels of "dispositional traits, personal concerns, and life stories provide a full description of a person" (p. 390-1.) In his 1995 manuscript proposing the three-level framework McAdams asserted that the majority of personality research has focused on individual differences in dispositional traits, and that level 2 is a "vast" yet "largely unmapped domain in personality" (p. 376). Moreover, within the domain of personal concerns, researchers have acknowledged life values as an area of research that has not received sufficient attention (Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009; as cited in Lokes, 2012).

Meaningful individual differences in value priorities arise both within cultures (e.g., comparing individuals living in Canada) and between cultures (e.g., comparing rated importance of benevolence in China vs. Canada; comparing student vs. teacher importance of self-direction). For example, individuals sampled living in Western European nations, including France, West Germany, and Sweden, have been found to place greater importance on values related to intellectual autonomy (creativity, broadmindedness, and curiosity) compared to individuals living in Eastern Asian

countries, including China, Hong Kong, Thailand, and India (Schwartz, 1999). Despite some cross-cultural differences in value priorities, Schwartz and Bardi have also uncovered “a striking degree of consensus across individuals and societies” (2001, p.269) on what values are most important. In their research on the structure of values across cultures, they have found that some values are consistently under-prioritized compared to other values. Interestingly, the importance of wealth and power (less prosocial values) tend to be de-emphasized compared to interpersonally helpful values of benevolence and honesty (Schwartz & Bardi, 2001).

In empirical research, individuals’ value priorities have been assessed several different ways. Milton Rokeach created the Rokeach Value Survey (RVS; 1973), which requires participants to rank two sets of nine values in order of personal importance, from most to least important. The RVS was used to measure differences in value priorities between individuals from different geographic, racial, socio-economic, and religious backgrounds, as well as to examine the impact of values on behaviour. For example, Rokeach (1973) found that Americans with graduate degrees placed greater importance on “a world of peace” and “wisdom” compared to those without graduate educations, and placed less importance on “family security”. Examining the impact of values on activism, Rokeach found that prioritization of the value “equality” significantly predicted White college students enrollment in the *National Association for the Advancement of Colored People (NAACP)*, an American civil rights organization. More recently, Shalom Schwartz created the Schwartz Values Survey (SVS; 1992), to measure the importance of 57 value items which can be grouped into 10 values types (Power, Achievement, Hedonism; Stimulation; Self-direction; Universalism; Benevolence; Tradition;



Conformity; Security). Unlike the RVS, the SVS does not require ranking items in order of most to least important, which can be cumbersome for participants to complete and restrict the range of statistical analyses possible with the data. Instead, on the SVS participants are asked to rate each individual value item on a 9-point likert scale ranging from *of supreme importance* (7), to *opposed to my values* (-1).

### **Intrinsic and Extrinsic Life Aspirations**

Approaching the study of values from a self-determination theory perspective, Tim Kasser and Richard Ryan created a novel values classification and measurement system (1993). Kasser and Ryan hypothesized that the pursuit of certain values, those that connect to satisfaction of the basic psychological needs, would result in greater well-being compared to the pursuit of other values. Kasser and Ryan dichotomized life values into intrinsic and extrinsic aspirations (1993;1996). *Intrinsic aspirations*, which include striving for personal growth, building intimate relationships, and community contribution, are those that inherently satisfy the basic psychological needs of autonomy, relatedness, and competence. In contrast, *extrinsic aspirations*, which include striving for wealth, popularity/fame, and physical attractiveness, are not directly related to satisfaction of the basic psychological needs, and are instead means to gaining external reward or approval from others.

A unique contribution of self-determination theory to the empirical investigation of life values is the proposition that certain values may be more adaptive than others. Rokeach (1973) attempted to take a “value-free” approach to the study of human values, categorizing no single value as higher order or superior to any other value. However, Rokeach did suggest (1973) that “different subsets of values may differentially serve

Maslow's safety, security, love, self-esteem, and self-actualization needs" (p.16). In contrast to Rokeach's value-free approach, Kasser and Ryan proposed (1993; 1996) that some values may be more conducive to living a thriving and satisfying life compared to others. Taking a self-determination theory approach, Kasser and Ryan hypothesized that intrinsic aspirations related to fulfillment of the basic psychological needs of autonomy, competence, and relatedness would be related to greater well-being and psychological functioning, compared to extrinsic aspirations, such as striving for wealth.

Kasser and Ryan (1993) noted that behavioural and humanistic approaches to the study of life values and well-being may offer contrasting predictions, but that these predictions had not been empirically evaluated. Behavioural approaches, such as Bandura's theory of self-efficacy (1977, 1979) suggest that people will benefit from pursuing and reaching external rewards if they feel effective in striving towards these rewards. However, humanistic theorists propose that excessive focus on materialism will catalyze psychological problems (even if one successfully gains the goal)<sup>1</sup>. For example, in the book *To Have or to Be?* Erich Fromm (1976) criticized post-industrial materialistic values. He warned that the great promise of mass production and material expansion that grew from the industrial revolution had led to excessive focus on achieving material success (*having mode*), a goal-orientation he believed would lead away from living a happy, meaningful life with intimate close relationships (*being mode*). He cautioned that being guided by the gain of external rewards, or approval from others was the route to unhappiness. Influential humanist and progenitor of empirical investigation of psychotherapeutic outcomes, Carl Rogers (1961), viewed rigidity and conformity in life

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<sup>1</sup> Perhaps agreeing with the message of late American rap artist, Notorious B.I.G.'s, posthumous release "mo [sic] money, mo problems" (1997).

strivings as incompatible to building a meaningful life. Rogers theorized that the good life is one in which the lives in the moment with full awareness (e.g., conscious experience of emotions, thoughts, and emotions; acting in accordance to one's present experience), focuses on the process of life rather than end-states, is committed to personal growth throughout life, and acts authentically as oneself rather than conforming to external pressures from others (1961).

Despite an abundance of theorizing on the subject among 20<sup>th</sup> century humanistic psychologists such as Abraham Maslow, Carl Rogers, and Erich Fromm (Kasser, 2002), there was little empirical investigation of the relationship between materialistic relative to prosocial values and well-being until inception of the *Aspiration Index* (Kasser & Ryan, 1993). Initially, Kasser and Ryan's research (1993) was particularly interested in how financial and materialistic aspirations impact well-being. The authors postulated that pursuit of extrinsic aspirations may detract from the fulfillment of basic psychological needs, resulting in decreased well-being for people who place greater importance on financial aspirations relative to more intrinsic pursuits, such as building close relationships. In order to test the hypothesis that privileging financial success over other aspirations would be related to lower well-being and self-actualization, Kasser and Ryan developed the *Aspiration Index*. The *Aspiration Index* is a self-report measure, designed to assess centrality of values. In the original version of the *Aspiration Index*, participants were presented with 21 items on possible future states, such as “You will help people in need” and “You will have a job that pays well”, and asked to rate the personal importance of each item on a likert scale from 1, *not at all*, to 5, *very important*. Each item

corresponded to one of four domains of aspirations, financial success, affiliation/building close relationships, community contribution, and self-growth.

In the first study using the *Aspiration Index*, conducted on American college students, Kasser and Ryan (1993) found that students who prioritized financial aspirations over intrinsic aspirations reported lower self-actualization, as well as greater symptoms of depression and anxiety. In a second study, centrality of financial aspirations was again found to be negatively correlated to college students' well-being and mental health. In a third study, conducted on a more diverse sample of community youth, the researchers employed a rigorous clinical interview to assess mental illness outcomes. Replicating the negative relationship between centrality of financial aspirations and well-being, the researchers found that financial aspirations were associated with lower global adjustment, lower social productivity, and more behavioural disorders (Kasser & Ryan, 1993).

In a second set of studies (Kasser & Ryan, 1996), the *Aspiration Index* was expanded to assess two additional extrinsic domains, social recognition (fame and popularity) strivings and appealing physical appearance (beauty) strivings, and one additional proposed intrinsic domain, physical fitness<sup>2</sup>. Factor analyses supported two distinct factors that corresponded to intrinsic and extrinsic aspirations, with individuals' who placed higher importance on one extrinsic aspiration generally placing greater importance on all three extrinsic aspirations, and the same pattern for intrinsic

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<sup>2</sup> Physical fitness aspirations were not assessed in the present doctoral work, due to high cross-loadings on both "intrinsic" and "extrinsic" factors in previous studies examining the structure of aspirations using factor analysis (e.g., Schmuck, Kasser, & Ryan, 2000). Reasons for valuing physical fitness can be extrinsic in nature (e.g., valuing fitness, in order to look better to others), and it seems that physical health strivings are often highly valued by both extrinsically-oriented and intrinsically-oriented individuals.

aspirations. Therefore, the researchers examined relative prioritization of intrinsic aspirations (combining scores on ratings of community contribution, building intimate relationships, personal-growth and physical fitness) and relative prioritization of extrinsic aspirations (financial success, fame/popularity, and beauty) as the independent variables. Using hierarchical regression analyses, controlling for overall importance ratings, Kasser and Ryan (1996) found that prioritization of intrinsic aspirations was related to greater self-actualization, vitality, and less symptoms of physical illness, while the converse was true for prioritization of extrinsic aspirations. Prioritization of intrinsic aspirations was negatively related to depression, while prioritization of extrinsic aspirations was unrelated when entered at the same step of the regression. In a second sample, results were replicated (self-actualization, vitality, depression, and physical symptoms) and extended to examine daily affect, with intrinsic aspirations prioritization also predicting daily positive affect. Taken collectively, a consistent pattern of results emerged: individuals who prioritized intrinsic aspirations seemed to benefit from greater well-being.

### **Advancement of Research on Life Aspirations: Around the World and Behavioural Outcomes**

Initial measurement and research on life aspirations was conducted in a North American context, with the suggestion that extrinsic aspirations might represent a “dark side of the American Dream” (Kasser & Ryan 1993; 1996), yet empirical evidence suggests that the relationship between intrinsic relative to extrinsic aspirations and well-being is universal. The positive association between orientation towards intrinsic aspirations and well-being has been replicated in numerous university samples in North

America (e.g., Sheldon, Ryan, Deci, & Kasser, 2004; Lekes, Gingras, Philippe, Koestner, & Fang, 2010), as well as extended to Russia (Ryan et al., 1999), Germany, (Schmuck, Kasser, & Ryan, 2000), Singapore (Kasser & Ahuvia, 2002), South Korea (Kim, Kasser, & Lee, 2003), China (Lekes, Gingras, Philippe, Koestner, & Fang, 2010), and Hungary (Martos & Kopp, 2012). However, a limitation of most cross-cultural research on life aspirations and well-being has been the reliance on moderately small samples of convenience.

Martos and Kopp (2012) transcended this methodological limitation in a recent study on a large (N=4,841) nationally-representative sample of Hungarians. By collecting data from participants representative of the general population of Hungary, the authors were able to address an important criticism of previous research on life aspirations: Could socio-economic status (SES) moderate the relationship between life aspirations and well-being? For example, perhaps for low SES individuals, striving for extrinsic aspirations serves an adaptive purpose by orienting individuals to material resources (i.e., by striving for wealth, status, and image). Importantly, in the Hungarian sample with broad diversity of SES, analyses revealed that individuals' SES did not moderate the relationship between aspirations and well-being. For individuals in low, moderate, and high SES living contexts, pursuing intrinsic aspirations over extrinsic aspirations was found to be equally beneficial for well-being. These findings support self-determination theory's proposition that certain goals may be universally more optimal for human flourishing, compared to other goals (Deci & Ryan, 2000).

Prioritization of intrinsic relative to extrinsic aspirations has also been related to meaningful differences in daily behaviours and close relationships. Kasser and Ryan

(2001) wondered if individuals striving for extrinsic aspirations over more fulfilling intrinsic aspirations might engage more in behaviours designed to self-medicate or distract themselves from conscious awareness of inner experiences. In addition to investigating well-being as an outcome, the authors examined the relationship between life aspirations and TV watching (study 1), and drug use, alcohol use, and friendship quality (study 2). Prioritization of intrinsic relative to extrinsic aspirations was positively related to well-being, and negatively related to television use, alcohol use, and drug use. From these results, it appears that individuals pursuing extrinsic over intrinsic aspirations may also tend towards *experiential avoidance*, the attempt to escape certain thoughts and emotions (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996); In this study, extrinsic individuals engaged more in distracting activities and substances that are often used by humans to modulate (e.g., dampen) inner experience. Orientation towards extrinsic aspirations was also related to shorter and less satisfying relationships with friends and romantic partners (Kasser & Ryan, 2001).

Additional research has supported a positive relationship between orientation to intrinsic aspirations and adaptive interpersonal functioning. Individuals who prioritize intrinsic aspirations have been found to be more empathetic towards others (Sheldon & Kasser, 1995), experience less feelings of alienation from humanity (Khanna & Kasser, 2000; as reviewed in Sheldon & Kasser, 2001), and lower interpersonal distress (Auerbach, Webb, Schreck, McWhinnie, Ho, Zhu, & Yao, 2011). In a dyadic study on romantic couples in the U.S. and Germany, Law (2012) examined the effect of romantic partners' intrinsic and extrinsic aspirations on individuals' reported relationship satisfaction. Partners' importance of intrinsic aspirations was positively related to

relationship satisfaction and negatively related to conflict, while the reverse was true for partners' importance of extrinsic aspirations. Generalizing from these results, the portrait of the prototypical intrinsically-oriented individual seems to experience more adaptive relationships between self and the world, and is less likely to escape from present-moment awareness with television, alcohol, and drug use, compared to the prototypical extrinsically-oriented individual.

Recently, Dittmar, Bond, Hurst, & Kasser (2014) conducted a meta-analysis on the association between materialism and well-being. While not restricted to studies on the association between extrinsic aspirations and well-being, research on materialistic life values, including prioritization of extrinsic relative to intrinsic aspirations, comprised the majority of data included in the meta-analysis of over 700 effects within 175 independent studies in 151 reports (e.g., peer-reviewed research articles, graduate theses, and unpublished manuscripts). Interestingly, the authors note that over 90% of the manuscripts were published after 2000, indicating the rapid growth in empirical investigation of materialistic values and well-being. Relative importance of materialistic values (e.g., extrinsic relative to intrinsic aspirations or extrinsic aspirations relative to general importance of other values) was significantly negatively related to well-being ( $r = -.16$ ). Furthermore, this effect of relative importance of materialistic values was stronger than the effect on studies that assessed materialism (valuing money) alone, without assessing general values priorities.

These results emphasize the importance of considering individuals' orientation to materialistic values (e.g., extrinsic aspirations) relative to other values, instead of looking at materialistic or financial values in isolation. It seems that it is not how much one



values money, image, and fame/popularity that matters, so much as how much one *prioritizes* these materialistic values over potentially more psychologically satisfying values, such as building close relationships. Additional mediational analyses on a subset of studies found that individuals who prioritized materialistic values did indeed tend to experience lower psychological need satisfaction, mediating the relationship between materialistic values and well-being. The datasets included in the meta-analysis were cross sectional<sup>3</sup>, thus directionality of the effects was undetermined. The authors (Dittmar, Bond, Hurst, & Kasser, 2014) also investigated potential moderators of the relationship between materialism and well-being, including publication type (i.e., published vs. unpublished). There was no difference in effect size between published and unpublished studies, disconfirming the possibility that publication bias (tendency for peer-reviewed acceptance and subsequent publication of strong results, and rejection of null results) has inflated the perceived negative relationship between materialism and well-being in published scientific literature.

### **Rationale for Focus on Antecedents and Consequences of Life Aspirations**

In initial investigations on centrality of values and well-being using the *Aspiration Index*, Kasser and Ryan (1993) stated the need for longitudinal investigations to elucidate directionality. The researchers put forward two possible explanations for the negative relationship between prioritization of extrinsic aspirations and well-being.

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<sup>3</sup> Only eight reports were longitudinal out of 159 reports identified for the meta-analysis on materialism and well-being. For the meta-analysis, only baseline (T1) data was extracted from these longitudinal investigations.

The first possibility is that individuals who place greater importance on wealth may be less likely to satiate basic psychological needs, due to preoccupation with extrinsic achievements such as financial success, that may be means to an end, but are less inherently fulfilling as they are pursued. Moreover, excessive expenditure of self-regulatory resources on extrinsic striving may make attainment of need-satisfying intrinsic aspirations less likely. The second possibility is that individuals who are lower in well-being (e.g., neurotic individuals; individuals with a history of mental illness) are more likely to aspire to extrinsic aspirations, perhaps “view[ing] money [status, and appearance] as a means of self-enhancement” (p.420). A third possibility arises in more recent literature. Individuals who prioritize extrinsic aspirations may engage in greater social comparison compared to individuals who are more moderate in their prioritization of extrinsic relative to intrinsic aspirations (Sheldon, Ryan, Deci, and Kasser, 2004; Dittmar, Bond, Hurst, & Kasser, 2014)<sup>4</sup>, leading to decreased well-being. While cross-sectional research has found a consistent relationship between prioritization of intrinsic aspirations and well-being, directionality of the relationship cannot be assessed from cross-sectional design. The relationship between aspirations and well-being must be examined longitudinally in order to deduce directionality and mechanisms of effects.

However, longitudinal investigation has been slow to come to fruition; most research using the *Aspiration Index* in the two decades since its inception has relied on cross-sectional data-collection. A significant problem with the accumulation of cross-sectional studies is that the possibility remains that individuals who are globally lower in well-being tend to gravitate towards extrinsic aspirations. In their recent meta-analysis

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<sup>4</sup> The relationship between social comparison and aspirations is discussed in Article 3 of this dissertation.

Dittmar, Bond, and Kasser (2014) repeat Kasser and Ryan's (1993) call for longitudinal investigation, and identify this gap as a "clear weakness of the broader literature" and that "more longitudinal research is essential to determining whether changes in materialism result in changes in well-being" (p. 915).

There are two existing investigations on the relationship between relative intrinsic aspirations and well-being over time. In a study with prospective design, Niemiec, Ryan, and Deci (2009) examined the relationship between graduating college students' life aspirations, and prospective post-graduation goal attainment as well as psychological one year later. The authors found that importance of intrinsic aspirations was related to greater attainment of intrinsic aspirations one year later, which in turn was related to greater psychological health. Extrinsic attainment was related to decreased psychological health. However, the direct relationship between baseline importance of intrinsic relative to extrinsic aspirations and changes in psychological health was not reported. Sheldon, Ryan, Deci, & Kasser (2004) also investigated the relationship between aspirations and psychological health/ well-being longitudinally, however, focused on aspirations at the level of the goal rather than at the level of the person. They found that senior college students who tended to pursue goals higher in relative extrinsic-content experienced greater declines in well-being over the post-graduation year. While the results are intriguing, both of these investigations are limited in scope. Neither study is able to address whether a) changes in prioritization of intrinsic aspirations correspond to changes in well-being or b) whether prioritization of intrinsic aspirations at baseline predicts increased well-being over time. Therefore, longitudinal investigations to understand the

direction, process, and mechanisms of change in aspirations and well-being remain warranted.

### **The Present Work**

In response to the accumulating evidence that life aspirations are meaningfully related to well-being and the need for longitudinal investigations to explore directionality of the relationship, the present work addresses the antecedents and consequences of intrinsic relative to extrinsic aspirations in three investigations with longitudinal design. Using a self-determination theory approach, the three articles in this doctoral dissertation build on previous empirical evidence exploring a relationship between intrinsic aspirations prioritization and well-being, and extend the existing literature through novel hypotheses and contemporary analytic methods.

Article 1 examines the influence of *change* in values over time on well-being and psychosocial development. Specifically, we hypothesized that young adults who become more intrinsic in their life aspirations over the academic year would experience greater gains in Eriksonian identity and intimacy development, as well as well-being. Testing a mediation model, we found support for psychosocial development mediating the relationship between changes in life aspirations and well-being. Students who increased importance of intrinsic relative to extrinsic aspirations from T1 to T2 were more likely to report higher subjective well-being (SWB) and psychological well-being (PWB), and this was moderated by increases in identity and intimacy development between the two assessments.

Article 2 extends understanding of the role of life aspirations in adaptive goal pursuit and self-regulation using a multilevel modeling (MLM) analytic approach. Across two studies (Article 2), the structure of aspirations are examined at the level of the individual (e.g., prioritization of intrinsic relative to extrinsic aspirations) and the level of specific personal goals (e.g., within person variation in intrinsic relative to extrinsic content of goals) to elucidate the relationship between life aspirations and i) goal progress and ii) goal vitality.

Lastly, Article 3 explores the influence of family members' and peers' personality on young adults' prioritization of intrinsic relative to extrinsic aspirations. Using a multiple informant prospective design, we assessed students' life aspirations and personality traits, as well as the personality of a close friend and the personality of a family member, and proceeded to follow the students' well-being and self-concordance over three months as they pursued several personal goals. The results suggest a potential "dark-side" of peers' perfectionism; individuals who prioritized extrinsic aspirations of wealth, fame/popularity, and image more highly were more likely to have friends high in other-oriented perfectionism, the tendency to demand high achievement from others. Article 3 also further addresses the lack of longitudinal investigation on the relationship between life aspirations and well-being through prospective measurement, while extending existing evidence by exploring the influence of life aspirations on self-concordance for personal goals over time.

**Article 1**

Self-growth in the College Years: Increased Importance of Intrinsic Values Predicts  
Resolution of Identity and Intimacy Stages<sup>5</sup>

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### Abstract

Could a shift in values over time drive resolution of identity and intimacy in young adulthood? In the present study, we found support for our hypothesis that increased prioritization of intrinsic values over an academic year predicts university students' resolution of the Eriksonian stages of identity and intimacy, and that stage resolution would mediate the relationship between value change and enhanced well-being. Among the 196 students followed from September to April, we found that increased prioritization of intrinsic relative to extrinsic values over the year related to greater resolution of both identity and intimacy, controlling for stage resolution at T1, and that increased resolution positively predicted enhanced subjective well-being (SWB) and psychological well-being (PWB) over time.

Self-growth in the College Years: Increased Importance of Intrinsic Values Predicts  
Resolution of Identity and Intimacy Stages

“He allowed himself to be swayed by his conviction that human beings are not born once and for all on the day their mothers give birth to them, but that life obliges them over and over again to give birth to themselves.”

- Gabriel García Márquez, *Love in the Time of Cholera* (1988, p. 165)

"It takes so much longer than I thought it would take to figure out who you are"

- Pete Holmes, comedian (2013)

University is a transformative time for young adults, both inside and outside the classroom. Competence, self-knowledge, friendships, and relationships both flourish and face challenges in new and changing environments. For many university students, the start of college is the first extended period of time living outside of the family home, away from a more homogeneous place of origin, and into a context where new cultures are encountered (e.g., from the culture of the loud fraternity house next door, to that of the biology department, to that of your international roommate in residence) and new freedom to make choices concerning lifestyle, religious practice, hobbies, habits, eating rituals, and social circles is available.

Values serve as an important guide for personal choices in behaviour, short-term, and long-term goals. For example, a student who highly values their close relationships may volitionally turn down a lucrative summer internship to look after an ailing family member. In the present paper, we aimed to test the hypothesis that personal values,



specifically, intrinsic values, play an important role in the development of identity and intimacy potentialities (e.g. Erikson, 1982). In turn, we also predicted that increased identity resolution across the academic year mediates the relationship between a change in value priorities and well-being among students.

### **Psychosocial development across the lifespan**

Erik Erikson ushered in an important shift in perspective for the study of human development. While developmental psychology traditionally restricted empirical and theoretical inquiry to the stage of childhood and early adolescence, Erikson viewed development as a never-ending process of growth and change throughout life (Erikson, 1959). Erikson proposed eight psychosocial stages across the lifespan, at each of which a different 'crisis' is met, grappled with, and if successfully solved produces a new set of competencies (1959). Unfolding from infancy to old age, Erikson's eight stages are 1) basic trust vs. mistrust, 2) autonomy vs. shame, 3) initiative vs. guilt 4) industry vs. inferiority, 5) identity vs. role confusion, 6) intimacy vs. isolation, 7) generativity vs. stagnation, and 8) integrity vs. despair.

Of particular interest to researchers studying young adults and university students are the fifth and sixth stages, concerning resolution of the identity and intimacy crises. The fifth stage, identity vs. role confusion, is concerned with intense exploration and the establishment of a sense of 'who I am' and 'where I fit into the world'. While Erikson viewed identity vs. role confusion as a task of adolescence, the establishment of a clear identity is increasingly prolonged in 21<sup>st</sup> century western society, with young people attending school for longer, entering careers and settling down later (e.g., Arnett, 2000). The sixth stage, intimacy vs. isolation is concerned with facing possibilities of rejection,

and opening up to others to form deep, committed, confessional, mutually-caring relationships with romantic partners and close friends.

Of interest to the present study is a novel idea presented in Erikson's theory of stage development, proposing that an individual's journey through periods of uncertainty and doubt, resulting in altered views on the world and the self, could be a psychologically adaptive experience at each stage. In Erikson's words, "Each successive step...., is a potential crisis because of a radical *change in perspective*" (1959, p.55). In the present study, we are interested in empirically investigating whether a change in perspective, operationalized as a change in value prioritization across an academic year, predicts resolution of the identity and intimacy psychosocial stages.

### **Self-determination theory and the study of life values**

Self-determination theory (SDT; Ryan & Deci, 2000) is an organismic theory of human motivation, which postulates three basic psychological needs of autonomy, competence, and relatedness. Exposure to environmental contexts that thwart these needs, such as children regularly subjected to an excessively controlling, authoritarian parenting style or students in an alienating business school environment, have been shown to lead to ill-being and maladaptive self-regulation. Conversely, need-supportive contexts are thought to lead to psychological growth, well-being, and more adaptive forms of self-regulation. Empirical evidence has supported the universality of these three needs, with basic psychological need satisfaction predicting well-being and adaptive outcomes in cross-cultural samples (e.g., Chirkov; Ryan, & Willness, 2005), and a variety of domains (e.g., Milyavskaya & Koestner, 2011), from athletics (e.g., Reinboth, Duda, &

Ntoumanis, 2004) to working life (e.g., Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010).

Of interest to the present study, researchers have investigated associations between Eriksonian identity development and well-being within a Self-Determination Theory framework. For example, Luyckx and colleagues (2007) found that autonomous motivation moderated the relationship between information-oriented identity style (characterized by exploration of beliefs, assumptions, and goals) and identity integration, commitment, and self-esteem. Specifically, only autonomous college students benefited from holding an information-oriented style, while for those with low levels of autonomous motivation information-oriented style was negatively associated with identity integration. Empirical investigation has also found that adolescents' autonomous reasons for using a particular identity style were positively related to well-being, while controlled reasons for identity style were negatively related to well-being (Smits, Soenens, Vansteenkiste, Luyckx, Gossens 2010). Additionally, autonomous and controlled reasons for identity commitment contributed additional variance to the prediction of adolescents' adjustment beyond level of identity commitment (Soenens, Berzonsky, Dunkel, Papini, & Vansteenkiste, 2011). While these studies reveal a compelling relationship between identity development and autonomous motivation in predicting well-being, the relationship between changes in life values and psychosocial development in predicting young adults' well-being remains unexplored.

SDT researchers have identified and investigated different socio-cultural values as contexts which may support or conversely thwart basic psychological need satisfaction. Values have been defined as relatively stable beliefs that "transcend objects

and situations”, and influence our decisions as well as long term-goals (Grube, Mayton, & Ball-Rokeach, 1994, p.155). Within an SDT framework, Kasser and Ryan have differentiated between two forms of values, extrinsic and intrinsic values (Kasser & Ryan, 1993). *Intrinsic values*, such as striving for personal growth, building intimate relationships, and community contribution, are those that are thought to inherently satisfy basic psychological needs. In contrast, *extrinsic values*, such as striving for wealth, popularity, and image, are those that are reliant on external reward (e.g., material gain, or the approval and praise of others) and do not directly satisfy basic psychological needs.

Kasser & Ryan (1993; 1996) hypothesized that individuals who prioritize intrinsic values benefit from enhanced psychological health and well-being in comparison to individuals that prioritize extrinsic values. While placing some importance on extrinsic values may not be entirely malevolent, the disproportionate pursuit of extrinsic values is thought to detract from the fulfillment of basic psychological needs, decreasing well-being. In two initial studies on college students, Kasser and Ryan found that centrality of valuing wealth was negatively correlated with college students' well-being and mental health. In a third study, these findings were extended to a non-college, community sample, showing that financial values were associated with lower global adjustment, lower social productivity, and greater instances of behavioural disorders (Kasser & Ryan, 1993). The association between prioritization of intrinsic values and well-being, and extrinsic values and ill-being has been replicated in North America (e.g., Sheldon, Ryan, Deci, & Kasser, 2004), as well as extended to Russia (Ryan, Chirkov, Little, Sheldon, Timoshina, & Deci, 1999), Germany, (Schmuck, Kasser, & Ryan, 2000), Singapore (Kasser & Ahuvia, 2002), and South Korea (Kim, Kasser, & Lee, 2003).

Recently, researchers have examined the effects of changes in value priorities on well-being and mental health outcomes over time. In the first in a series of three longitudinal studies, Kasser and colleagues (2014) found that increased centrality of financial values over 12 years in an at-risk sample of American youth was related to increased mental health problems over this time period. In other words, individuals whose value systems became increasingly oriented towards financial values from age 18 to age 30, tended to have a corresponding increase in ill-being. In a second study, Kasser and colleagues replicated this pattern of results, following college seniors for two years into post-college life and showing that increased importance placed on financial values over this period was related to decreased psychological need satisfaction and well-being. Finally, in a third study conducted in Iceland with over 500 community adults after the economic recession, decreased prioritization of materialistic values over a 6 month period was related to increased well-being, while increased prioritization of materialistic values was related to a corresponding decrease in well-being (Kasser et al., 2014).

Sheldon and Kasser (2001) investigated developmental changes in personal strivings and values across the lifespan, in a cross-sectional sample of adults between the ages of 17 and 82. Testing Eriksonian hypotheses, they found that age had a curvilinear relationship with intrinsic value prioritization, such that those older than 60 years old had significantly lower scores for intrinsic values prioritization than the middle aged individuals. Age was also significantly positively related to generativity strivings, marginally positively related to ego-integrity strivings, unrelated to intimacy strivings, and significantly negatively related to identity strivings. In another study, students Sheldon (2005) found that a sample of students followed from freshman to senior year

became significantly more intrinsic and less extrinsic in their values prioritization, and that this transition in values was associated with increases in psychological well-being (PWB) over time.

### **Bridging Erikson with SDT driven investigations on life values**

Although Erikson's theory of stage development is compatible with SDT's approach to investigating life values, empirical research has only begun to bridge these two theories (e.g., Sheldon & Kasser, 2001). Erikson implicated a search for values in his writing on the identity stage, proposing that both conflict and resolution of this stage arise from a personal "search...for...social values which guide identity" (1959, p.94). Furthermore, Erikson warned against prioritizing external markers of success, stating that "a special danger ensues from the idea [that] you are what you can buy" (p.94). Erikson viewed the antidote to this fallacy as lying in "a system of education that transmits values and goals which determinedly aspire beyond mere 'functioning' and 'making the grade'".

In the present study, we aim to test theory driven hypotheses merging SDT and Eriksonian theory, and hope to extend contemporary research in the domains of psychosocial stage development and life values. In order to investigate the relationship between a change in values and psychosocial stage resolution, we followed a young adult sample across the academic year, from September to April, measuring intrinsic values, extrinsic values, identity resolution, intimacy resolution, and both subjective and psychological well-being (SWB & PWB).

Regarding specific hypotheses, first, we predicted that we would replicate previous findings (e.g. Kasser et al., 2014) that an increase in intrinsic values prioritization across the academic year would be positively associated with well-being

(both SWB and PWB) in April, controlling for initial well-being. Secondly, we predicted that an increase in intrinsic values prioritization over time would be associated with identity and intimacy resolution in April. Thirdly, and most central to the present investigation, we predicted that identity and intimacy resolution would mediate the relationship between an increase in intrinsic values prioritization over the course of the year and well-being at the end of the year, controlling for baseline well-being.

## **Method**

### **Participants and procedure**

Two hundred and thirty six (76% female) students at universities in Montreal were recruited for a study on personality factors and goal striving in September 2011. All participants were fluent in English, and between the ages of 17 and 29, with a mean age of 20.2 years old. Students were informed that study participation entailed the completion of an online questionnaire in September, and a second questionnaire at the end of the school year in April. All measures were administered at both these times. Once students consented to participate and demonstrated understanding of the procedure, a research assistant distributed an online survey, using the online platform Qualtrics. A second questionnaire was distributed to participants in April, which 196 of the initial participants (83%) fully completed. In a series of independent samples T-tests for comparing means between the students who completed the final measures in April, and the 39 students who did not, there were no significant differences in baseline SWB, prioritization of intrinsic values, identity and intimacy resolution. All analyses are restricted to the 196 students who completed both surveys. Participants received course credit or monetary

compensation for their time, once upon completion of the initial survey in September and then again after the follow-up survey in April.

## **Measures**

### ***Aspiration Index***

In order to measure intrinsic and extrinsic values, a shortened version of the Aspiration Index (AI; Kasser & Ryan, 1996) was administered. On the AI, participants are asked to rate the personal importance of twelve long-term life aspirations on a 7-point scale, from *not at all important* to *very important*. For example, two sample items for intrinsic aspirations were “to work for the betterment of society” and “to have committed, intimate relationships, while two sample items for extrinsic aspirations were “to have your name appear frequently in the media” and “to be financially successful”. At baseline, the Cronbach’s alpha for the items measuring importance placed on intrinsic values was 0.70, while the Cronbach’s alpha for the items measuring importance placed on extrinsic values was 0.83. In line with the methodology of previous research (Sheldon & Kasser, 2001; 2008), we calculated an index of relative prioritization of intrinsic to extrinsic values at each time point (T1 and T2) by subtracting each participants’ mean rating for extrinsic values from their mean rating of intrinsic values. With this index calculated separately for T1 and T2, we then calculated the change in prioritization of values from September to April by subtracting the T1 relative index from the T2 relative index.

### ***Subjective Well-Being Index***

To account for both cognitive and affective components, subjective well-being was operationalized as the combination of three distinct components: life satisfaction,



positive affect, and negative affect (Diener 1984; 2000). The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) was used to measure subjective life satisfaction. The SWLS consists of five statements, such as “The conditions of my life are excellent”, which participants rate on a 7-point scale from *strongly disagree* to *strongly agree*. Positive and negative affect was measured using Diener and Emmon’s Mood Report (1984), a 9-item measure comprised of four words describing positive emotional states, such as “calm” and “joyful”, and five words describing negative emotional states, such as “frustrated” and “depressed”. Each word is rated by participants on a 7-point scale to indicate the extent to which they feel that way over the past two weeks, with 1 being *slightly or not at all*, and 7 being *extremely*. Baseline Cronbach’s alpha was .87 for SWLS, .87 for positive affect, and .79 for negative affect. A mean score of well-being at each time point was obtained by taking the mean scores of positive affect, reversed negative affect, and life satisfaction.

#### *Psychological Well-being*

In order to assess psychological well-being (PWB), we employed the 18-item version of Ryff and Keyes (1995) scales of psychological well-being, based on a eudaimonic conceptualization of well-being. The measure consists of six subscales: purpose in life, positive relations with others, autonomy, environmental mastery, self-acceptance, and personal growth. Participants rated each statement on a 7-point scale, from *strongly disagree* to *strongly agree*. A mean PWB score across the six subscales was computed at both time points. Baseline Cronbach’s alpha was .73 across the 18 items.

### *Erikson identity and intimacy resolution*

In order to assess resolution of identity and intimacy, we administered two subscales of the Erikson Psychosocial Stage Inventory (EPSI; Rosenthal, Gurney, & Moore, 1981), one designed to measure identity resolution and the other designed to measure intimacy resolution. Each subscale consists of 12 statements rated on a 7-point scale, from *strongly disagree* to *strongly agree*. For example, two statements from the intimacy subscale are “I care deeply for others” and “being alone with other people makes me feel uncomfortable” (*r*), while a statement from the identity subscale is “the important things in life are clear to me”. The Cronbach’s alpha for the items related to identity resolution was 0.85, while it was 0.83 for the items measuring intimacy resolution at baseline.

## **Results**

### **Preliminary results**

Means, standard deviations, and correlations between the variables of interest can be found in Table 1. As can be seen in Table 1, both SWB and PWB in April were significantly related to SWB in September, PWB in September, prioritization of intrinsic values in September, prioritization of intrinsic values in April, change in prioritization of intrinsic values from September to April, change in identity resolution in April, intimacy resolution in April. Due to the high correlation between identity and intimacy resolution ( $r=.64, p<0.01$ ), in subsequent analyses when looking at the differential outcomes of the two scales, the other scale is controlled for.

In order to test out first hypothesis, that a change in intrinsic values prioritization between September and April would predict SWB in April, we performed a hierarchical

regression analysis. With SWB at T2 as the dependent variable, we entered SWB at T1 into the first block, and change in intrinsic value prioritization in the second block. Entering baseline SWB in the first block enabled us to use the change in values prioritization score to predict residual change in the dependent variable SWB. At the first step, SWB at T1 was a significant predictor of SWB at T2 ( $\beta=.65$ ,  $t=10.0$ ,  $p<0.001$ ), explaining 58% of the variance in later SWB,  $F(1, 195) = 100.1$ ). At the second step, change score in intrinsic values prioritization from T1 to T2 was significantly related to SWB at T2 ( $\beta=.13$ ,  $t=2.20$ ,  $p<0.05$ ) and predicted an additional 2% in the variance of SWB at T2. Next, we repeated the hierarchical regression, but examined the psychological well-being as the dependent variable, rather than SWB. At the first step, psychological well-being at T1 was significantly related to psychological well-being at T2 ( $\beta=.72$ ,  $t=15.8$ ,  $p<0.001$ ). At the second step, change in intrinsic values prioritization from T1 to T2 was significantly positively associated with PWB at T2 ( $\beta=.21$ ,  $t=4.53$ ,  $p<0.001$ ), predicting an additional 4% in the variance in PWB.

In order to test our second hypothesis, that a change in intrinsic values prioritization over time would predict a change in identity and intimacy stage resolution, we performed two hierarchical linear regressions, regressing identity and then intimacy resolution at T2 on stage resolution at T1 and change in intrinsic values prioritization. In the regression for identity resolution, identity resolution in September ( $\beta=.65$ ,  $t=10.34$ ,  $p<0.001$ ) and intimacy resolution in September ( $\beta=.12$ ,  $t=1.98$ ,  $p= 0.05$ ) were both significant predictors of identity resolution in April at the first step, and change in intrinsic values prioritization was a significant predictor of identity resolution at the second step ( $\beta=.26$ ,  $t=3.50$ ,  $p<0.001$ ), explaining an additional 3% of the variance in

identity stage resolution in April,  $F(3, 195)=84.49$ . In the regression for intimacy resolution, intimacy resolution at T1 ( $\beta=.73, t=12.61, p<0.001$ ) was a significant predictor of intimacy resolution at T2, while identity resolution at T1 was unrelated ( $\beta=.01, t=1.5, ns$ ). At the second step, change in intrinsic values prioritization was a significant predictor of intimacy resolution in April ( $\beta=.13, t=3.04, p<0.01$ ), explaining an additional 2% of the variance  $F(3, 195)=109.90$ .

### **Mediation analyses**

In order to examine whether the association between change in prioritization of intrinsic values from September to April and well-being in April was mediated by increased resolution of Eriksonian stages of identity and intimacy (Hypothesis #3), we employed Preacher and Hayes' (2008) *Indirect* macro for assessing mediation and indirect effects. This method uses bootstrapping re-sampling ( $k=1000$  in the present study) to estimate 95% confidence intervals of the indirect effects. We ran two separate analyses, one for SWB and the other for PWB. First, we tested for indirect effects on T2 SWB through both T2 identity and T2 intimacy resolution, controlling for T1 SWB, T1 identity resolution, and T1 intimacy resolution. Results revealed that change in prioritization of intrinsic values was a significant predictor of the proposed mediators identity resolution  $b = .17$  ( $SE=.05, p<.001$ ) and intimacy resolution  $b=.15$  ( $SE= .04, p<.01$ ). In turn, there was a significant direct effect of identity resolution on SWB  $b=.36$  ( $SE=.08, p<.001$ ), but no direct effect of intimacy resolution on SWB  $b=.08$  ( $SE=.10, ns$ ). The bootstrapping re-sampling procedure estimated the indirect effect of change in prioritization of values on SWB through later identity resolution to be  $b=.06$  ( $SE=.02$ ), with the 95% confidence intervals ranging from .02 to .12. There was no indirect effect

through intimacy resolution,  $b = .01$ ,  $CI [-.02, 0.5]$ . The direct effect of change in prioritization of intrinsic values on T2 SWB was reduced to  $b = .04$  ( $SE = .05$ , ns) when identity and intimacy resolution at T2 were entered into the models as predictors, suggesting full mediation.<sup>6</sup>

Next, we ran the mediation model with PWB instead of SWB. Controlling for stage resolution and psychological well-being at T1, change in prioritization of intrinsic values was a significant predictor of the proposed mediator identity resolution  $b = .15$  ( $SE = .05$ ,  $p < .001$ ) and intimacy resolution  $b = .14$  ( $SE = .04$ ,  $p < .001$ ). There was a significant direct effect of both identity resolution  $b = .38$  ( $SE = .05$ ,  $p < .001$ ) and intimacy resolution  $b = .16$  ( $SE = .05$ ,  $p < 0.01$ ) on psychological well-being at T2. The bootstrapping re-sampling procedure estimated the indirect effect of change in prioritization of intrinsic values through identity resolution on psychological well-being at T2 to be  $b = .08$  ( $SE = 0.03$ ),  $CI [.04, 0.15]$ . The indirect effect of change of prioritization of values through intimacy resolution on psychological well-being at T2 was  $b = 0.03$  ( $SE = .01$ ),  $CI [.01, .07]$ . The total effect of change in prioritization of intrinsic values on psychological well-being at T2 was significant  $b = .22$  ( $SE = .05$ ,  $p < .001$ ). The direct effect of change in prioritization of intrinsic values on T2 PWB was reduced to  $b = .11$  ( $SE = .04$ ,  $p < 0.01$ ) when identity and intimacy resolution at T2 were entered into the models as predictors, suggesting partial mediation. Overall, these results support our hypothesis (3) that stage resolution over the academic year mediates the relationship between a change in prioritization of intrinsic values and well-being in April.

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<sup>6</sup> Supplemental analyses examining the model with change in each of the three intrinsic values individually revealed a similar pattern of results, except for aspirations for meaningful relationships. The direct effect of change in aspirations for meaningful relationships on SWB at T2 was not significant.

## Discussion

We found support for our initial hypothesis, that an increase in prioritization of intrinsic, relative to extrinsic, values would be positively associated with increases in well-being (both hedonic and eudaimonic) over the school year. In our sample, individuals who became more oriented towards values of community contribution, close relationships, and self-growth (as opposed to values of image, wealth, and fame) over the academic year, also tended to be more satisfied with their life and psychologically healthy. This replicates the findings of a series of longitudinal studies by Kasser and colleagues (2014). Second, we found an association between increased relative prioritization of intrinsic values from September to April, and both identity and intimacy resolution in April, controlling for baseline stage resolution. This supported our second hypothesis that change towards intrinsic values prioritization across the year amongst the college student sample would predict increased psychosocial development of the identity and intimacy stages.

Finally, mediation analyses supported our hypothesis that stage resolution mediated the relationship between value prioritization and well-being. Indeed, the relationship between change in value prioritization and end-of-year SWB was reduced to zero once identity and intimacy resolution were entered into the model. Interestingly, for SWB, only identity resolution, but not intimacy resolution was a significant mediator, while both identity and intimacy resolution were significant mediators of PWB. Perhaps the results of this mediation model would have been different if we followed a group of adults in their early thirties, with intimacy influencing SWB as much or more than identity resolution. Intimacy resolution is theoretically expected to follow identity

resolution, and may not be as important for this sample's age group (mean 20 years old), particularly as most North American university students do not find life partners until after university (e.g., Arnett, 2000). In the present study, it appears that identity resolution is especially crucial for university students SWB, while both identity and intimacy resolution are important for more eudaimonic conceptualizations of well-being, as evidenced by the results for PWB.

It is important to consider the dark side of values change. While we have framed the results of our analyses in terms of change towards prioritization of intrinsic values leading to positive changes in psychosocial stage resolution and well-being in our sample, the nature of this association also allows for the interpretation that an increase in prioritization of extrinsic values, relative to intrinsic, may lead to decreases in psychosocial stage resolution and well-being over the academic year. The association between decreased prioritization of intrinsic values over time and decreases in SWB and PWB replicates the recent studies of Kasser et al. (2014). In Kasser et al.'s investigation, not only did change towards extrinsic value prioritization lead to decreased SWB, but increased symptoms of mental illness (study 1).

There are certain limitations of the present study, which future research should aim to correct. First, we relied on self-report measures to serve as the independent and dependent variables. Our measures of identity and intimacy resolution, two self-report scales from the EPSI (Rosenthal, Gurney, & Moore, 1981), could have been supplemented by informant reports or a behavioural measure at both time points, in order to increase the external validity. Second, as the study was correlational in nature, causality in the relationship between value change, stage resolution, and change in SWB

cannot be inferred. It is possible that an alternate model is responsible for the associations found in the data, for example, greater resolution of identity and intimacy stages may be driving a change in values. Unfortunately, we would need more time points of assessment to determine directionality of the association, and are unable to perform such analyses with the data. Third, the results of the present investigation carve a logical path towards a future experimental investigation, to determine the effects of manipulating students' values orientations on both temporary and long-term changes in identity and intimacy resolution. Lekes et al. (2012) designed an intervention in which participants randomized to the experimental group were prompted to learn about and identify their own values, and complete an open-ended writing reflection on their most important intrinsic values. In the follow-up one month later, participants in the experimental group reported both increased prioritization of intrinsic values and well-being. The protocol from Lekes et al. could be employed to investigate psychosocial stage resolution as a possible mediator in an experimental study.

Overall, the present study offers a novel contribution to the SDT research on life values and well-being, by incorporating the rich developmental theory of Erikson and evaluating the compatibility of psychosocial stage change with value change. We found support for Erikson's mid-20<sup>th</sup> century ideas, which implicated an important role for values in psychosocial development. In our study, we discovered that increased prioritization of intrinsic values across the academic year was associated with a change in both SWB and PWB, and that this association was mediated by increased psychosocial resolution across the year.



In contemporary North American society, extrinsic values are increasingly given more space in the public domain, with more “advertising clutter” encountered every day (Rumbo, 2002), along with outlets for celebrity obsession (from reality television to celebrity gossip blogs, available on demand at any hour of the day). At the societal level, this study extends the accumulating literature that relative focus on intrinsic values may serve youth well, promoting adaptive functioning and well-being, while focus on extrinsic values may indirectly harm, stunting psychosocial growth and decreasing well-being. Perhaps we should give more credence to Erikson’s warning on the dangers of a move towards more materialistic values in North American society (1959), when considering the potential merit and consequences of selling public space for advertisements promoting consumerism.

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## Tables and Figures Article 1

**Table 1**

Means, standard deviations, and correlations of study variables

	<i>N</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. T1 prioritization of intrinsic values	196	2.22	1.52	-							
2. T2 prioritization of intrinsic values	196	2.21	1.59	.81**	-						
3. Change in prioritization of intrinsic values, from T1 to T2	196	-.01	.97	.22**	.34**	-					
4. T2 Erikson Identity Stage Resolution Score	196	4.78	.95	.16*	.31**	.25**	-				
5. T2 Erikson Intimacy Stage Resolution Score	196	5.01	.93	.26**	.38**	.20**	.64**	-			
6. T1 SWB	196	4.93	.86	.25**	.28**	.11	.42**	.40**	-		
7. T2 SWB	196	4.65	.95	.18*	.29**	.19**	.55**	.41**	.58**	-	
8. T1 Psychological Well-being	196	5.38	.65	.34**	.45**	.18**	.66**	.57**	.64**	.50**	-
9. T2 Psychological Well-being	196	5.21	.78	.29**	.50**	.33**	.78**	.62**	.52**	.60**	.76**

\* $p < 0.05$

\*\* $p < 0.01$

Figure 1.

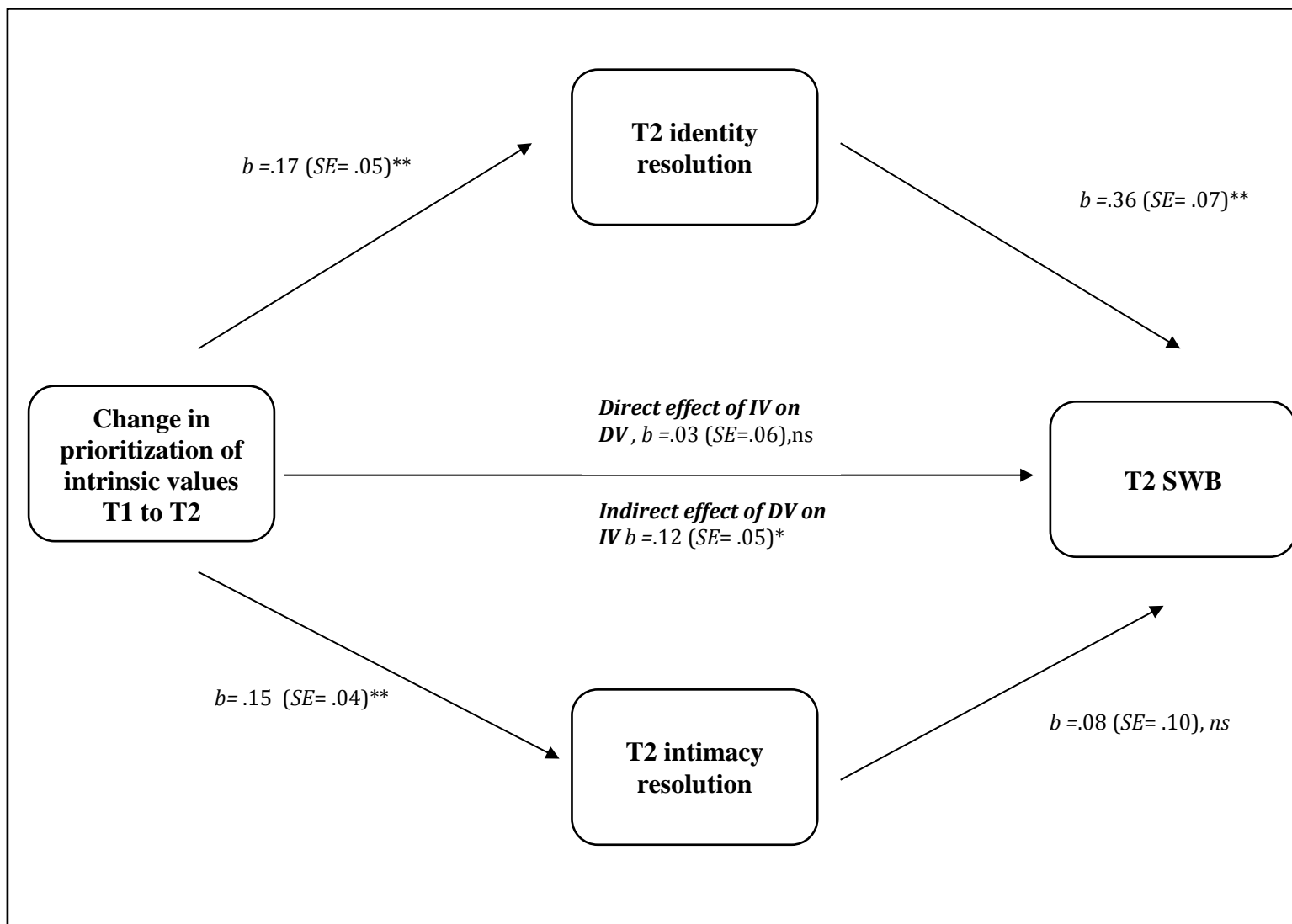
\* $p < 0.05$ \*\* $p < 0.01$ 

Figure 1. Controlling for baseline SWB, identity resolution, and intimacy resolution, the association between change in intrinsic values prioritization and T2 SWB is mediated by identity resolution.



## Bridge to Article 2

Article 1 examined the influence of *change* in values on well-being, as well as the role of Eriksonian psychosocial development in this process in a longitudinal study on university students. We found that as students increased prioritization of intrinsic relative to extrinsic aspirations over the academic year, they tended to experience increased subjective well-being and psychological well-being. Furthermore, this change was mediated by increased resolution of the psychosocial stages of identity and intimacy development. Article 2 also approaches the consequences of values on outcomes (related to affect and self-regulation) prospectively, using longitudinal design. However, instead of focusing on intrinsic relative to extrinsic life aspirations exclusively at the level of the person, Article 2 also considers the unique differences in aspirational strivings at the level of the goal. Thus, in Article 2, I consider the role of *between person* and *between goal* differences in intrinsic aspirations relative to extrinsic aspirations in goal striving and affect. Using a multilevel modeling (MLM) approach I am able to consider the following novel questions: 1) Do between person differences in life aspirations predict differences in the types of personal goals one chooses to pursue? 2) Are goals high in intrinsic aspirational content more conducive to making progress on than less intrinsic goals? 3) Do people experience more feelings of vitality making progress on goals that are more intrinsic in aspirational content?

**Article 2**

The Humble Path to Progress: Goal-Specific Aspirational Content Predicts Goal  
Progress and Goal Vitality<sup>7</sup>

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<sup>7</sup> Hope, N., Milyavskaya, M., Holding, A., & Koestner, R., (Manuscript in review). The humble path to progress: Goal-specific intrinsic aspirational content predicts goal progress and goal vitality.

The Humble Path to Progress: Goal-Specific Aspirational Content Predicts Goal  
Progress and Goal Vitality

Abstract

While previous research has demonstrated that striving for personal goals connected to intrinsic aspirations benefits psychological well-being, the relation between aspirational content and goal progress has remained unexamined. Using a multilevel modeling (MLM) approach in two longitudinal studies, we examined the relationship between life aspirations at the level of the person and the level of the goal, differentiating the ability of aspirations at both levels to predict later goal progress. We found that students made significantly more progress on (and were more likely to attain) their goals that were more intrinsic in aspirational content. These effects were goal-specific rather than person-driven. Study 2 replicated the findings of study 1 and also revealed an interaction between intrinsic aspirational content and progress in predicting goal-related affect. Specifically, we found that making progress on a goal that was more intrinsic in content led to greater feelings of vitality for that goal, while making progress on a less intrinsic goal did not. These findings highlight the benefits of setting goals connected to intrinsic aspirations (even for generally extrinsically-oriented individuals) and the value of shifting towards MLM approaches for research on goal pursuit.

Fate, which foresaw  
 How frivolous a baby man would be-  
 By what distractions he would be possess'd,  
 How he would pour himself in every strife,  
 And well-nigh change his own identity-  
 That it might keep from his capricious play  
 His genuine self, and force him to obey  
 Even in his own despite his being's law,  
 Bade through the deep recesses of our breast  
 The unregarded river of our life  
 Pursue with indiscernible flow its way;  
 And that we should not see  
 The buried stream, and seem to be  
 Eddying at large in blind uncertainty,  
 Though driving on with it eternally.

-Excerpt from Matthew Arnold's *The Buried Life* (1852):

In his 1852 poem “The Buried Life”, Arnold meditated on the consequences of living life dictated by society’s pressures, without regard for one’s inherent growth tendencies (“the buried stream”). He compels the reader to consider their own natural growth tendencies, and how these tendencies may be “buried” by strictly following normative paths, which he condemns as potentially “frivolous” and “distract[ing]”. Arnold’s concerns remain relevant today. From the late 1970s (sampled 1976-78) to the mid-2000s (sampled 2005-07), the materialistic demands of American high-school seniors rose significantly (Twenge & Kasser, 2013). Contemporary motivational researchers continue to questions such as: “are some life values more psychologically beneficial than others?” (e.g., Kasser, T., Ryan, R.M., Couchman, C.E., & Sheldon, K.M.,

2004) and “what makes for a good goal?” (e.g., Locke & Latham, 2002; Sheldon, Kasser, & Deci, 1996; Sheldon, Ryan, Deci & Kasser, 2004). In the present paper, we consider the possibility that people are more amenable to making progress on personal goals that are intrinsic in aspirational content, and thus connected to inherent growth tendencies than on goals that are extrinsic in aspirational content.

### **Life Aspirations**

For as long as humans have acquired possessions and traded currency, philosophers, spiritual leaders, and other independent thinkers have warned against privileging acquisition of wealth over personal growth. In the domain of psychology, 20<sup>th</sup> century humanists including Abraham Maslow, Carl Rogers, and Erich Fromm advised against acting solely in pursuit of external reward, or approval from others (Kasser, 2002). For example in his book *To Have or to Be?*, Fromm (1976) cautioned that the promise of material wealth brought about by the industrial revolution was an illusory path that would lead away from psychological well-being and adaptive functioning. Despite rich theory, these great thinkers did not empirically evaluate their claims that orientation towards material accumulation leads to ill-being.

More recently, an empirical framework has been applied to investigate the impact of values orientation on goal pursuit and well-being. Self-determination theory researchers Kasser and Ryan (1993; 1996) have contrasted two different types of life values: intrinsic and extrinsic aspirations. While intrinsic aspirations, such as community contribution, forming meaningful relationships, and self-growth, are thought to directly satisfy basic psychological needs, extrinsic aspirations, such as fame, affluence, and alluring physical image, rely on external reward, approval, or envy of others, and thwart basic psychological need satisfaction.

The pursuit of extrinsic aspirations is not inherently malignant; however, the relative prioritization of extrinsic aspirations over intrinsic aspirations appears to have a negative effect on functioning. Prioritization of extrinsic aspirations has been related to decreased global adjustment, decreased positive affect, increased symptoms of depression and anxiety, and decreased self-actualization, while prioritization of intrinsic aspirations has been related to increased well-being, and decreased symptoms of mental illness (Kasser & Ryan 1993; 1996). The beneficial consequences of prioritization of intrinsic aspirations have been replicated transnationally, including in China (Lekes, Gingras, Philippe, Koestner, & Fang, 2010), Germany (Schmuck, Kasser, & Ryan, 2000), Russia (Ryan, Chirkov, Little, Sheldon, Timoshina, & Deci, 1999), and Korea (Kim, Kasser, & Lee, 2003). Recently, Kasser and colleagues (2014) demonstrated in two longitudinal studies, spanning 12 years and 2 years, that increased prioritization of intrinsic relative to financial success aspirations is related to enhanced well-being over time (study 1 and study 2), and that this change in well-being is mediated by greater satisfaction of basic psychological needs (study 2).

Research on intrinsic aspirations has also lead to revealing findings about normative changes in values in certain cultural, institutional, and environmental milieus. For example, in most community and university samples in North America individuals have been found to prioritize intrinsic aspirations over extrinsic aspirations, and become more intrinsic in their orientation with age (Sheldon, 2005; Sheldon & Kasser, 2001). However, Sheldon and Krieger (2004) found that first year law students shifted from prioritization of intrinsic aspirations to extrinsic aspirations over the year. Furthermore, as law students' oriented towards extrinsic aspirations, their well-being plunged.

Sheldon and MacGregor (2000) reviewed similarities between orientation to extrinsic values and other personality variables, such as external perceived locus of causality (Ryan & Connell, 1989), which might also represent deviation from “natural interests or developmental trends within themselves” (p. 286). However, Sheldon and MacGregor noted that “[orientation to extrinsic aspirations] is different from these constructs in that it refers to enduring personal values, which may lead individuals to adopt motives and goals which are chronically unsatisfying of their psychological needs”. This leads to an important question: how do life aspirations influence the kinds of personal goals we set? Time-framed personal goals represent a lower tier on the motivational hierarchy, and may be influenced by higher order life aspirations.

### **Aspirational Content and Personal Goal Pursuit**

Personal goals specify desired end states that one hopes to achieve, and can add structure and meaning to individuals’ lives (Cantor, Norem, Langston, Zirkel, Fleeson, & Cook-Flannagan, 1991). Goals behaviourally and cognitively direct attention away from distracting, irrelevant activities towards goal-related activities (Locke & Latham, 2002). Many personal goals are time-framed. For example, students may set goals for the new semester, just as many working adults set goals for the new year. Making progress on one’s goals has been tied to a number of beneficial life outcomes, including increased well-being (Diener, Suh, Lucas, and Smith, 1999) and job satisfaction (Judge, Bono, Erez & Locke, 2005). In a meta-analysis, Koestner, Lekes, Powers, and Chicoine (2002) found a highly significant positive overall effect for the relationship between goal progress and well-being. People tend to experience significantly greater positive affect, and significantly less negative affect over time as they make progress on their goals.

Sheldon and colleagues have expanded research on intrinsic and extrinsic life aspirations to personal goal pursuit (Sheldon & Kasser, 1995; Sheldon & Kasser, 1998; Sheldon, Ryan, Deci, & Kasser, 2004). Sheldon and Kasser (1995) proposed goal coherence, the extent to which the content of personal goals connects to intrinsic aspirations, as a possible indicator of personality integration. They found that the extent to which personal goals were connected to intrinsic aspirations was positively related to daily well-being (vitality, positive affect, and meaningfulness of activities), as well as trait measures of self-actualization, openness, cognitive empathy, and self-esteem. In contrast, the extent to which personal goals were connected to extrinsic aspirations was only related to the daily number of “distracting” activities reported by participants.

In two longitudinal studies, Sheldon et al., 2004 asked university students to generate several personal goals that they would be pursuing over the semester (study 2) or over their first post-graduation year (study 3) and rate the extent to which each goal connected to three intrinsic (meaningful relationships, personal growth, and societal contribution) and three extrinsic possible futures (financial success, popularity and fame, attractive physical image). From these ratings, a relative extrinsic content score was computed for each goal, and a person-level score was computed across the goals. In both studies, person-level analyses revealed that mean relative extrinsic content across goals was associated with decreased well-being over time.

Although the results of Sheldon et al.’s (2004) longitudinal investigations (studies 2 and 3) are compelling, one disadvantage is that these studies used between-person analyses in order to investigate outcomes related to pursuing goals intrinsic relative to extrinsic in content. In other words, relative intrinsic content was aggregated across all



personal goals (eight goals for study 2; five goals for study 3) for each person, rendering it an individual differences measure rather than a goal-specific measure. While this approach can address the question: “what are the outcomes associated with individual differences in general tendencies to select and pursue goals that are more intrinsic vs. extrinsic in nature?”, it does not address the question “what are the goal-specific outcomes of a person pursuing a goal that is relatively more intrinsic than their other goals vs. more extrinsic than their other goals?” Furthermore, while there is evidence for a relationship between aspirational content across goals and psychological well-being, the relationship between aspirational content and goal progress has not been explored.

Researchers have suggested that goals offering natural incentives may be less effortful to pursue. Cantor and Blanton (1996) contrast the “strategic pursuit” of personal goals (a process which requires significant cognitive resources for effortful planning and commitment) with the “spontaneous pursuit” of natural incentives (a process which does not require effortful pursuit and is more automatic). The authors elaborate on how goals with natural incentives may aid goal pursuit as incremental progress is made and rewarded with these incentives:

In the [spontaneous] system, motivation and action are triggered by environmental cues. These cues signal the possibility of experiencing specific natural incentives (e.g., being in meaningful relationships, having an impact on others), which are biologically based motivations, grounded in each individual’s need for procreation and survival ... Natural incentives are inherently pleasing and associated with specific pleasant affective experiences. Thus, cues that signal the possibility of experiencing natural incentives cause an emotional charge or

“energization”. This anticipatory state causes people to seek the “kick” or “natural high” that accompanies natural incentives. (p. 339)

We propose that goals connected to intrinsic aspirations will be more likely to meet success as these goals offer natural incentives. Arguably, goals that are intrinsic in content (such as building close relationships and giving back to others) are more aligned with natural incentives compared to goals that are extrinsic in content (e.g., appearing more attractive; accumulating material goods). Many extrinsic goals are only rewarding because of the symbolic or cognitive meaning placed on the extrinsic attainment. For example, money is only rewarding in that shelter, clothing, status symbols, toys, people, and persuasion can be bought with it. It would have no value to its proprietor if that proprietor was the sole inhabitant on a deserted island. In contrast, striving for close relationships may lead to immediate benefits of greater social connectedness and intimate exchanges, which are valuable benefits even when removed from the context of modern North American society.

### *Vitality*

Subjective vitality is the auspicious feeling that one is alive and energized, and is proposed to reflect organismic wellness (Ryan & Frederick, 1997). Subjective vitality is not simply a reflection of caloric energy available to metabolize, but rather a *feeling* that energy is available, with both psychological and physical factors influencing self-reports of vitality (Thayer, 1996; Ryan & Frederick, 1997). Subjective vitality has been found to be related to self-report measures of self-actualization, physical self-efficacy, physical health and well-being, while it has been negatively correlated with anxiety and depression (Ryan & Frederick, 1997). Additionally, activities in which one feels

volitionally engaged and agentic catalyze feelings of vitality, while those in which one feels under the control of the environment decrease subjective vitality. For example, in a group of patients engaging in a treatment program for morbid obesity, those who were high in internal reasons (contrasted with external reasons) for following treatment guidelines reported significantly greater subjective vitality, compared to those who were low in internal reasons (Ryan & Frederick, 1997).

Just as people can feel alive and vital when pursuing certain activities, we expected that vitality could also be experienced in the context of goal pursuit. For example, it is likely that a person would feel more vital when pursuing a goal that helps them spend more time with their spouse than when pursuing a goal that helps them earn more money. Specifically, we expected that goals connected to relatively more intrinsic aspirations would lead people to feel more vital. Additionally, research has demonstrated the affective and well-being benefits of accomplishing personal goals (e.g. Koestner et al., 2002), and it may be the case that progress on *certain* goals leads to especially beneficial affective consequences. We expect greater vitality when goals related to intrinsic aspirations (but not those related to extrinsic aspirations) are attained. We examine goal vitality in study 2.

### **The Present Study**

The present investigation had several aims, addressed in two longitudinal studies as participants pursued personal goals over four months. The first aim was to evaluate the relationship between life aspirations and goal-specific aspirational content. As proposed by Sheldon and MacGregor (2000) personality differences in prioritization of intrinsic vs. extrinsic aspirations may be meaningfully related to the kinds of personal goals people

adopt. The second aim was to evaluate the impact of pursuing intrinsic goals on goal progress. The third aim was to evaluate whether goal content (relative intrinsic aspirational content) and goal progress interact to predict feelings of goal-specific vitality. We expected that participants would have greater feelings of vitality (feeling energized and enlivened by the goal) on goals for which they make progress, but only when they are intrinsic in content. In study one, we address the first two aims, while in study 2 we examine whether the results replicate, and evaluate the third aim.

We chose a multilevel (MLM) approach to data analyses with goals nested within participants, in order to compare the outcomes of specific goals within participants, and test our hypotheses at the level of the goal. This approach carries a significant advantage, as it allows us to get closer to differences in self-regulatory outcomes of real goals, rather than aggregating predictors and outcomes across goals (e.g., averaging goal progress across four goals for each participant), which can render goal-specific measures into individual differences, confounding goal measures with participants' general response tendencies and personalities. Furthermore, we are able to consider the nested nature of goals within people with a MLM approach, rather than neglecting individual differences in the participants' pursuing the goals by disaggregating goals from people. Previous research has found substantial variability (70-90%) in goal-related variables including goal motivation and goal progress within a person (Milyavskaya & Inzlicht, 2014; Numi, Salmela-Aro, & Aunola, 2009), suggesting that the appropriate level of analysis is the goal, rather than the person (Milyavskaya, 2014).

### **Hypotheses**

Our first hypothesis concerned the relationship between life aspirations (motives at a higher, more abstract level), and goal content of time-framed personal goals (motives at a lower, more concrete level). We hypothesized that prioritization of intrinsic life aspirations over extrinsic life aspirations would be positively associated with pursuing time-framed goals related to intrinsic vs. extrinsic ends (e.g., setting goals such as “calling my grandparents more” vs. “gaining a lucrative, high paying summer job”) as represented by the self-reported aspirational content of each personal goal.

Our second hypothesis concerned the relationship between the aspirational content of a goal and progress on that goal. We expected students to make more progress on goals with higher intrinsic goal content, relative to their other goals. In examining this hypothesis, we looked at goal-level differences in aspirational content, because person-level differences in aspirational content and goal pursuit can be confounded by extraneous personality factors, and individual differences in self-report ratings of aspirational content (e.g., tendency to give high ratings for all goals). In contrast, within-person (goal-specific) analyses pit an individual’s goals against each other on the basis of aspirational content, controlling for the individual’s mean ratings across goals.

Third, we hypothesized that there would not be an interaction between life aspirations and aspirational content of individual goals in predicting goal progress or well-being. In other words, if someone highly prioritized extrinsic life aspirations (such as being wealthy), we did not expect them to benefit more from pursuing a relatively more extrinsic personal goal (compared to the other goals they were pursuing) than someone else who did not prioritize extrinsic life aspirations. Rather, we expected that

everyone would benefit from pursuing goals that were relatively more intrinsic in aspirational content, regardless of their over-arching life aspirations.

Finally, we hypothesized that participants would feel more energized when pursuing goals that were intrinsic in aspirational content. Furthermore, we expected that greater goal progress overtime would be positively related to feelings of vitality for that goal, but only for goals that were intrinsic in content. In other words, we hypothesized an interaction between goal progress and goal content in predicting goal vitality, such that making progress on extrinsic goals would not lead to greater goal vitality, while making progress on intrinsic goals would.

## **Study 1** **Materials and Methods**

### **Participants and procedure**

Two hundred and forty students (72% female; Mean age =20.2) fluent in English and attending one of several universities in a major city in Canada were recruited for a study on personal goals at the start of the academic year. The study was approved by the university's Research Ethics Board, and all participants provided written consent prior to participation. Participation entailed completion of one survey in September (T1), and a second survey in December (T2). Participants were financially compensated for their participation in person, following the initial survey and the final survey. Two hundred and twelve (88%) participants completed the December survey; independent samples t-tests revealed no difference between the means for students who completed the final survey in December and those who did not, therefore all participants who fully completed the first survey in September were used in the analyses.

### **Measures**

### *Aspiration Index*

In order to measure individual differences in life aspirations, each participant completed an adapted 12-item version of the Aspiration Index (AI; Kasser & Ryan, 1996) in September (T1). Participants are asked to rate the personal importance of 12 long-term life aspirations on a 7-point scale, from *not at all important* to *very important*. For example, two sample items for intrinsic aspirations were “to work for the betterment of society” and “to have committed, intimate relationships, while two sample items for extrinsic aspirations were “to have your name appear frequently in the media” and “to be financially successful”. At baseline, the Cronbach’s alpha for the items assessing intrinsic aspirations was 0.70, while the Cronbach’s alpha for the items assessing extrinsic aspirations was 0.83. As suggested by Sheldon and Kasser (2001; 2008), we calculated a life aspirations index (of relative prioritization of intrinsic to extrinsic aspirations) for each participant, by subtracting mean extrinsic aspirations ratings from mean intrinsic aspirations ratings for each participant.

### *Personal goals*

In the initial survey, goals were defined for participants as “projects that people think about, carry out, and sometimes (though not always) complete or succeed at”, and participants were asked to list three time-framed goals of their own that they intended to pursue during the semester. Goals listed by participants included: “Achieve a 3.8 GPA or higher”, “Lose two kilograms by December”, and “Find out more about [and] become better friends with my roommates”.

### *Aspirational content of each goal*

Following the procedure from Sheldon and colleagues (Sheldon and Kasser, 1995; Sheldon & Kasser, 1998), participants were asked to rate the extent that each of their goals might help bring about six possible futures on a 7-point scale from *not at all* to *very much* (six items per goal). Three futures were related to intrinsic aspirations (meaningful relationships; personal growth; and societal contribution), while three futures were related to extrinsic aspirations (financial success; popularity and fame; attractive physical image). An aspirational content score (relative intrinsic aspirational content) was computed for each goal by subtracting the mean of the ratings for the three extrinsic possible futures for that goal from the mean ratings for the three intrinsic possible futures.

#### *Goal progress*

In December (T2), participants were reminded of the personal goals they had listed in the initial survey and reported on their goal progress and goal standing for each goal. Goal progress was assessed using one item: “How far have you progressed towards achieving this goal?”, with responses made on a sliding scale from 0 (made no progress) to 100% (accomplished their goal). To assess goal standing, participants responded to the question “Where do you currently stand on this goal?” with four options: “1 = I abandoned this goal”, “2 = I failed at this goal”, “3 = I made some progress but did not fully achieve this goal”, or “4 = I achieved this goal”.

## **Results**

### **Calculation and Data Analytic Strategy**

Since each participant reported three goals and our hypotheses focused on the relationship between goal-specific aspirational goal content and later goal outcomes, analyses were conducted using two-level multilevel modeling (MLM) with goals nested



within person. We used SPSS 20 for all MLM analyses, except for one logistic regression which was run with HLM2, as SPSS does not allow multi-level logistic regressions. Goal-specific variables (aspirational content of each goal and goal progress) represented level-1, the level of the individual goal, while trait variables (life aspirations, gender) represented level-2, the level of the person. In order to examine the effects of the aspirational content of each goal relative to a person's other goals, we person-mean centered goal aspirational content (Nezlak, 2012) so that the value of each goal reflected the difference between that goal and the person's average across goals. In all analyses we also included gender as a predictor. Regarding the issue of power in this study, 50 or more level-2 units (participants) is adequate for unbiased estimation of level-1 and level-2 variables in MLM (Mass & Hox, 2005). Therefore, our sample was more than adequate for meeting the requirements for power.

### **Preliminary analyses**

Before beginning analyses, we wanted to examine the external validity of students' ratings of the aspirational content of their goals. Is there a meaningful relationship between the types of goals students set (e.g., academic goals vs. relational/social goals) and the ratings of aspirational content students tend to give these goals? While the measure of aspirational content has been used in past research (Kasser and Ryan 1998; Sheldon et al., 2004), there is no explicit evidence for the external validity of this measure. In order to examine this question, all goals were coded into nominal categories by two independent raters based on the content of the goals<sup>8</sup>. The coding scheme was designed to capture and evaluate the most frequent types of goals set

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<sup>8</sup> Interrater reliability was calculated between the two raters for participants' first goal (n=240), producing a Cohen's Kappa of 0.85,  $p < 0.001$ , indicating good reliability between the raters.

by university students. Previous research using the same paradigm has found that academic, relational, and health goals were quite common amongst students (Koestner et al., 2002). We added self-growth, community, financial, and job-related goals as four additional categories because they seemed relatively frequent and appropriate for evaluating on the basis of aspirational content (degree that the goal is tied to intrinsic relative to extrinsic life aspirations). We removed a category for physical attractiveness-related goals and popularity-related goals, as there were not enough goals that could be coded in either category ( $n < 5$ ).

Figure 1 presents the means by type of goal (as coded by the raters). We conducted pairwise comparisons between the seven types of goals to see whether different types of goals significantly differed in aspirational content. These comparisons were conducted in a multilevel structure with goals nested in person. We expected that relational goals, self-growth goals, and community contribution goals would not significantly differ from each other, but that they would be significantly higher in mean intrinsic aspirational content (based on participants' ratings) compared to financial goals, job-related goals, and academic goals. We did not have any hypotheses for health/physical activity goals. Consistent with our hypotheses, pairwise comparisons (see figure 1) indicated that the intrinsic aspirational content of relational goals, community contribution goals, and self-growth goals was significantly higher than financial goals, job-related goals, and health/physical activity goals. We also found that the intrinsic aspirational content of relational and community contribution goals was significantly higher than that of self-growth goals.

### Primary results

First, using MLM, we estimated the proportion of within-person variance in (intrinsic relative to extrinsic) aspirational content of goals relative to the proportion of between-person variance. The intra-class correlation coefficient (ICC) indicated that 24% of the total variance in goal aspirational content was accounted for by differences at the between-person level, while 76% of the total variance was accounted for by differences at the within-person level (between goals).

Next, we examined our hypothesis that over-arching life aspirations would predict aspirational content of time-framed personal goals. We entered gender and life aspirations index as fixed predictors in the random intercept two-level mixed model with goal aspirational content as the dependent variable in the model. Gender was marginally related to goal-specific intrinsic aspirational content, such that women tended to pursue goals more intrinsic in aspirational content than men (unstandardized  $b=.28$ ,  $SE=.16$ ,  $t = 1.77$ ,  $p<0.1$ , 95%  $CI= -.03, .59$ ). Life aspirations index was significantly positively related to relative intrinsic aspirational content of goals ( $b=.37$ ,  $SE=.04$ ,  $t = 8.40$ ,  $p<0.001$ , 95%  $CI=.28, .46$ ).

#### 3.3.2 Progress and Achievement

Secondly, we tested our hypothesis that within-person variation in intrinsic aspirational content of goals would be positively related to goal progress. With goal progress in December (T2) as the dependent variable, we entered person-centered intrinsic aspirational content of the goal as a fixed predictor. Goal aspirational content was significantly positively related to goal progress on that goal ( $b = 1.94$ ,  $SE = .91$ ,  $t =$

2.06,  $p < 0.05$ , 95%  $CI = .09, 3.78$ )<sup>9</sup>. Gender was unrelated to goal progress. We also tested for random effects of goal aspirational content, however, the fixed model was a superior fit.

We conducted a second two-level mixed model analysis in order to contrast the relationship between goal-specific aspirational content with over-arching life aspirations on goal progress. We entered life aspirations index, and person-centered intrinsic aspirational goal content at T1 as fixed predictors, with reported goal progress in December as the dependent variable. The results for goal aspirational content were unchanged from the previous analysis, while life aspirations were unrelated to goal progress ( $b = .39$ ,  $SE = .83$ ,  $t = .48$ ,  $ns$ , 95%  $CI = -1.23, 2.02$ ). We also ran another analysis where we added the interaction term between life aspirations and goal aspirational content in predicting goal progress to the above model. The interaction was non-significant ( $b = -.15$ ,  $SE = .66$ ,  $t = -.22$ ,  $ns$ , 95%  $CI = -1.44, 1.14$ ).

Next, we conducted a two-level mixed model logistic regression analysis in order to examine the effects of goal aspirational content and over-arching life aspirations on the likelihood of actually achieving one's goals. We recoded the goal standing variable into a binary variable with responses of "achieved" coded as 1, indicating that the goal was achieved, and all other responses (abandoned, failed, or some progress made) coded as 0, indicating that the goal was not achieved. We entered life aspirations index, person-centered intrinsic aspirational goal content, and gender as fixed predictors, with reported goal achievement (0 or 1) in December as the binary dependent variable. Aspirational content of each goal in September was significantly related to achievement of the goal in

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<sup>9</sup> The ICC for goal progress was .06, indicating that 6% of the variance in goal progress was accounted for by between person differences in how much progress people make on their goals on average, while 94% was goal specific.

December ( $b=.19$ ,  $SE=.07$ ,  $t=2.66$ ,  $p<0.01$ ,  $OR=1.22$ ,  $95\% CI=1.05, 1.41$ ), while the life aspirations index was marginally related to goal achievement ( $b=.4$ ,  $SE=.06$ ,  $t=.58$ ,  $p<0.1$ ,  $OR=1.04$ ,  $95\% CI=.92, 1.18$ ). Gender was unrelated to goal achievement.

### **Brief Discussion**

In study 1, we found that the majority of variance (76%) in relative intrinsic aspirational content of goals was accounted for by differences at the within-person level (between goals), rather than differences at the between-person level. This highlights the importance of considering the intrinsic content of individual goals within participants, as opposed to aggregating across goals in order to investigate outcomes related to relative intrinsic aspirational content. It seems that the intrinsic aspirational content of a goal is largely tied to the unique goal, rather than a product of stable individual differences.

However, there was still a significant relationship between participants' overarching life values, and the content of the personal goals they chose to pursue. MLM analyses revealed people's general life aspirations (relative prioritization of intrinsic to extrinsic aspirations) was significantly positively related to the aspirational content of goals, such that people who generally endorsed the importance of intrinsic over extrinsic aspirations were more likely to set goals which would help them attain intrinsic outcomes. Women were also somewhat more likely to pursue personal goals that were endorsed as high in relative intrinsic aspirational content.

We found preliminary support for our central hypothesis that participants would make more progress when pursuing specific goals that were higher in intrinsic aspirational content, compared to their other goals. In our study, participants tended to make more progress on their goals that were high in intrinsic aspirational content.

Participants were also more likely to report having achieved these goals at the end of the semester. Entered in the same analytic models, participants' over-arching life aspirations were unrelated to goal progress, and only marginally related to likelihood of goal achievement. The self-regulatory benefits (in terms of goal progress) of intrinsic aspirations seem to be more powerful at the level of the goal (e.g., how intrinsic the particular goal is), rather than at the level of personality (e.g., how much the person values intrinsic aspirations overall). As suggested by Cantor and Blanton (1996), certain goals may aid self-regulation through the "natural incentives" that accompany pursuing the goal. It may be that pursuing goals high in intrinsic aspirational content results in greater goal progress, because such goals are more connected to "natural incentives" in daily life.

We found no support for an interaction between over-arching life aspirations and goal-specific aspirational in predicting goal progress. While one may argue that goal pursuit would be enhanced when a person's goals are matched to his or her values (e.g. someone who really values financial success over close relationships may put in more effort and make more progress on a goal related to procuring money), our results showed that pursuing intrinsic goals led to increased progress for everyone, regardless of their life aspirations.

## **Study 2**

Study 2 had two primary aims. The first aim was to replicate the findings of study in a second longitudinal study on an independent sample. The second aim was to elaborate on these findings by probing for affective consequences of pursuing goals that are intrinsic in content at the level of the goal. Specifically, we wondered whether participants might feel more alive and energized ("vital") about pursuing goals that are

relatively higher in intrinsic aspirational content. We thought that this would likely be the case because such intrinsic goals connect with natural incentives (Cantor & Blanton, 1996), and so may feel more natural and energizing to pursue. Related to this, we expected that only the progress made on goals higher on intrinsic content would result in increased feelings of vitality, while making progress on extrinsic goals would not lead people to experience increased vitality.

## Method

### Participants and Procedure

One hundred and fifty nine (72% female,  $M$  age = 18;  $SD=1.04$ ) freshmen students attending a major university in Canada were recruited for a large study on personal goals from university classes, classified ads, and residences. As part of the larger study<sup>10</sup>, participants completed the initial survey in a laboratory (T1 in September), as well as two 15-20 minute follow-up online surveys six weeks apart, in October and December (T2, T3). One hundred participants completed all three assessments and were used in the analyses below. Independent samples t-tests revealed no difference on demographic variables and study variables (e.g., aspiration index) for participants who were retained for the full study, and those who were not.

### Materials

#### *Personal goals*

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<sup>10</sup> The study also included two weeks of ecological momentary assessment on participants' smartphones, as well as the collection of numerous other measures not considered in the present manuscript. Other research with this sample has examined the experience of fear of missing out (Milyavskaya, Saffran, Hope & Koestner, 2014), trait self-compassion (Hope, Koestner & Milyavskaya, 2014), and perfectionism (Harvey et al., 2014). Two other manuscripts look at goals, one focusing on the effects of momentary temptation, self-control, and ego-depletion on goal progress (Milyavskaya & Inzlicht, 2014), and the other at goal motivation, desire and self-control (Milyavskaya, Inzlicht, Hope & Koestner, In Press). There is no overlap between the content and the hypotheses of the present study with the aforementioned studies.

Using the same methodology as study one, participants were asked to identify four goals they would be pursuing that semester. Participants were reminded of these four goals at later follow-ups. Aspirational content of each goal was measured at T1 using the same items as in study 1.

### *Goal Progress*

For each goal, participants rated three statements related to goal progress on a 7-point Likert scale, from *strongly disagree* to *strongly agree*. The three statements were “I have made a lot of progress toward this goal,” “I feel like I am on track with my goal plan,” and “I feel like I have achieved this goal.” A mean score was computed for progress on each of the four goals at each time point. Goal progress was measured at T2 and T3.

### *Goal vitality*

Participants were asked to rate the item “this goal makes me feel alive and vital” for each goal on a 1 to 7 likert scale from *strongly disagree* to *strongly agree*. Goal vitality was measured at T2.

## **Study 2 Results**

### **Life aspirations and goal content**

As with study 1, multilevel (MLM) analyses were conducted using SPSS 20. First, we examined the relationship between life aspirations (a level-2, person level variable) and goal content of the four time-framed goals (a level-1, goal-specific variable). We entered gender and life aspirations index as fixed predictors in the random intercept two-level mixed model with goal aspirational content as the dependant variable in the model. Women were marginally more likely to pursue goals which they rated as



related to intrinsic aspirational content ( $b = .29$ ,  $SE = .17$ ,  $t = 1.69$ ,  $p < 0.1$ ,  $95\% CI = -.05, .63$ ). Life aspirations index was significantly positively related to goal aspirational content ( $b = .27$ ,  $SE = .05$ ,  $t = 5.14$ ,  $p < 0.001$ ,  $95\% CI = .18, .38$ ).

### **Life aspirations, goal content, and goal progress**

Next, we examined the impact of the aspirational content of specific goals (compared to overall life aspirations) in predicting goal progress over the semester. As in study 1, we person-centered (e.g., Nezlak, 2012) the aspirational content of each goal around each participant's mean across their four goals in order to examine whether people more progress on goals that are more intrinsic (compared to the person's own baseline).

We conducted a two-level mixed model analysis with goal progress in October (T2)<sup>11</sup> as the dependent variable and both goal aspirational content (level-1) and life aspirations (level-2) measured at T1 as the predictors. Goal aspirational content was significantly related to goal progress ( $b = .14$ ,  $SE = .05$ ,  $t = 3.05$ ,  $p < 0.01$ ,  $95\% CI = .05, .23$ ), while life aspirations index of each person was unrelated to goal progress ( $b = .01$ ,  $SE = .05$ ,  $t = .26$ ,  $ns$ ,  $95\% CI = -.09, .12$ ). Gender was unrelated to goal progress.

We repeated the model, this time examining goal progress in December (T3) as the dependent variable. Both goal aspirational content ( $b = .24$ ,  $SE = .05$ ,  $t = 4.48$ ,  $p < 0.001$ ,  $95\% CI = .14, .35$ ), and life aspirations index were positively related to goal progress reported in December ( $b = .13$ ,  $SE = .06$ ,  $t = 2.15$ ,  $p < 0.05$ ,  $95\% CI = .01, .24$ ). There was no interaction between aspirational content of each goal and over-all life aspirations in predicting goal progress at T2 or T3.

### **Goal vitality**

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<sup>11</sup> The ICC for goal progress in October was .13, while it was .08 in December.

As we were interested in effects of life aspirations (level-2, person level variable) and goal aspirational content (level-1, within-person, between goals variable) on feelings towards that goal, we examined a two-level mixed model with goal vitality<sup>12</sup> (“this goal makes me feel alive and vital”) measured at T2 as the dependent variable, and life aspirations and person-centered relative intrinsic aspirational content of each goal as the predictors. Aspirational content of each goal ( $b=.25$ ,  $SE=.05$ ,  $t=4.99$ ,  $p<0.001$ , 95%  $CI=.15$ ,  $.34$ ), and life aspirations index of each person ( $b = .12$ ,  $SE = .06$ ,  $t = 2.15$ ,  $p<0.05$ , 95%  $CI=.00$ ,  $.24$ ) were both significantly positively related to feelings of vitality towards that goal at T2. Gender was unrelated to goal vitality.

### **Interaction between goal content and goal progress**

As mentioned in the hypotheses, we also wondered whether the aspirational content of each goal and progress on that goal might interact to predict feelings of vitality for that goal. Specifically, we expected that greater goal progress would be related to greater feelings of vitality towards that goal, but only for goals that are more intrinsic in aspirational content (e.g., more related to meaningful relationships, self-growth, and community contribution, than financial success, popularity, and beauty). To test the hypothesis that aspirational content would moderate the relationship between goal progress and vitality, we ran a two-level model (goals nested within-person) with goal vitality as the dependent variable, and person-centered goal progress (at T2), goal aspirational content (at T1), and the interaction term between goal progress and aspirational goal content as the predictors.

There were two main effects, both goal aspirational content ( $b=.23$ ,  $SE=.05$ ,  $t=4.69$ ,  $p<0.001$ , 95%  $CI=.14$ ,  $.33$ ) and goal progress ( $b=.16$ ,  $SE=.05$ ,  $t=2.96$ ,  $p<0.01$ ,

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<sup>12</sup> The ICC for goal vitality was .18.

95%  $CI=.05, .27$ ) were significantly positively related to reported vitality for that goal at T2. The interaction between goal aspirational content and goal progress was also significant ( $b = .10, SE=.04, t = 2.23, p<0.05, 95\% CI=.01, .18$ ).

Examining the interaction (see figure 2) it can be observed that for goals that are more intrinsic in aspirational content (relative to the person's mean aspirational content across the four goals), making greater goal progress on that goal after six weeks of goal pursuit (T2) is related to greater feelings of vitality towards that goal, compared to making low levels of goal progress. However, for goals that are less intrinsic in aspirational content, there is no relationship between making goal progress and feeling more vital towards that goal. For relatively more extrinsic goals, it does not seem to matter whether goal progress is made, with lower levels of vitality reported whether progress is made or not.

Simple slopes analyses revealed that the slope between goal progress and vitality for that goal is not significant at the low (-1SD) level of goal aspirational content ( $b=.064, t=.871, ns$ ), but is significant at the mean ( $b=.162, t=2.949, p<0.01$ ) and high (+1SD;  $b=.259, t=3.819, p<0.001$ ) levels of goal aspirational content.

### **Brief Discussion**

As with study 1, we found support for our hypothesis that people would make more progress on goals that were more intrinsic in content compared to their other goals both six-weeks and 12-weeks after setting those goals. We also found that having generally more intrinsic life aspirations was related to making more progress on goals 12-weeks later, but not six-weeks later. Once again, we also found that general life aspirations were significantly positively related to the aspirational content of individual

personal goals. That is, participants who tended to prioritize intrinsic aspirations over extrinsic aspirations were also more likely to identify time-framed personal goals that they were pursuing as being more related to intrinsic aspirations than people who prioritized extrinsic aspirations. We also found that women were marginally more likely to pursue personal goals connected to intrinsic aspirations than men.

Unique to study 2, we found that participants felt more vital when pursuing those goals that were higher in aspirational content compared to their other goals, and also that people who generally held more intrinsic life aspirations felt more vital during goal pursuit. Moreover, we found a significant interaction between goal aspirational content and goal progress in predicting goal vitality. It seems that making progress on a goal is only related to greater vitality towards that goal when the goal is in the medium to high range for intrinsic aspirational content, compared to their other goals. In contrast, making progress on a goal low in aspirational content (i.e., a more extrinsic goal) did not lead to greater vitality.

### **General Discussion Article 2**

In two longitudinal studies, we found support for our hypothesis that participants would make more progress on specific goals that were higher in intrinsic aspirational content, relative to their other goals. That is, specific goals that were tied to personal growth, close relationships, and community contribution were more likely to be achieved than those tied to fame, wealth, and physical image. In study 2, we also found that goal aspirational content and individual differences in life aspirations were positively related to later feelings of goal vitality. These findings contribute support to the growing body of evidence that goal content matters (Ryan, Sheldon, Deci, & Kasser, 1996) and that selecting intrinsic personal goals confers significant benefits, including greater well-being

over time (Sheldon & Kasser, 1998; Sheldon et al., 2004; Niemiec, Ryan, & Deci, 2009; Sheldon & Kasser, 1995). However, these two studies are unique in investigating self-regulatory outcomes of pursuing intrinsic goals at the level of the specific goal (i.e., goal progress and goal vitality), rather than person-level outcomes.

Extending previous research on the well-being outcomes of goal pursuit (e.g. Diener, Suh, Lucas, & Smith, 1999; Koestner, Lekes, Powers, & Chicoine, 2002), we found that goal-specific feelings of vitality were higher only when progress was made on goals more intrinsic in aspirational content. It appears that making progress on goals low in intrinsic relative to extrinsic aspirational content (e.g., more related to financial outcomes than building close relationships outcomes) is not anymore beneficial for fostering feelings of being enlivened and energized by the goal, then not making progress on such goals. As suggested by Cantor and Blanton (1996) it is possible that certain motivational pursuits, such as pursuing intimacy in close relationships, confer greater “natural reinforcements” along the way, compared to other motivational pursuits, such as pursuing wealth.<sup>13</sup>

One advantage of this investigation was the use of a multi-level modelling (MLM) approach for data analyses. By nesting goals within participants, we were able to examine both within-person, goal-specific aspirational content (does a person tend to make more progress in pursuing their goals that are more intrinsic compared to their goals that are less intrinsic in content?) and between person differences in life aspirations (do people who value intrinsic over extrinsic life values make more progress on their goals?) in predicting goal progress. A within-person (between goals) analytic approach is

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<sup>13</sup> Of course, it is likely that making progress on extrinsic goals does lead to certain outcomes, despite not relating to goal vitality, such as instrumental help toward other goals.

especially important in investigating factors related to goal progress, especially given the large proportion of variance in progress that is goal-specific (in our two studies, 94% and 92% of the variance). Without such an approach, findings can only be generalized to individual differences, and cannot get to the heart of the question “are all goals created equal?” (e.g., as asked by Ryan, Sheldon, Kasser, & Deci, 1996).

We found that regardless of overall differences in values (orientation to intrinsic relative to extrinsic life aspirations); participants tended to make more progress on their goals that were higher in relative intrinsic aspirational content, compared to their other goals. An optimistic interpretation of this is that perhaps even those who pursue extremely extrinsic life aspirations are not doomed to fail at their personal goals, since they too are more likely to make more progress at those goals that are relatively more intrinsic (compared to their other goals). While we found a relation between participants’ over-arching life aspirations and the aspirational content of specific goals, the majority of variance in goal content was not accounted for by individual differences in personality or goal-setting tendencies, and was instead tied to the unique nature of the specific goal. It seems that even individuals who are generally extrinsic in their life aspirations do set some intrinsic goals. Furthermore, these more extrinsic individuals tend to experience more success on their more intrinsic goals, compared to their more extrinsic goals. Perhaps pursuing a goal high in intrinsic aspirational content could redeem even the most extrinsically oriented individual from self-regulatory failure.

We also found in both studies that women were somewhat more likely to pursue goals connected to intrinsic aspirations than men. Reviewing the literature on aspirations, we have seen a gender difference emerge in some other studies. For example, Kasser and

Ryan (1996; study 2) found that female participants rated the importance of intrinsic aspirations as well as likelihood of attaining these aspirations as higher than male participants, while males rated the importance of extrinsic aspirations higher than female participants. We suggest that these differences may be due to differences in socialization of males as compared to females, with women being oriented towards “responsible nurturance” more than men (Hegelson, 1994). Socialization towards communal behaviour and responsible nurturance may make intrinsic aspirations and goals more salient for women. A quantitative review is merited to see if there is a gender difference in men and women’s life aspirations and tendency to pursue intrinsic vs. extrinsic goals, as well as explore the mechanisms of these relationships.

Why did participants make more progress on their more intrinsic goals? Future research is warranted to examine these potential mechanisms of the effects to better understand the reasons for greater successful attainment of intrinsic goals. This will require assessing barriers to goal attainment, as well as possible mediators to goal success, such as goal difficulty, support from the environment for that goal, and need satisfaction when pursuing goal-relevant activities.

Although we did not investigate this question in the present studies, we can think of three possibilities. First, as we have suggested, goals that are relatively more intrinsic in content may be more amenable to natural reinforcements from the environment (e.g., pursuing greater intimacy with a best friend may lead to immediate feelings of connectedness and social support), enabling greater goal engagement and goal progress. A second possibility, not irreconcilable with the first, is that intrinsic goals may be more compatible with inherent growth tendencies, also called organismic functioning (Deci &

Ryan, 2000; Sheldon & Kasser, 1995). The premise of organismic functioning “...assumes a fundamental human trajectory toward vitality, integration, and health... so long as the necessary and appropriate nutriments are attainable” (Deci & Ryan, 2000, p. 229). Sheldon and Kasser (1995) propose that the content of individuals’ goals is an important source of organismic functioning. Sheldon and Kasser also identify that Rogers (1964) considered “that values and life goals can be more or less organismically based”, and considered materialistic goals to be in the latter category (p.532). Following Rogers’s suggestion that materialistic goals and values are not as organismically based as other aims, Sheldon and Kasser propose that goals connected to intrinsic aspirations (e.g., related to close relationships, community contribution, or personal growth) are more aligned with inherent growth tendencies. Extending this interpretation to the findings of the present study, the alignment of certain goals with inherent growth tendencies may have propelled participants to experience greater self-regulatory success on these goals, compared to their other goals. Supporting this interpretation, we found that participants in the present study experienced greater vitality for these goals, which has been proposed as an indicator of organismic wellness (Ryan and Frederick, 1997). A final possibility is that extrinsic goals may be harder to fulfill or satiate (e.g., it is difficult to amass substantial sums of money in several months), leading to reports of lower goal progress.

In summary, we have found evidence that all goal contents are not created equally (e.g., Ryan, Sheldon, Kasser & Deci, 1996), and that certain goals may contribute to better self-regulatory outcomes than others. It seems that participants’ more intrinsic goals were significantly more likely to meet success (greater goal progress), while the same participants’ more extrinsic goals were more likely to be thwarted (less goal



progress). Furthermore, participants experienced more vitality for relatively intrinsic goals, and this level of vitality increased as they made progress on intrinsic goals, while it plateaued regardless of goal progress for their relatively extrinsic goals.

“It is preoccupation with possessions, more than anything else, that prevents men from living freely and nobly.”

–Bertrand Russell (2009), p. 153

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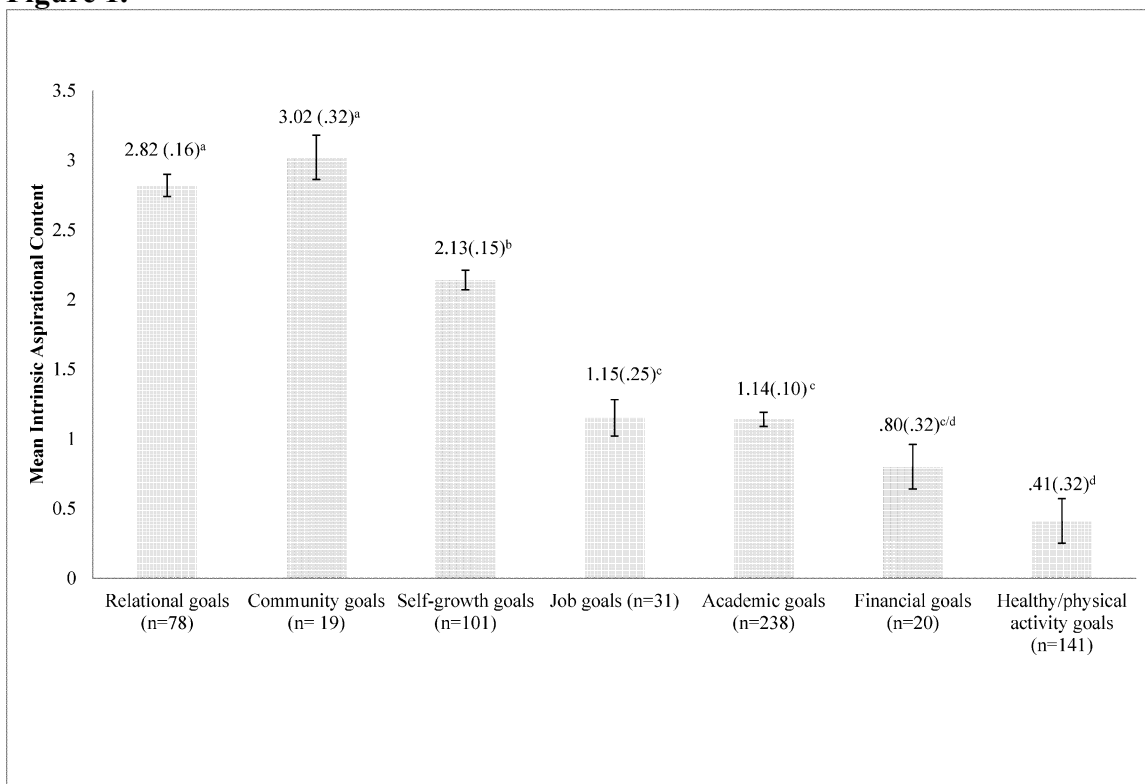
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### Tables and Figures Article 2

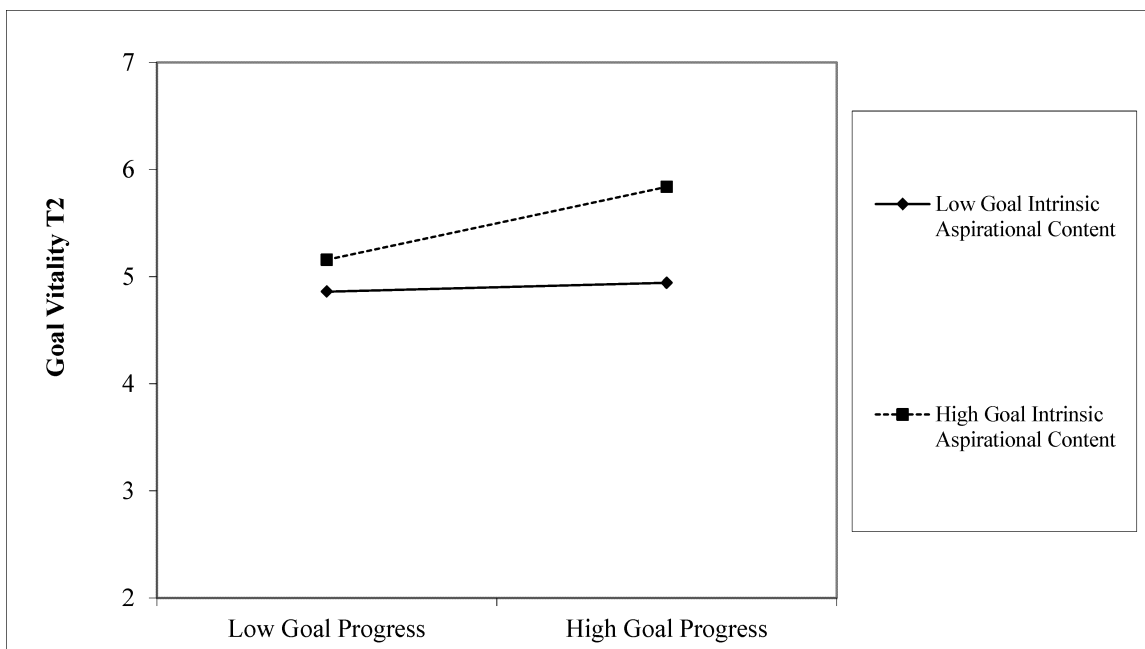
<i>Variable</i>	<i>M</i>	<i>SD</i>	<i>N</i>
Life Aspirations Index (T1)	2.24	1.52	240
Mean intrinsic aspirational content across three goals (T1)	4.65	1.04	240
Mean extrinsic aspirational content across three goals (T1)	3.21	1.21	240
Mean relative intrinsic aspirational content across three goals (T1)	1.45	1.19	240
Mean goal progress across three goals (T2)	62.4	18	212
Mean goal standing across three goals (T2)	1.98	.48	212



<i>Variable</i>	<i>M</i>	<i>SD</i>	<i>N</i>
Life Aspirations Index (T1)	2.01	1.45	159
Mean intrinsic aspirational content across four goals (T1)	5.08	.88	159
Mean extrinsic aspirational content across four goals (T1)	3.18	1.1	159
Mean relative intrinsic aspirational content across four goals (T1)	1.89	1.05	159
Mean goal progress across four goals (T2)	4.11	.87	122
Mean goal vitality across four goals (T2)	3.25	1.01	122
Mean goal progress across four goals (T3)	4.26	.86	100

**Figure 1.**

*Figure 1.* Mean intrinsic aspirational content by type of time-framed personal goal. Different subscripts (a, b, c, and d) indicate that the means of intrinsic aspirational content of the different types of goals are significantly different from each other,  $p < 0.05$ .

**Figure 2.**

*Figure 2.* Interaction between intrinsic aspirational content of specific goal and goal progress to predict feelings of vitality. Making progress on more intrinsic goals was associated with greater feelings of vitality, while making progress on less intrinsic goals was not.

### Bridge to Article 3

In Article 2, I examined the impact of *between person* and *between goal* differences in intrinsic relative to extrinsic values priorities on goal striving and vitality. First, we found evidence for overall life aspirations influencing the types of goals that one chooses to pursue. Secondly, we found beneficial consequences of pursuing more intrinsic personal goals. Individuals made more progress on their more intrinsic personal goals, and experienced greater vitality as they attained such goals, compared to less intrinsic goals.

In Article 3, the final of this thesis, I turn attention away from focusing on the consequences of prioritizing intrinsic relative to extrinsic aspirations, to consider antecedents of young adults' values priorities. In Article 3, I introduce a novel investigation with multiple informant design and prospective data collection. This investigation was designed in order to assess the influence of both friends' and family members' personality and values on young adults values priorities. Do college students' friends or family exert a greater influence on their values? Does the personality of people an individual is interpersonally close with influence their values priorities? These are two of the primary questions explored in this manuscript. This study represents the first empirical attempt to compare family members and friends relative influence on college students' values.

In line with Articles 1 and 2, we also consider how students' aspirations predict changes in well-being and self-regulation (specifically self-concordance: autonomous relative to controlled motivation for goal). In Article 1, we examined how *changes* in

aspirations from the beginning to the end of the year predicted changes in well-being (both eudaimonic and hedonic) and psychosocial development. However, we did not examine how baseline intrinsic relative to extrinsic aspirations predict future changes in well-being. The analyses presented in Article 3 are important for understanding whether people who prioritize intrinsic relative to extrinsic aspirations more highly become more satisfied with life, higher in positive affect, and lower in negative affect over time compared to less intrinsic, more extrinsic peers. In order to demonstrate that prioritization of intrinsic relative to extrinsic aspirations is predictive of greater well-being, it is important to rule out that individuals who are higher in well-being simply tend to be more likely to endorse intrinsic aspirations. Establishing directionality of the relationship between aspirations and life values requires longitudinal design, with subjective well-being assessed at multiple time points. Such a design allows for examination of whether prioritizing intrinsic aspirations relative to extrinsic aspirations truly confers greater well-being, or if the two variables (relative prioritization of intrinsic aspirations and subjective well-being) are only associated cross-sectionally (e.g., due to a more positive mood influencing self-report of values).

Article 3 also improves upon the methodology of Articles 1 and 2 by collecting data from multiple informants. Such a design allows for better examination of how external factors, outside of the self, influence one's prioritization of intrinsic relative to extrinsic aspirations. While one way of evaluating how close others' influence one's values priorities could be to ask participants' to report on the characteristics (e.g., aspirations and personality) of their family member and friends in addition to completing self-report measures of their own aspirations, this data can be biased by participant

characteristics (e.g., conscientiousness, mood, values) and may not represent an accurate report of their friends' and family members' characteristics. Therefore, we overcame this limitation by directly obtaining self-report evaluations from a friend and family member of participants included in the study.

**Article 3**Keeping Up with the Joneses: Friends' Perfectionism and Students' Orientation Towards Extrinsic Aspirations<sup>14</sup>

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<sup>14</sup> Hope, N., Holding, A., Harvey, B., & Koestner, R., (In Press). Keeping up with the Joneses: Friends' perfectionism and students' orientation towards extrinsic aspirations. *Journal of Personality*.

### Abstract

**Objective:** Kasser and Ryan (1993; 1996) have contrasted two types of life values: intrinsic aspirations, which include community contribution, building close relationships, and self-growth, and extrinsic aspirations, which include fame, wealth, and physical beauty. Prioritization of extrinsic relative to intrinsic aspirations has been related cross-sectionally to decreased well-being (Kasser, 2002 for review). However, the influence of close others in the etiology of young adults' prioritization of extrinsic relative to intrinsic aspirations, and the prospective effects of aspirations on well-being, are not well understood.

**Method:** In a multiple informant prospective study of 341 university students (Mean Age = 19.4; 64% Caucasian; 74% female), we examined the influence of friends' and family members' perfectionism on participants' aspirations, and the outcomes of prioritization of extrinsic aspirations.

**Results:** Having friends high in other-oriented perfectionism was significantly positively related to prioritization of extrinsic over intrinsic aspirations. Furthermore, living with friends amplified the effect. Lastly, prioritization of extrinsic aspirations at T1 was related to decreased subjective well-being and self-concordance for goals three months later.

**Conclusions:** The study provides preliminary evidence for a relationship between friends' other-oriented perfectionism and students' orientation towards extrinsic aspirations, as well as negative prospective consequences of students' orientation to extrinsic aspirations.



## Keeping Up with the Joneses: Friends' Perfectionism and Students' Orientation Towards Extrinsic Aspirations

Humans are inherently social creatures (Baumeister & Leary, 1995), and our goals, attitudes, and values are intertwined with our social contexts (e.g., social contagion of goals, Arrts, Gollwitzer, & Hassin, 2004; attitudes, Newcomb, 1943; values, Kasser, Ryan, Zax, & Sameroff, 1995). In the classic Bennington College study, sociologist Theodore Newcomb (1943) assessed students' change in attitudes from their freshman year to their senior year. At the time, Bennington was an all-female college that tended to attract women from socially, politically, and economically conservative families. However, Newcomb found that over the college years, the students' attitudes tended to change from conservative to liberal, and this was mediated by their involvement in the college community. College remains an important time for growth and exploration for young adults, with exposure to new ideas, people, and ways of perceiving the world. Could exposure to certain personality types during this developmental period have an influence on young adults' values? In the present study, we investigated the relative influence of close friends' and family members' trait perfectionism on young adults' prioritization of extrinsic relative to intrinsic aspirations.

### **Intrinsic and Extrinsic Life Aspirations**

Values are defined as wanted end-states that are relatively stable over time, transcend place and time, and influence daily decision-making and behavior (Schwartz, 1994; Schwartz, 1992). Self-determination theory researchers Kasser and Ryan (1993; 1996) have juxtaposed two different types of life values: intrinsic and extrinsic aspirations. Pursuit of intrinsic aspirations is thought to directly relate to satisfaction of the basic psychological needs of autonomy, competence, and relatedness (Deci & Ryan, 2000). Intrinsic aspirations include striving for community contribution, building intimacy with others, and personal growth. In contrast, extrinsic aspirations are

contingent on external reward or approval and do not directly satisfy basic psychological needs. Extrinsic aspirations include striving for an attractive physical appearance, popularity/fame, and wealth. While strivings for wealth, beauty and fame are often idealized in American media, Kasser and Ryan (1996) found that individuals' self-reported relative importance of extrinsic over intrinsic aspirations was related to decreased self-actualization, decreased feelings of vitality, and increased physical symptoms. In contrast, relative importance of intrinsic aspirations was related to greater self-actualization and vitality, and decreased symptoms of depression. The negative relationship between prioritization of extrinsic aspirations and well-being extends across cultures, with studies in a diverse array of countries replicating this finding, including China (Auerbach, Webb, Schreck, McWinnie, Ho, Shu, & Yao, 2011), South Korea (Kim, Kasser, & Lee, 2003), Germany (Schmuck, Kasser, & Ryan, 2000), and Russia (Ryan, Chirkov, Little, Sheldon, & Timoshina, 1999).

In addition to cross-sectional evidence of a relationship between aspirations and well-being, similar trends emerge from longitudinal investigations. Three longitudinal studies have revealed that as individuals became more materialistic in their aspirations over time, their well-being tended to decrease (Kasser et al., 2014). In a recent study, researchers found that as students increased prioritization of intrinsic aspirations relative to extrinsic aspirations over the academic year, their identity resolution and well-being improved (Hope, Milyavskaya, Holding, & Koestner, 2014).

One important question that has not been fully explicated is: what factors give rise to prioritization of extrinsic aspirations? Self-determination theory considers individuals' motivation and personality to arise partly from the social contexts one inhabits, and certain contexts have been found to affect centrality of extrinsic vs. intrinsic aspirations (Deci & Ryan, 2014). For example, Sheldon and Krieger (2004) studied students in their first year of law school, and found that students' oriented away from intrinsic aspirations and towards extrinsic aspirations over the first year. Furthermore, this change in

aspirations corresponded to a decrease in subjective well-being. Kasser et al. (1995) examined the relationship between maternal environment and adolescents' aspirations, and found that the aspirations of the adolescents they studied were related to socioeconomic status, mothers' own aspirations, and mothers' trait nurturance. Adolescents who valued wealth over intrinsic aspirations tended to be from lower SES backgrounds and to have mothers who prioritized wealth and were more cold and controlling. Similarly, Williams et al. (2000) found that adolescents' prioritization of extrinsic aspirations was negatively related to their perceived autonomy support from parents. Weinstein et al. (2009) investigated the experimental effect of exposure to nature on self-reported aspirations in several studies, and found that participants reported greater importance of intrinsic aspirations after being shown natural landscapes, while they reported greater importance of extrinsic aspirations when exposed to urban scenes. These effects were mediated by need satisfaction, with participants feeling greater autonomy satisfaction and relatedness in the natural landscapes condition. One factor that may be important in the development of aspirations is the influence of friends. While the influence of parents (Williams et al., 2000; Kasser et al., 1995), socio-economic context (Kasser et al., 1995), and program of study (Sheldon & Krieger, 2004; Vansteenkiste, Duriez, Simons, & Soenens, 2006) on individuals' aspirations have been explored, the influence of friends' on the centrality of individuals' extrinsic relative to intrinsic aspirations has not been studied.

### **Close others and Life Aspirations**

In their chapter on the origins of materialistic values, Kasser, Ryan, Couchman, and Sheldon (2004) remind readers that humans are not uninvolved vessels for the culture they live in, rather, “[we] are simultaneously created by and create this culture” (p. 9). In other words, humans both consume and contribute to the values of their social context. The authors theorize that social contexts (or cultures) that exalt extrinsic aspirations arise from the collective behaviours and beliefs of individuals inhabiting those social contexts.

Extending Kasser et al.'s (2004) proposition that individuals contribute to the values of their social context, we suggest that individuals contribute to the values of others in shared social contexts, such as family members or roommates. We posit that both the values and personality traits of close others are an important contextual influence on the development and maintenance of individuals' values. However, the influence of close friends and family members' personality on individuals' values has not been given adequate consideration. In the present study, we wondered whether inhabiting a social context saturated with perfectionism could result in detrimental value priorities. Sheldon, Ryan, Deci, and Kasser (2004) suggested that pursuit of extrinsic aspirations may lead to greater social comparison with others and internalization of contingencies as worth, such as "the belief that they are worthy only if they can make the next sale or attain the next compliment" (p.447). Perhaps, this relationship is bi-directional, and being around demanding individuals with conditional regard for close others, could lead to the adoption of extrinsic aspirations, in an effort to "keep up" with these individuals.

### **Perfectionism**

Perfectionism is an individual difference that involves holding high standards for achievement and goal pursuit along with excessive criticism of one's behaviour in meeting those standards (Frost, Marten, Lahart, Rosenblate, 1990); essentially, an intolerance of imperfection. Researchers have come to the consensus that perfectionism involves a constellation of heterogeneous intraindividual and interindividual behaviours (Frost et al., 1990; Hewitt & Flett, 1991b), and requires a multidimensional approach. Of interest to the present study are two independent, although moderately correlated, forms of perfectionism: self-oriented perfectionism and other-oriented perfectionism (Hewitt & Flett, 1991a; 1991b). Self-oriented perfectionism (SOP) refers to having high standards (often unrealistically high) for oneself, value perfect performance for oneself, and strictly evaluating ones performance against these standards (Hewitt & Flett, 1991b). In contrast, other-oriented perfectionism (OOP) involves having high standards for close others,

including family, friends, and romantic partners, valuing perfect behaviour from close others, and rigorously evaluating their performance against these standards (Hewitt & Flett, 1991b).

While there has been a significant amount of research on SOP, less is known about OOP (Stoeber, 2014). Initial research found that OOP was significantly positively related to trait narcissism, entitlement, dominance, and other-blame (Hewitt & Flett, 1991b). In contrast, SOP was related to self-blame, self-importance of performance, and self-importance of goals. Both OOP and SOP were positively correlated with high personal standards and self-criticism, although the correlations were stronger for self-oriented perfectionism. In regards to psychopathology, in a college sample SOP was positively related to all nine subscales of a clinical measure of adjustment, including depression, anxiety, interpersonal sensitivity, phobias, and psychoticism, while OOP was only related to phobias and paranoia (Hewitt & Flett, 1991b). Similarly, in a sample of patients with depression, SOP was related to symptoms of depression and anxiety, while OOP was unrelated to symptoms (Hewitt & Flett, 1991a). In an independent sample of psychiatric patients, SOP was unrelated to any of the basic personality subscales of the Millon Clinical Multiaxial Inventory (MCMI; Millon, 1983), while OOP was positively related to the narcissistic, antisocial, and histrionic subscales (Hewitt & Flett, 1991b). Overall, it appears that the prototypical other-oriented perfectionist tends to be more entitled, narcissistic, and antisocial than the self-oriented perfectionist, yet less psychologically distressed.

According to Hewitt & Flett's (1991b) original conceptualization, OOP is not expected to be related to *intrapersonal* motivation, but may have *interpersonal* consequences on proximate others' motivation. In the three studies that have examined OOP in dyads, OOP has been related to negative interpersonal consequences. These studies have found romantic partners' levels of OOP to be independent from one another (Stoeber, 2012; Habke, Hewitt, & Flett, 1999), providing preliminary evidence that OOP

is not an assortative trait, but that having a partner high in OOP may be deleterious. Among pain patients and their spouses, spouses' self-reported OOP was related to decreased perceived support and relationship adjustment as reported by the patient. In a study examining sexual and relationship satisfaction, Habke et al. (1999) found that wives' OOP was related to decreased sexual satisfaction in husbands. To our knowledge, no studies have examined interpersonal consequences of OOP between peers or friends. Additionally, while Hewitt and Flett (1991b) theorized that OOP would be related to interpersonal motivation, the effects of close others' OOP on individuals' motivation has not been examined.

Recently, Stoeber (2014) addressed the gap in research on OOP. The aim of his investigation was to distinguish OOP from other forms (i.e., SOP and socially prescribed perfectionism), by controlling for shared variance between different forms of perfectionism in outcome variables. The outcome variables of interest were social goals (representing the first study of OOP and social goals), and the dark triad personality traits of narcissism, Machiavellianism, and subclinical psychopathy. Regarding social goals, Stoeber found that individuals high in OOP were significantly less interested in pursuing prosocial goals of intimacy, nurturance, and learning more about other people, while they were more interested in social achievement goals (e.g., "It is important to me that other students think I am popular") compared to individuals low in OOP. Moreover, OOP was positively related to all components of the dark triad, with unique positive associations with trait narcissism, Machiavellianism, and subclinical psychopathy. In contrast, entered into the same regression as OOP, SOP was negatively related to Machiavellianism and psychopathy. As Stoeber asserted "...other-oriented perfectionism appears to be an ambivalent form of perfectionism associated with high self-regard but low regard for others" (p. 335). Based on Stoeber's findings and theoretical suggestions from the self-determination theory literature (e.g., Sheldon et al., 2004; Sheldon et al., 2004) regarding a relationship between social comparison and orientation to extrinsic aspirations, we

expected that OOP may have an adverse effect on close others' aspirations.

### **Rationale for Present Study**

The present study was designed to evaluate the correlates and consequences of young adults' prioritization of extrinsic aspirations. Firstly, we were interested in elucidating the relationship between individuals' aspirations and close others' personality, by collecting information from other informants. Secondly, we strove to evaluate the consequences of prioritization of extrinsic aspirations on later well-being and goal pursuit, by following participants prospectively. Below, we review our hypotheses for the study.

#### **Correlates of participants' aspirations:**

Regarding close others' aspirations, we hypothesized a convergence between participants' aspirations, and their friends' and family members' aspirations. In other words, we expected participants' aspirations to be related to the aspirations of friends and family members. Previous research has found some support for convergence of aspirations between mothers' and their adolescent children (Kasser et al., 1995), however, to our knowledge, no investigations have examined the influence of friends' aspirations, let alone the influence of *both* friends' and family members' aspirations on individuals' aspirations in a single study.

As for the influence of close others' personality, we expected that close others' reports of OOP would be associated with prioritizing values related to external markers of success, because people high in OOP seem to be highly concerned with social status (e.g., value social power, Stoeber, 2014) and OOP is theorized to have interpersonal effects on motivation (Hewitt & Flett, 1991b). Therefore, we hypothesized that friends' and family members' OOP would be positively associated with participants' prioritization of extrinsic aspirations. We expected this association would occur through two pathways. In the direct pathway, we hypothesized that individuals with close family or friends high in OOP would internalize the high standards imposed by these close

others, by placing greater importance on external markers of success (e.g., extrinsic aspirations of striving for wealth, physical beauty, and popularity) relative to intrinsic aspirations.

In the indirect pathway, we expected that other-oriented perfectionistic friends and family would model prioritization of extrinsic aspirations, relative to those low in OOP, and this modelling by close friends and family would influence individuals' prioritization of extrinsic aspirations. As evidenced by Stoeber (2014), individuals high in OOP have been found to value benevolent strivings less, and value social power strivings more. Therefore, we expected individuals high in OOP to be higher in their prioritization of extrinsic relative to intrinsic aspirations, compared to individuals low in OOP. As values are influenced by the values of close others (e.g., Kasser et al., 1995), we expected individuals' prioritization of intrinsic aspirations to be correlated with friends' and family members' prioritization. Thus, we hypothesized that friends and family members high in OOP would report increased prioritization of extrinsic aspirations, and this increased prioritization of extrinsic aspirations in close others would be associated with individuals also reporting increased importance of extrinsic aspirations, regardless of the individuals' own level of perfectionism.

### **Prospective consequences of prioritization of extrinsic aspirations:**

Lastly, we expected individuals' prioritization of extrinsic over intrinsic aspirations at the start of the academic year to be related to negative outcomes for well-being and self-concordance. We expected that college students who discounted intrinsic aspirations in favor of extrinsic aspirations would experience declines in well-being and self-concordance over time.

Regarding well-being, in keeping with previous evidence we hypothesized that individuals who have higher scores on prioritization of extrinsic relative to intrinsic aspirations would experience declines in well-being over time, compared to individuals with lower scores on prioritization of extrinsic aspirations. While numerous cross-



sectional studies have demonstrated a negative relationship between prioritization of extrinsic aspirations and well-being (e.g., Kasser & Ryan, 1996; Schmuck et al. 2000, Kim et al., 2003; see Kasser 2002 for review), few studies have examined the relationship between baseline aspirations and later changes in well-being (e.g., Do more extrinsic individuals become less happy over time? Or, do less happy individuals tend to endorse more extrinsic aspirations?). Niemiec et al. (2009) studied the role of aspirations in graduating American college students' post-graduation goal attainment and mental health one year later, and found that importance of intrinsic aspirations was related to greater attainment of intrinsic aspirations one year later, which in turn was related to greater well-being<sup>15</sup>. In contrast, extrinsic attainment was related to decreased mental health. Sheldon et al., (2004) found that senior college students who tended to pursue goals higher in relative extrinsic-content experienced greater declines in well-being over the post-graduation year. We believe the negative relationship between extrinsic aspirations and future well-being warrants replication in an independent sample.

We also expected individuals' prioritization of extrinsic over intrinsic aspirations to lead to decreased self-concordance over time. Sheldon (2014) suggests that certain goals are sub-optimal for human growth and flourishing compared to other goals. Extrinsic aspirations may orient individuals towards sub-optimal personal goals that are experienced by the self as less self-determined and more externally regulated. Sheldon (2014) argues that best marker of whether someone is pursuing optimal goals, that “eman[ate] from deeper... growth-consistent parts of the person” (p. 3), is self-concordance. Self-concordance (Sheldon & Elliot, 1999) refers to the measurable difference, via self-report, between an individual's autonomous motivation (self-determined; e.g., doing something because you want to) and controlled motivation (e.g., doing something because someone else demands it, you feel you ought to, or you will get

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<sup>15</sup> Direct relationship between importance of aspirations and changes in well-being and mental health one year later were unreported.

an external reward for doing it) for their personal goals. Someone who reports high autonomous relative to controlled motivation is considered more self-concordant than someone who reports low autonomous relative to controlled motivation.

In initial investigations on goal self-concordance (Sheldon, 1995; Sheldon & Kasser, 1995), Sheldon (2014) found significant variance between individuals in self-concordance for goals; many participants reported selecting and pursuing goals for controlled reasons (e.g., because someone else wanted them to), rather than autonomous reasons (e.g., because the goal reflected their own interests, values, or preferences). Sheldon (2014) has demonstrated that goal self-concordance is associated with better fit between explicit and implicit measures of motivation, and that individuals are less likely to fail at self-concordant goals (see also Koestner, Otis, Powers, Pelletier, & Gagnon, 2008). Sheldon asserts that greater self-concordance across goals represents more integrated personality functioning, as it signifies a personal tendency to strive on the basis of volition rather than external pressure. Furthermore, self-concordance can be “enhanced by intra and interpersonal factors that promote self-insight and personal autonomy” (p.11, 2014), such as by having greater self-worth for oneself (Judge, Bono, Erez, & Locke, 2005), and autonomy support from others (Smith, Ntoumanis, & Duda, 2007; Sheldon & Watson, 2011).

We hypothesized that individuals’ prioritization of extrinsic relative to intrinsic aspirations would negatively predict goal self-concordance over time. As individuals oriented towards extrinsic aspirations are foregoing more psychologically satisfying intrinsic aspirations (Kasser, 2002 for review) for pursuit of beauty, wealth, or fame, we expected these individuals to become more “out of touch” (Sheldon, 2014, p.355) with themselves over time, as evidenced by decreased self-concordance. Specifically, we expected that individuals who have higher scores on prioritization of extrinsic relative to intrinsic aspirations would experience declines in self-concordance over time, compared

to individuals with lower scores on prioritization of extrinsic aspirations. Demonstrating the prioritization of extrinsic aspirations leads to decreased self-concordance would provide support to SDT researchers' hypothesis (Kasser & Ryan, 1993; 1996; Ryan & Deci, 2000; Niemiec, Ryan, & Deci, 2009) that extrinsic priorities lead to maladjustment and ill-being, with a novel measure. The role of aspirations in promoting integrated functioning has not been empirically assessed, and the design of the present study allows for the opportunity to measure changes in self-concordance over a three-month period.

## **Method**

### **Participants and procedure**

341 undergraduate students (74% female; Mean Age = 19.4, SD = 1.8) at a large Canadian University were recruited from classrooms and residence halls to participate in a study on daily life and personal goals. Participants' ages ranged from 17 to 29 years old (M = 19.4; SD = 1.8). Regarding the ethnic background of participants, 64% of participants endorsed their ethnicity as Caucasian, 26% Asian, 2% Black, 3% Hispanic, and 5% other. Prior to enrollment, participants were informed that participation would include responding to surveys on their goals, habits, and interests, as well as providing the contact information for a close family member and a close friend who would be asked to fill out a brief online survey (<10 minutes). In late September (T1) participants completed the initial survey on personality, aspirations, and goal pursuit. The same week, each participant's identified family member and friend were invited by email to participate in the study. 254 family members (69% female) and 236 (68% female) friends completed a brief self-report survey. Participants completed the follow-up survey (T2) ten to eleven weeks later in mid-December, at the end of the semester. 309 participants completed the T2 survey, representing a 91% retention rate. The recruited

participants (341) were financially compensated for their time, while the family members and friends were not. Furthermore, participants were not penalized for their friend and family member's decision not to participate.

### **Measures**

**Life Aspirations.** In order to measure prioritization of intrinsic relative to extrinsic aspirations, an adapted 12-item version of the Aspiration Index (AI; Kasser & Ryan, 1996) was administered. Participants rated the personal importance of aspirations for community contribution, personal growth, building close relationships, fame/popularity, wealth, and physical beauty on a 7-point scale, from *not at all important* to *very important*. For example, two sample items for intrinsic aspirations were “to work for the betterment of society” and “to have committed, intimate relationships”, while two sample items for extrinsic aspirations were “to have your name appear frequently in the media” and “to be financially successful”. As suggested by Kasser and Ryan (1993; 1996), we calculated an index of relative prioritization of extrinsic aspirations for each participant, by subtracting the mean score on items related to intrinsic aspirations from the mean score on items related to extrinsic aspirations. The AI was administered at T1.

**Self-oriented Perfectionism and Self-criticism.** Self-oriented perfectionism (SOP) was assessed using all fifteen items from the SOP subscale of the MPS (Hewitt & Flett, 1991b) (e.g., “One of my goals is to be perfect in everything I do”), while self-criticism (SC) was assessed using fifteen items from the Depressive Experiences Questionnaire (DEQ; Blatt, D’Affliti, & Quinlan, 1976) (e.g., “I have a difficult time accepting weaknesses in myself”; “If I fail to live up to expectations, I feel unworthy”). Students rated each item on a 7-point likert scale from *strongly disagree* to *strongly agree*. The Chronbach’s alpha for SOP was .78, while it was .88 for SC.

In the past, this combination of subscales from the MPS and DEQ has been used to evaluate self-criticism and self-oriented perfectionism of university students (Harvey, Milyavskaya, Saffran, Hope, Powers, and Koestner, 2015; Milyavskaya, Harvey,

Koestner, Powers, Rosenbaum, Ianakieva, & Prior, 2014; Powers, Koestner, Zuroff, Milyavskaya, & Gorin, 2011).

**Well-being.** Subjective well-being was assessed using measures of mood and of life satisfaction (Diener, 1994). The Mood Report (Diener & Emmons, 1984) was employed to assess the emotional component of subjective well-being. For each item, participants rated the extent to which they experienced a specific emotion over the past two weeks on a 7-point likert scale ranging from *not at all* to *extremely*. The scale consists of nine items, four describing positive affect (e.g., happy) and five describing negative affect (e.g., anxious/worried). The five-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) was employed to assess the cognitive component of subjective well-being. Participants rated the extent to which they agreed with statements regarding how satisfied they felt about the current conditions in their life on a 7-point Likert scale ranging from *not at all true* to *very true*. A composite index of subjective well-being was calculated with the mean standardized scores of positive affect, reversed negative affect, and life satisfaction (Diener, 1994). Well-being was measured at T1 and T2.

**Personal Goals.** In the initial survey (T1) participants were asked to identify three personal goals that they planned on pursuing that year. Examples of goals written by participants in the present study are: “Improve my Japanese”, “Build a great community of friends around myself so that we're all comfortable together” “Write down 3 things I am grateful for each day”, “Become more emotionally resilient”, “Take the MCAT and succeed”, and “cut down my body fat percentage”.

**Self-concordance.** Goal self-concordance (autonomous relative to controlled motivation) was measured using Sheldon and Kasser’s (1998) reasons for goal pursuit. For each goal, participants rated five statements (corresponding to intrinsic “because of the fun and enjoyment...”, integrated, identified, introjected, and external “because somebody else wants you to, or because you’ll get something for doing it” reasons for

goal pursuit) on a 7-point likert scale, from *not at all* to *completely for this reason*.

Autonomous motivation was calculated as the mean of intrinsic, integrated, and identified scores on the three goals, whereas controlled motivation was calculated as the mean of external and introjected scores on the three goals (Koestner et al., 2008). Finally, a self-concordance index for personal goals for each participant was computed by subtracting mean controlled motivation from mean autonomous motivation for each goal, and then computing the mean score across goals. Motivation for the three personal goals was measured at T1 and T2.

**Demographics and Living Situation.** Participants were asked to specify their age, ethnicity (open-ended), and preferred gender identity in the T1 survey. Participants were also asked to indicate their living situation by selecting one of five categories: “In a [*university name*] residence”, “...apartment with roommate(s)”, “...apartment alone”, “At home with my family” or “other”. Participants who selected “other” were asked to specify their living situation in an open-ended text box.

### **Family member and friend survey procedure**

Approximately 14 days after participants completed the baseline (T1 survey), the friend and family member identified by each participant were individually contacted via email with a request to take part in the study. In this email, friends and family were told that someone close to them (first name identified, with consent from the participant) was taking part in a study on students’ goal pursuit, and that as part of the investigation, we were interested in finding out more about their role in the students’ goal pursuit. They were informed their participation was voluntary, and would require completion of a five to ten minute questionnaire. They were also informed that participation was confidential, and that the participant who initially identified them would not be notified of whether they completed the brief questionnaire or not.

In total, 236 friends (68% female) and 254 (69% female) family members consented to participate in the study, and completed the questionnaire online. When

asked about their relationship to the student who referred them, 78% of the friends indicated that they were a friend of the student (the original participant), 19% indicated that the student was their current romantic partner, and the remaining 3% indicated that they were a roommate or colleague of the participant. As for the family members, 55% identified as “mother” (of the original participant), 24% “father”, 13% “sister”, 6% “brother”, and 2% “other” (e.g., step-parent, aunt, cousin).

**Life Aspirations.** Friends’ and family members’ aspirations were assessed using the same 12-items (Aspiration Index; Kassser & Ryan, 1996) administered to participants, and an index of relative prioritization of extrinsic to intrinsic aspirations was calculated (see above).

**Other-oriented (OOP) and Self-oriented Perfectionism (SOP).** Other-oriented perfectionism (OOP) was assessed using five items from the OOP subscale of the MPS (Hewitt & Flett, 1991b) (e.g., “I have high expectations for the people important to me”; “It is important that the people I am close to are successful”), while SOP was assessed using two items from the SOP subscale of the MPS (e.g., I set very high standards for myself)<sup>16</sup>. Friends and family members rated each item on a 7-point likert scale from *strongly disagree* to *strongly agree*. The Chronbach’s alpha was 0.85 for OOP, while it was .77 for SOP.

**Ten-Item Personality Inventory.** In order to assess the Big Five personality traits of openness, conscientiousness, extraversion, agreeableness, and neuroticism (Costa & McCrae, 1992), family members and friends completed the brief Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003), which includes two items for each

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<sup>16</sup> The two items chosen were the most highly correlated items to the full subscale. The mean of these two items correlated to the full fifteen-item subscale at an  $r$  of .81,  $p < 0.001$  in a 336 participant student sample. Individually, the first item “I am very perfectionistic in setting my goals” and the second item “I set very high standards for myself” were respectively correlated at  $r = .75$ ,  $p < 0.001$  and  $r = .65$ ,  $p < 0.001$  with the full SOP subscale.

trait. Each person rated ten statements about themselves on a 7-point scale (e.g., “I see myself as reserved, quiet”), from disagree strongly to agree strongly, and a subscale for each trait was calculated by taking the mean across the two corresponding items. The TIPI has robust test-retest reliability, as well as good convergence with longer and more frequently used measures of Big Five traits (Gosling et al., 2003).

## **Results**

### **Analytic Strategy**

All analyses were conducted in SPSS 20. First, to examine the relationship between participants’ aspirations and friends and family members’ personality traits and aspirations, we conducted correlational analyses and multiple regression analyses. To investigate proposed mediators we employed the PROCESS macro (Hayes, 2012) for SPSS, a computational tool that uses a bootstrapping resampling procedure to test for indirect effects. To examine our longitudinal hypotheses on the consequences of prioritization of aspirations on well-being and self-concordance, we conducted a series of hierarchical multiple regression analyses, controlling for baseline levels of well-being or self-concordance. Data screening found the variables of interest to be normally distributed, making the variables suitable for regression analyses.

### **Preliminary results**

Means, standard deviations, and correlations between the variables of interest can be found in Table 1. As reported in Table 1, friends’ OOP and SOP were both significantly related to participants’ prioritization of extrinsic aspirations. In contrast, family members’ OOP and SOP were unrelated to participants’ prioritization of extrinsic aspirations. Regarding convergence of aspirations, both family members’ prioritization of



extrinsic aspirations ( $r = .17, p < 0.01$ )<sup>17</sup> and friends' prioritization of extrinsic aspirations ( $r = .28, p < 0.01$ ) were significantly positively related to participants' prioritization of extrinsic aspirations. Participants' SOP was unrelated to family members' or friends' OOP or SOP; participants' SC was also unrelated to either type of perfectionism in family or friends. Lastly, participants' aspirations were unrelated to their own SOP or SC.

### **Multiple regression analyses**

Next, we examined the relationship of friends' OOP and SOP to participants' prioritization of extrinsic aspirations in a multiple regression analysis. As recommended by Stoeber (2014) we entered friends' OOP and SOP into the same regression as predictors of participants' prioritization of extrinsic aspirations, in order to control for shared variance between the two types of perfectionism. The overall model was significant ( $F(2, 223) = 4.23, R^2 = .04, p < 0.05$ ). Friends' OOP was positively related to participants' prioritization of extrinsic aspirations ( $\beta = .14, t = 2.03, p < 0.05$ ), while friends' SOP was unrelated ( $\beta = .08, t = 1.22, ns$ ).

We also investigated whether friends' OOP remained a robust predictor of participants' aspirations after controlling for the Big Five traits of the friend. We entered the Big Five traits as predictors in the first step of a hierarchical regression, and friends' OOP into the second step. At the first step of the regression, Big Five traits accounted for approximately 3% of the variance in participants' prioritization of extrinsic aspirations. Out of the Big Five traits, only friends' openness to experience was related to participants' prioritization of extrinsic aspirations (see Table 2). At the second step of the regression, friends' OOP was significantly positively related to participants' prioritization

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<sup>17</sup> We also coded family members into "parent" and "non-parent" categories, and examined whether the type of family member (parent vs. non-parent) moderated the relationship between family members' aspirations and participants' aspirations (e.g., is there a stronger relationship between family member aspirations and participants' aspirations for the parental relatives vs. non-parental relatives?). We found no difference in convergence of aspirations for parents vs. non-parents.

of extrinsic aspirations and accounted for an additional 3% in the variance in participants' prioritization of extrinsic aspirations.

### **Moderation**

Could proximity to friends vs. family have an effect on the relationship between friends' other-oriented perfectionism and students' aspirations? In order to examine the impact of social context (e.g., proximity to family or friends) on the relationship between friends' OOP on participants' extrinsic aspirations, we considered participants' living situation as a possible moderator. We wondered if the relationship may be stronger for participants' living outside of the family home, and more tenuous for participants' living in the family home.

Using participants' response to the item on living situation (T1), we recoded participants' answers into either 0- living at home with family or 1-not living with family. Nine participants who indicated that they were living in an "other" living situation (specified in an optional text box) could not be categorized into either of the two binary groups (e.g., living with husband; living with sibling attending the same university), and were excluded from analyses.

We conducted a multiple linear regression, regressing friends' mean-centered other-oriented perfectionism scores, participants' place of residence (binary: living with family or not), and the interaction between friends' mean-centered OOP and participants' place of residence on participants' prioritization of extrinsic aspirations. At the first step, the model was significant  $F(2,217) = 4.22, p < 0.05$ , explaining 4% of the variance in participants' prioritization of extrinsic aspirations ( $R^2 = .06$ ). Friends' mean-centered other-oriented perfectionism was positively related to participants' prioritization of extrinsic aspirations ( $\beta = .19, t = 2.84, p < 0.01$ ), while place of residence was unrelated ( $\beta = -.10, t = -.40, ns$ ). In the second step, the model remained significant  $F(3,216) = 4.36, p < 0.01$ , with the interaction between friends' OOP and residence explaining an additional 2% of the variance in participants' prioritization of extrinsic aspiration term.

The interaction was significantly related to participants' prioritization of extrinsic aspirations ( $\beta=.52, t=2.12, p<0.05$ ) (see *Figure 1*). Examining the simple slopes, for participants' living outside of the family home ( $n=191$ ), friends' OOP was positively related to prioritization of extrinsic aspirations ( $\beta=.22, t=3.106, p<0.01$ )<sup>18</sup>. However, for participants' living in the family home ( $n=25$ ), friends' OOP was unrelated to participants' prioritization of extrinsic aspirations ( $\beta=-.20, t=-1.03, ns$ )<sup>19</sup>.

### **Indirect effects**

We removed the 25 participants living at home and the nine participants in living situations other than living with roommates, in an apartment alone, or in residence. Next, we used the PROCESS macro (Hayes, 2012) in order to investigate the direct and indirect effects of friends' other-oriented perfectionism (OOP) on participants' aspirations. The process method uses a bootstrap re-sampling procedure ( $k=5000$ ) to estimate 95% confidence intervals (CI) of the indirect effects. Specifically, we wondered whether the effect of friends' OOP on participants' prioritization of extrinsic aspirations could be accounted for by friends' own prioritization of extrinsic aspirations (modelling pathway), or whether there was an independent direct effect of friends' OOP on participants' prioritization of extrinsic aspirations.

First, friends' OOP was significantly positively related to friends' prioritization of extrinsic aspirations (unstandardized  $b = .30, SE = 0.7, t = 4.01, p < 0.001, 95\% CI = .15, .44$ ), accounting for 8% of the variance in friends' prioritization of extrinsic aspirations

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<sup>18</sup> Simple slopes were examined using Dawson's (2014) excel worksheet for interactions with a binary moderator, using procedures outlined by Aiken and West (1991).

<sup>19</sup> Power was lower for the group of students living at home, due to small size of the subgroup ( $n=25$ ). Both total sample size and subgroup size are known to influence power in interactions with dichotomous moderators. Aguinis and Stone-Romero (1997) ran a series of Monte Carlo simulations to investigate the effects of manipulated total group size and subgroup size on dichotomous moderation, and found both total sample ( $N=60$  or  $N=300$ ) and subgroup proportion (e.g., proportion of total sample in subgroup 1 out of total sample; .1, .3, and .5) meaningfully impact power. Power was consistently higher for detecting interaction effects when total  $N=300$  compared to  $N=60$ , and greater equality in proportions across subgroup also led to higher power in both total  $N=60$  and  $N=300$  simulations.

( $F(1, 189)=16.7, p<0.001$ ). Second, friends' prioritization of extrinsic aspirations ( $b =.22, SE = 0.07, t =3.46, p<0.001, CI=.10, .36$ ) and friends' OOP ( $b =.16, SE = 0.07, t =2.29, p<0.05, CI=.02, .29$ ) were both significantly positively related to participants' prioritization of extrinsic aspirations, accounting for 11% of the variance in participants' aspirations ( $F(2, 188)=11.80, p<0.001$ ). Next, we examined the total, indirect, and direct effects. The total effect of friends' OOP on participants' prioritization of extrinsic aspirations was significant at  $b=.23 (SE = 0.07, t =3.32, p<0.01)$ , with 95% confidence intervals at  $CI=.09, .36$ . The bootstrap re-sampling procedure estimated the indirect effect of friends' OOP on participants' extrinsic aspirations through friends' own extrinsic aspirations to be  $b=.07 (SE=.02), CI = .03, .12$ , which is considered significant, as the confidence intervals do not straddle zero (Hayes, 2012). The direct effect of friends' OOP on participants' prioritization of extrinsic aspirations through friends' own prioritization of extrinsic aspirations was  $b =.16 (SE = 0.07, t =2.29, p<0.05), CI=.09, .36$ . These results support an indirect effect of friends' OOP on participants' prioritization of extrinsic aspirations, through friends own aspirations, as well as a direct effect of friends' OOP on participants' aspirations, independent of friends' own aspirations (see Figure 2).

### **Outcomes of extrinsic prioritization**

Lastly, we investigated the relationship between extrinsic aspirations prioritization and changes in subjective well-being (SWB) and goal self-concordance over the semester. In order to test the hypothesis that prioritization of extrinsic relative to intrinsic aspirations would be related to decreased SWB and self-concordance over three months, we conducted two hierarchical multiple regressions. In the first regression, we regressed T1 SWB on T2 SWB in the first step of the regression, and regressed extrinsic aspirations prioritization on T2 SWB in the second step. By entering T1 SWB as a predictor in the first step of the regression, we were able to control for individual differences in SWB at baseline, and examine whether aspirations at baseline predict residual change in SWB from T1 to T2. At the second step, the model was significant,  $F$

(2, 306) = 96.18,  $p < 0.001$ , with prioritization of extrinsic aspirations explaining an additional 2% in T2 SWB beyond the variance explained by T1 SWB. Prioritization of extrinsic aspirations was negatively related to T2 SWB (Table 3).

Next, we duplicated the hierarchical regression, however, we replaced SWB with goal self-concordance as the dependant variable, in order to investigate whether individuals who highly prioritize extrinsic aspirations tend to change in self-concordance over time. At the second step, the model was significant,  $F(2, 304) = 90.03$ ,  $R^2 = .37$ ,  $p < 0.001$ . Prioritization of extrinsic relative to intrinsic aspirations was significantly negatively related to changes in self-concordance from T1 to T2 (Table 4).

It appears that participants who highly prioritized extrinsic aspirations relative to intrinsic aspirations in September tended to decline in well-being and self-concordance over the semester, compared to participants who were low on prioritization of extrinsic relative to intrinsic aspirations.

### **Discussion**

In examining the correlates of prioritization of extrinsic relative to intrinsic aspirations, an interesting pattern of results emerged. Regarding the correlates of extrinsic aspirations, we found that participants' prioritization of extrinsic aspirations was related to close others' values and personality. As hypothesized we found that friends' perfectionism (both OOP and SOP) was positively related to participants' prioritization of extrinsic aspirations. When shared variance in the two forms of perfectionism was controlled for, only friends' other-oriented perfectionism (OOP) was related to participants' aspirations; therefore, the relationship seems to be specific to OOP, the more interpersonal form of perfectionism (Stoeber, 2014). That is, participants' who had friends with high standards and expectations for success for the people around them were more likely to value extrinsic aspirations. However, this was not true for family members. Family members' SOP and OOP were unrelated to participants' extrinsic values.

Notably, we found support for a convergence of aspirations between participants

and close others. Both family and friends' prioritization of extrinsic aspirations were related to participants' prioritization of extrinsic aspirations. Kasser et al.'s (1995) investigation of the development of adolescents' aspirations uncovered a positive relationship between adolescents' aspirations and their mothers' aspirations. Lokes et al. (2011) also found a convergence between mothers' aspirations and their adolescents' aspirations. However in the latter investigation, the relationship was only robust for adolescents' who reported high (compared to low) need support in the home. That is, adolescents in need-supportive homes were more likely to internalize the aspirations of their mothers. While Lokes et al. (2011) and Kasser et al. (1995) collected reports on aspirations from adolescents and mothers, we are unaware of any studies that have examined the impact of both family members' and friends' aspirations on young adults' prioritization of extrinsic relative to extrinsic aspirations.

Ahuvia and Wong (2002) found support for a relationship between *recalled* values of socialization agents in childhood to adolescence and participants' materialistic personal values in adulthood. Participants who recalled that these agents were more concerned with materialistic pursuits and security, and less concerned with pursuing a more benevolent society, tended to be more materialistic in their personal values. While Ahuvia and Wong's study was an interesting investigation of social influence on values, there are two significant limitations to interpretation. Firstly, all analyses examining the influence of these "socialization agents" invoked a latent variable of general materialism across all socialization agents, making it impossible to deduce influence of different types of socialization agents (e.g., mother vs. friend vs. teacher). Secondly, the study relied on the imperfect memory of participants, and the recalled values of close others' are prone to bias. Therefore, two substantive benefits of the present study are the separation of possible "socialization agents" into family member and friend categories, as well as the collection of multiple informant reports.

While some researchers have shown minimal influence of parents relative to

friends for adolescents and young adults in certain life domains (e.g., Harris, 1998), the present study revealed effects of both family members' and friends' aspirations on young adults' aspirations. The correlation between close friends' and participants' aspirations was somewhat larger than that between family members and participants, however, family members' prioritization of extrinsic aspirations was positively related to participants' prioritization of extrinsic aspirations. Similarly, other researchers have found that family members seem to continue to have a meaningful influence on young adults' attitudes and behaviour, including drinking behaviour (Wood et al., 2004), body image (McCabe & Ricciardelli, 2001), and drug use (Allen, Donohue, Griffin, Ryan & Turner, 2003), that is commensurate with the influence of friends, albeit somewhat smaller.

In the present study, we found support for a dark side of friends' perfectionistic standards. Friends (but, not family members) high in OOP were more extrinsic in their own aspirations and were more likely to be connected to participants oriented towards extrinsic aspirations. We postulated that having friends' high in OOP may leave one vulnerable to becoming more extrinsic over time. Stoeber (2014) has demonstrated that trait OOP is related to Machiavellianism, narcissism, subclinical psychopathy, and a decreased tendency to set prosocial goals. Extrinsic aspirations of wealth, alluring physical image, and popularity/fame are often celebrated as visible manifestations of success in North American culture. Therefore, it is possible if one's friends are high on OOP, one may be more likely to gravitate towards aspirations related to external markers of success, due to: a) the friends' modeling of extrinsic orientation, and b) internalization of the friends' excessive standards.

Examining the direct and indirect effects of friends' OOP on participants' aspirations, we found support for these two pathways. First of all in the indirect pathway, friends high in OOP were more likely to prioritize extrinsic aspirations, and friends' prioritization of extrinsic aspirations was positively related to participants prioritization

of extrinsic aspirations. In other words, it seems that friends modeled values for participants (that is, participants' friends were similar to participants in their aspirations), and other-oriented perfectionistic friends were more likely to model extrinsic aspirations. Secondly, in the direct pathway, friends high in OOP were more likely to be connected to participants who prioritized extrinsic aspirations, regardless of the friends' own aspirations.

One important consideration for interpreting the present findings that participants' aspirations were related to friends' OOP is previous research on peer conformity or "peer contagion" (see Dishion & Tipsord, 2011 for history of term). Berndt (1979) examined the developmental trajectory of conformity to peers relative to parents in children from 3<sup>rd</sup> to 12<sup>th</sup> grade, and found that antisocial, neutral, and prosocial conformity to parents linearly decreased over time, while conformity to peers peaked around 9<sup>th</sup> grade. While Berndt's investigation involved school children and ours involved university students, Berndt's study does provide compelling evidence that parental influence may decrease over time. In a review, Dishion and Tipsord (2011) summarized the growing body of research on the phenomenon of peer contagion in social and emotional development, and while contagion has been studied more extensively in children and adolescents, the authors do review evidence of peer contagion in college settings, from frequency of drinking in freshman year being strongly influenced by roommate's past drinking history (Duncan et al., 2005), to eating disorders spreading amongst female friends in sororities (Crandall, 1988).

Re-iterating the importance of considering social context when considering influences on life aspirations, we found that participants' living context moderated the effect of friends' OOP on participants' prioritization of extrinsic aspirations. Specifically, the relationship between friends' OOP and participants' aspirations was not present for the minority of participants' who were currently living at home with their family. Our interpretation of this finding is that students living outside of the family home (i.e., with



roommates, alone, or in residence) were more *proximate* to their friends, compared to students living in the family home, thus more influenced by close friends' OOP. While we do not have the data to test our interpretation in the current study, we suspect that students living outside of the family home were more involved with their friends (e.g., see their friends more in their daily lives), compared to participants living at home. Similarly, in Newcomb's classic study (1943), it was found that involvement in the college community moderated students' change in attitudes, such that students more involved in the community were more likely to shift towards the liberal attitudes of the college community, compared to less involved students. Interpretation of this effect is also limited by the small proportion of participants living at home, resulting in unequal subgroups for examining the interaction. It would be interesting to investigate this interaction in a larger sample of participants living at home, as examining the betas of the simple slopes (*Figure 1*), it appears friends' OOP may have had a reverse effect in this subgroup.

Prospective data collection and analyses in the present study also revealed possible deleterious consequences of prioritization of extrinsic relative to intrinsic aspirations. Not only did the students focused on more extrinsic relative to intrinsic aspirations tend to feel worse in terms of emotional and cognitive well-being (SWB) as the semester wore on, they also tended to feel less self-concordant towards the personal goals they had elected to pursue at the start of the semester. These results add support to the previous findings of Sheldon et al. (2004) and Niemiec et al. (2009) that baseline prioritization of extrinsic aspirations predicted decreases in university students' well-being over the next year, while extending the investigation of outcomes beyond well-being to include goal motivation.

Why did participants oriented to more extrinsic aspirations feel less self-concordant about their personal goals over time? In the introduction, we proposed that individuals focused on extrinsic aspirations may become more "out of touch" (Sheldon,

2014), due to sublimating more psychologically satisfying intrinsic pursuits, for less psychologically satisfying extrinsic pursuits. However, we did not examine basic psychological need satisfaction as a mediator, and cannot speculate on whether the participants who were higher in prioritization of extrinsic aspirations experienced decreased self-concordance due to obstructed need satisfaction or not. As this is the first investigation to examine aspirations as a predictor of changes in goal self-concordance over time, future investigations are necessary to probe for replicability, directionality, and mediators of these results.

### **Limitations and future directions**

While we have postulated that friends' high in OOP may be a negative influence on the aspirations of their close friends, an alternate explanation should be considered. It is possible that people who are extrinsically oriented are more likely to gravitate towards friends that are high in OOP, compared to low in OOP. Unfortunately, the present investigation does not allow us to elucidate the direction of the relationship pairs of friends, as other-informant reports were only collected at one time-point. For example, a future investigation could follow pairs of friends attending the same university over the course of the year. Each friend in the dyad would complete self-report measures of OOP, SOP, aspirations, and well-being at three assessments points over the year. This design would allow for cross-lagged structural equation modeling (Burkholder & Harlow, 2003) in order to ascertain the direction of the relationship between friends' perfectionism and changes in aspirations, as well as determine whether an increase in prioritization of extrinsic aspirations mediates the relationship between friends' perfectionism and decreased subjective well-being.

Another question raised by the present study is whether the relationship between friends' perfectionism and participants' aspirations is specific to the developmental period of these college-aged participants. It is possible that friends play an especially critical role at this time of exploration and newfound independence. Therefore, it would

be useful to compare the correlations between friends' and parents' personality and aspirations and individuals' aspirations at different developmental periods, such as early adolescence (e.g., 13 year olds) vs. late adolescence (e.g., 18 year olds).

As causality cannot be determined by longitudinal investigation alone, future research is warranted to experimentally manipulate perceived level of OOP amongst friends or same-aged peers. For example, an experimental study could examine whether there is an effect on self-reported aspirations after interacting with a confederate high vs. low in OOP. Similarly, could reading a script about the culture of one's university or residence that emphasizes desire for perfection from students result in incremental shifts towards extrinsic aspirations in the reader? As many institutions may subtly transmit a message of regard for perfectionistic behaviour of students or employees, this is a question we are particularly interested in investigating.

In summary, the present investigation revealed a tendency for individuals with friends who are high in other-oriented perfectionism to place greater importance on extrinsic aspirations, such as wealth, relative to intrinsic aspirations, such as community contribution. These results convey that controlling, perfection-demanding friends might have an influence on young adults' values. Furthermore, students in our study who prioritized extrinsic aspirations more highly ended up feeling less happy and less autonomous over time. The results from this study add to the mounting evidence that pursuit of extrinsic aspirations may be incongruent with psychological health and thriving throughout life.

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### Tables and Figures Article 3

**Table 1.**  
*Correlations, Means, and Standard Deviations*

Variable	Mean	SD	1	2	3	4	5	6	7	8
1. Relative prioritization of extrinsic aspirations (participant)	-2.10	1.29	-							
2. Self-oriented Perfectionism (participant)	4.75	1.01	.09	-						
3. Self-criticism (participant)	4.46	1.01	.10	.35**	-					
4. Relative prioritization of extrinsic aspirations (friend)	-2.41	1.35	.28**	.08	.07	-				
5. Self-oriented perfectionism (friend)	4.70	1.40	.14*	.09	-.04	.09	-			
6. Other-oriented perfectionism (friend)	3.92	1.27	.17*	.08	.02	.24**	.36**	-		
7. Relative prioritization of extrinsic aspirations (family)	-2.79	1.36	.17*	-.03	-.06	.04	.07	.15 <sup>†</sup>	-	
8. Self-oriented perfectionism (family)	4.42	1.35	.021	.07	.05	.03	.10	.07	.15 <sup>†</sup>	-
9. Other-oriented perfectionism (family)	4.27	1.24	.07	.03	.04	.07	.03	.08	.27**	.56**

<sup>†</sup>  $p < 0.05$ ; \*  $p < .01$ , \*\*  $p < 0.001$

**Table 2.**

*Regression of friends' personality traits on participants' prioritization of extrinsic aspirations .*

Step	Predictors	$\beta$	SE	Unstandardized	$R^2$
1					.03
	Extraversion (friend)	.05	.06	.04	
	Agreeableness (friend)	-.07	.08	-.08	
	Conscientiousness (friend)	.02	.07	.02	
	Neuroticism (friend)	.02	.06	.02	
	Openness to Experience (friend)	-.15 <sup>†</sup>	.09	-.18	
2					.06
	Other-oriented perfectionism (friend)	.16 <sup>†</sup>	.07	.16	

*Note.* <sup>†</sup>  $p < 0.05$ ; \*  $p < .01$ , \*\*  $p < 0.001$ ;  $\beta$  represents the standardized regression coefficients

**Table 3.**

*Prioritization of extrinsic aspirations and changes in subjective well-being over time.  
Regression of predictors on subjective well-being at T2.*

Step	Predictors	$\beta$	SE	Unstandardized	$R^2$
1					.37
	Subjective Well-being at T1	.61**	.05	.61	
2					.39
	Relative prioritization of extrinsic aspirations at T1	-.13*	.03	-.08	

Note. †  $p < 0.05$ ; \*  $p < .01$ , \*\*  $p < 0.001$ ;  $\beta$  represents the standardized regression coefficients

**Table 4.**

*Prioritization of extrinsic aspirations and changes in self-concordance for personal goals over time. Regression of predictors on self-concordance for personal goals at T2.*

Step	Predictors	$\beta$	SE	Unstandardized	$R^2$
1					.60
	Self-concordance for personal goals at T1	.60**	.05	.63	
2					.61
	Relative prioritization of extrinsic aspirations at T1	-.09 <sup>†</sup>	.06	-.11	

*Note.* <sup>†</sup>  $p \leq 0.05$ ; \*  $p < .01$ , \*\*  $p < 0.001$ ;  $\beta$  represents the standardized regression coefficient

Figure 1.

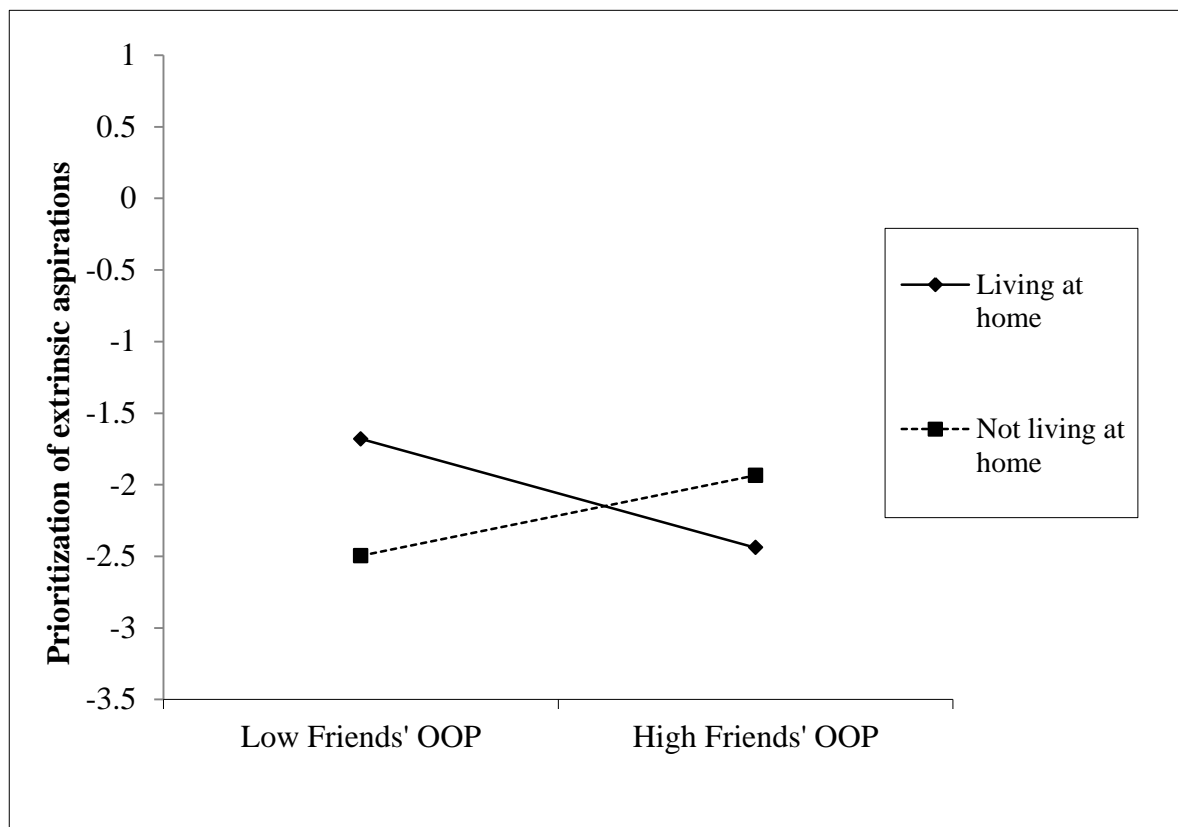


Figure 1. Place of residence moderates the relationship between friends' OOP and participants' prioritization of extrinsic aspirations. For participants living outside of the family home ( $n=191$ ), friends' OOP was positively related to prioritization of extrinsic aspirations ( $\beta=.22$ ,  $t=3.106$ ,  $p<0.01$ ). However, for participants living in the family home ( $n=25$ ), friends' OOP unrelated to participants' prioritization of extrinsic aspirations ( $\beta=-.20$ ,  $t=-1.03$ ,  $ns$ ).



Figure 2.

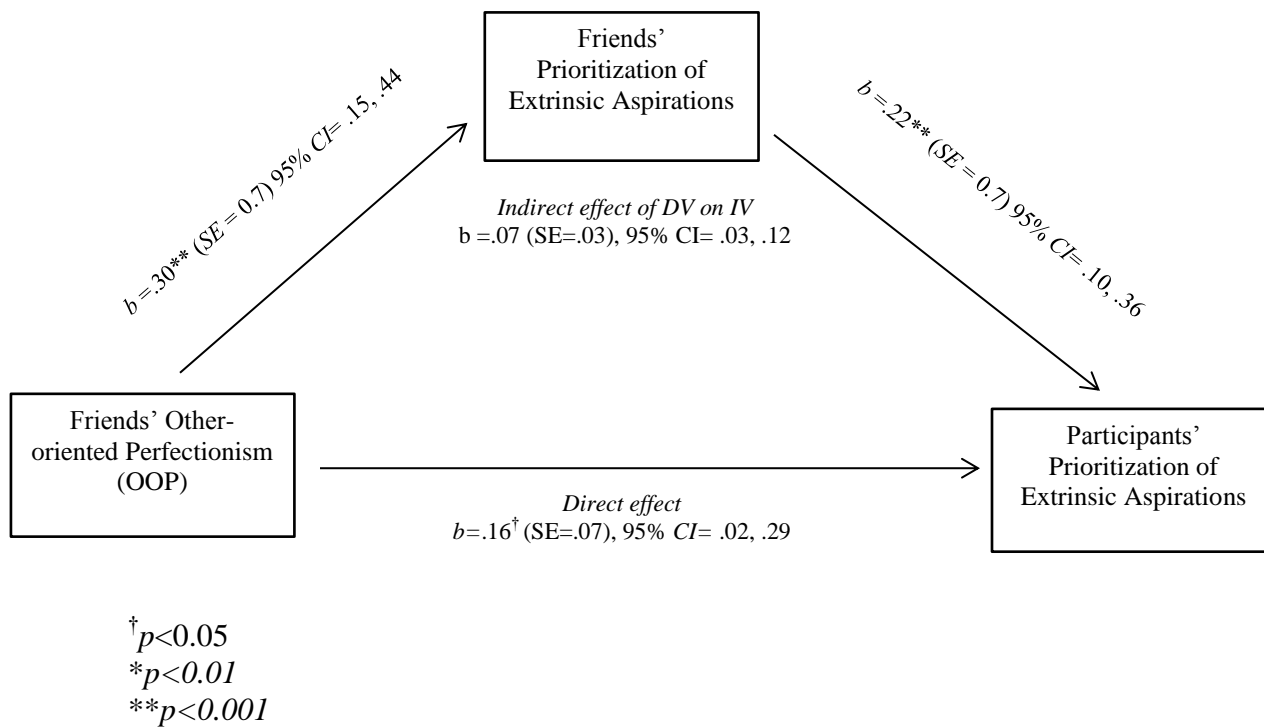


Figure 2. Direct and indirect effects of friends' OOP on participants' prioritization of extrinsic aspirations. Total effect of DV on IV:  $b = .23$  (SE = .07), CI = .09, .36,  $p < 0.005$

## Summary and Conclusions

“ ‘What is my goal in life?’ ‘What am I striving for?’ ‘What is my purpose?’.

These are questions which every individual asks himself at one time or another, sometimes calmly and meditatively, sometimes in agonizing uncertainty or despair. They are old, old questions which have been asked and answered in every century of history. Yet they are also questions which every individual must ask and answer for himself, in his own way.” - Carl Rogers (1961, p. 164)

Congruent to Rogers’s reflection, goal researchers have acknowledged that existential questions about goal striving, such as wondering what goals lead to a fulfilled life, have been asked since ancient times (Schmuck & Sheldon, 2001). However, empirical interest in this question is a contemporary phenomenon. Previously, motivational researchers avoided approaching the question of optimal goal-striving for fear of criticism of values-laden research (i.e., importance of values-free research emphasized by Rokeach, 1973). Kasser and Ryan first approached the important question of life values and well-being empirically two decades ago (1993; 1996), and research on the topic has proliferated since. While numerous studies have supported a positive relationship between prioritizing intrinsic aspirations (e.g., community contribution) and well-being, and negative consequences of excessive focus on the more materialistic set of extrinsic aspirations (e.g., financial success), longitudinal investigation has been slow-coming. The present thesis addresses the gap in longitudinal research on life values and well-being, and focuses on the role of intrinsic relative to extrinsic aspirations in well-being and self-regulation. From the empirical evidence presented in the three articles of

the present work, I make three summarizing arguments: 1) young adults who prioritize intrinsic relative to extrinsic aspirations tend to experience increased well-being over time, compared to their less intrinsic peers, 2) prioritizing intrinsic aspirations and pursuing personal goals connected to intrinsic aspirations confers self-regulatory benefits, and 3) close others' personality meaningfully influences individuals' values priorities.

*Prioritization of Intrinsic Relative to Extrinsic Aspirations and Changes in Well-being Over time*

First, the present work found evidence for individuals who prioritize intrinsic relative to extrinsic aspirations experiencing greater well-being over time. That is, individuals who prioritize intrinsic aspirations seem to get happier over time. Expanding on previous cross-sectional research that has found a relationship between placing importance on intrinsic aspirations relative to extrinsic aspirations and well-being (Kasser, 2002), I examined this relationship prospectively in two independent samples of students in Articles 1 and 3.

Researchers have identified a lack of longitudinal investigation of the relationship between life values and well-being as a significant gap in the literature (Dittmar, Bond, Hurst, & Kasser, 2014). Two novel findings emerged in Articles 1 and 3. First, applying Erikson's theory of lifespan development, we wondered if moving towards intrinsic aspirations priorities (e.g., values change over time) might propel young adults' towards resolution of the psychosocial stages of identity and intimacy. We found as young adults became more intrinsic in their values priorities over the year, they tended to experience a corresponding increase in subjective well-being and psychological well-being (Article 1). For subjective well-being, the relationship was mediated by increased identity resolution; For psychological well-being, a more eudaimonic conceptualization of well-being, this

relationship was mediated by both identity and intimacy resolution. Secondly, in Article 3, we found that individuals' values at baseline (i.e., the start of the study) predicted their future adaptation. As discussed in Article 3, individuals who valued intrinsic relative to extrinsic aspirations<sup>20</sup> more highly went on to experience (3 months later) increased subjective well-being, supporting the hypothesis that individuals who value intrinsic aspirations become more happy and feel more autonomous relative to controlled (self-concordant) in pursuing their personal goals over time.

*Prioritization of Intrinsic Relative to Extrinsic Aspirations and Self-regulatory Outcomes*

Second, as individuals pursue goals that are more intrinsic in aspirational content relative to their other goals, they tend to make more progress compared to their other goals (Article 2). Moreover, as individuals make progress on their goals, it seems that only goals high in intrinsic relative to extrinsic aspirational content result in affective benefits. We found that regardless of individual differences, such as overall life aspirations, people experienced greater vitality progressing towards their more intrinsic goals (i.e., goal progress and vitality related linearly for goals high in intrinsic relative to extrinsic aspirational content) while they experienced no benefits to vitality for making progress on their less intrinsic goals (i.e., no relationship between goal progress and vitality for goals low in intrinsic relative extrinsic aspirational content).

In Article 3, we examined the implications of relative prioritization of intrinsic aspirations on motivation for personal goals prospectively. Analyses revealed that as the students in the study pursued three goals personal goals across the semester, the students

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<sup>20</sup>Framed as extrinsic relative to intrinsic aspirations in Article 3. However, the same numerical calculation procedure used for intrinsic relative to extrinsic aspirations, therefore in the general conclusion section results interpreted in terms of prioritization of intrinsic aspirations for consistency with other articles.

who prioritized intrinsic aspirations more highly at the beginning of the semester became more autonomous relative to controlled (more “self-concordant”) in their reasons for pursuing their goals. That is, from their baseline motivation at the start of the semester, students who prioritized intrinsic relative to extrinsic aspirations more highly tended to experience increased self-concordance for their goals as the semester went on. Self-concordance has both self-regulatory and organismic benefits. Regarding self-regulatory benefits, research has consistently demonstrated a relationship between autonomous motivation and goal progress. For example, in a meta-analysis Koestner et al. (2008) found that across studies autonomous motivation predicted goal progress and likelihood of goal attainment. Autonomous motivation for goals has also been associated with less conflict between goals and greater readiness to change (Koestner et al., 2008), fewer obstacles (“temptations”) detracting from goal pursuit, and more effortless goal pursuit (Milyavskaya et al., 2015). Regarding organismic benefits, Sheldon (2014) asserts that measuring goal self-concordance via self-report can serve as a proximate measure for personality integration. Sheldon has demonstrated that self-concordance predicts congruence between people’s implicit motivation (subconscious, automatic, assessed using covert measures and reaction time as inaccessible to an individual’s conscious mind) and explicit motivation (conscious, effortful, assessed using self-report as accessible to conscious mind), a characteristic of greater personality integration.

Overall, the longitudinal studies presented in Articles 1, 2, and 3 support prospective benefits of pursuing intrinsic aspirations to well-being and self-regulation.

*Influence of Close Others (and Social Milieu) on Young Adults Life Aspirations*

Third, young adults' values may be influenced by the perfectionistic demands of peers. I suggest close others' trait other-oriented perfectionism as a novel antecedent of university students' valuing of extrinsic relative to intrinsic aspirations. Article 3 contributed to the understanding of how other people may impact young adults' aspirational priorities. In addition to examining the prospective consequences of valuing extrinsic relative to intrinsic aspirations on adaptive outcomes, Article 3 tested a novel hypothesis. Could high demands and expectations for perfectionism from friends and/or family be related to greater prioritization of extrinsic relative to intrinsic aspirations?

While research has demonstrated that parenting styles (Kasser, Ryan, Zax, & Sameroff, 1995; Williams, Hedberg, Cox, Deci, 2000; Lokes, Gingras, Philippe, Koestner, & Fang, 2010) and social environment (e.g., law school; Sheldon & Krieger, 2004) can contribute to values priorities, no prior investigations have examined the relative influence of friends vs. family members' life aspirations and personality on young adults' life aspirations. In addition to finding the expected positive associations between young adults' prioritization of extrinsic relative to intrinsic aspirations and the aspirations of identified close friends and family members, we also found that friends' other-oriented perfectionism was positively related to individuals' prioritization of extrinsic aspirations. That is, individuals who placed greater importance on extrinsic relative to intrinsic aspirations more highly, tended to have friends with elevated scores on a self-report measure of other-oriented perfectionism (OOP). Moreover, this effect was context specific. It seems that for the subgroup of young adults living in their family home at the time of the study, the influence of their friends' OOP on their own

prioritization of extrinsic aspirations was not significant. Therefore, proximity to friends seems to moderate the effect.

### **General Implications**

The findings of the present work have implications for understanding young adults' values priorities and for fostering well-being. I will review the implications of the three summarizing arguments.

Orienting young adults towards certain values may be an avenue for improving well-being and psychological resilience. Based on the supportive evidence in Articles 1 and 3, I have argued that “*young adults who prioritize intrinsic relative to extrinsic aspirations tend to experience increased well-being over time, compared to their less intrinsic peers*”. This implies that privileging certain values, specifically intrinsic aspirations for personal growth, community contribution, and building close relationships, may be more optimal for psychological wellness than privileging more materialistic values. Furthermore, moving towards intrinsic aspirations seems to support personal growth, with individuals that become more intrinsic experiencing greater psychosocial development (identity and intimacy resolution) and well-being.

Promoting prioritization of intrinsic aspirations relative to extrinsic aspirations could be an opportunity for improving well-being and mental health among students. University campuses in North America are experiencing increased demand for mental health services, and reporting higher rates of mental illness than ever before. In a 2010 assessment of over 200,000 American freshmen, students reported higher rates of poor emotional health as well as higher expectations to succeed than in previous 25-year history of the survey (Pryor, Hurtado, DeAngelo, Palucki Blake, & Tran, 2010). In a

separate study of students across the U.S., over fifty percent reported suicidal ideation at some point in their lives (Drum et al., 2009; as cited in Watkins, Hunt, & Eisenberg, 2012). Twenge et al. (2010) found an increase in psychopathology by birth cohort from 1938 to 2007, as measured by the Minnesota Multiphasic Personality Inventory (MMPI). This increase in psychopathology in the current generation, relative to previous generations, was suggested by the researchers as attributable to increased societal focus on extrinsic strivings and material accumulation. Indeed, the researchers' analyses revealed a significant positive relationship between birth cohort valuing of being "well off financially" and psychopathology in the cohort (Twenge et al., 2009).

Delivering psychoeducation and intervention on life aspirations to young adults on university campuses could be a cost-effective way of improving community well-being. Lekes et al. 2012 found that an education and reflection exercise on intrinsic aspirations in the lab along with four weeks of weekly email reflections led to increased importance placed on intrinsic aspirations and increased well-being compared to participants in an active control group. The design of this intervention was for small groups (<10 students per hour session) led by a research assistant, and therefore more resource intensive than an intervention suited for campus-wide delivery. Additional research is needed to determine the utility and feasibility of a brief and widespread intervention designed to orient individuals towards intrinsic aspirations.

The second summarizing argument, "*prioritizing intrinsic aspirations and pursuing personal goals connected to intrinsic aspirations confers self-regulatory benefits*", has implications for goal pursuit and research on goal-setting interventions. In Article 2, multilevel modeling analysis of two independent datasets revealed that



individuals are more likely to make progress on their goals that are higher in intrinsic relative to extrinsic aspirational content. We also found that individuals feel better (greater vitality) about making progress on their more intrinsic goals.

Elucidating factors that improve likelihood of successful goal pursuit is an important research area for motivational scientists and behavioural health specialists. Could getting individuals to focus on their goals connected to intrinsic aspirations convey more affective benefits? Alternatively, could changing the perception someone has of their personal goal by increasing their attention to the intrinsic content of the goal increase likelihood of goal success? My colleagues and I found that individuals experience affective benefits of progressing towards their more intrinsic goals. These affective benefits may in turn increase one's interest in pursuing the goal. Experimental research is needed to determine 1) the utility of manipulating focus on pursuit of goals that are intrinsic vs. extrinsic in aspirational content; and 2) whether manipulating the actual goal or perception of the goal can benefit pursuit of challenging goals of interest to behavioural health (and societal well-being), such as stopping smoking or adhering to medications.

Lastly, I have argued that "*close others' personality influences individuals' values priorities*", based on the findings of Article 3 which used reports from family member and friend informants to examine antecedents of intrinsic relative to extrinsic values priorities. There are a number of important implications of this association, including potentially deleterious consequences of pressure for success from young adults' social environment. In Article 3, close friends' other-oriented perfectionism was negatively associated with prioritization of intrinsic relative to extrinsic aspirations. This

finding illuminates a possible dark-side of friends' perfectionistic personality and their demands for others. Psychologists have theorized about negative consequences of stringent expectations from close others for many decades. For example, Rogers (1959) suggested that individuals' internalization of conditional worth from others (e.g., internalizing the belief that you are only worthy if you satisfy perceived expectations of others) was a significant vulnerability for mental illness. However, the effect of demands from perfectionists on others has not been considered in the development of values priorities. The present research implicates that friends' personality, specifically interpersonal perfectionism, can play a role in the development of values priorities.

This raises a number of interesting questions: Could perfectionistic demands from other sources, for example, perceived institutional demands from an individual's place of work or school, also be related to young adults' orientation away from intrinsic aspirations towards extrinsic aspirations? If so, there is a need to consider how the social environment a school or workplace is creating (e.g., the messages sent to students and employees through mission statements, brochures, and mottos) might impact perceived demands from others, and how this may orient individuals to certain values. What kind of message related to values and goal striving might a university want to send to create healthy, thriving students and employees? These are topics to be considered in research and application in light of the findings of the present work.

Social sciences have been plagued by evidence that some researchers have fabricated or misrepresented data in order to gain high impact publications. In December 2014, a study on changing Americans' attitudes to increase support of gay marriage co-authored by a prominent political science researcher was published in *Science*

(Konnikova, 2015). By May 2015, it was withdrawn due to suspected data fabrication by the graduate student responsible for data collection, with discovery that the distribution of the dependent variable in two supposedly different datasets mirrored each other exactly and improbably. From an outside perspective, these destructive decisions seem to be motivated by extrinsic pursuits of notoriety/ fame, and the material and intellectual rewards associated with discovery of a sensational new phenomenon. Could perceived pressure for achievement and perfectionism from the academic community contribute to committing data fabrication, at the cost of personal growth and contribution to the field? Based on the results of Article 3, I suggest that it would be useful to explore how peer acceptance and unconditional regard (particularly in the context of personal failures or shortcomings; e.g., poor grades on an exam; social mistakes) may contribute to an individuals' focus on intrinsic relative to extrinsic strivings. Such investigations could shed light on the kinds of interpersonal support that might be helpful for cultivating students' or employees' more prosocial intrinsic aspirations, as opposed to the more alienating and antisocial extrinsic aspirations that could contribute to the concealment of mistakes in pursuit of popularity and reward.

### **Implications in Psychotherapeutic Context**

Exploration of life values has been increasingly incorporated into practice of evidence-based contemporary psychotherapies, particularly third-wave cognitive behavioural therapies (Hayes, 2004). For example, a core component of Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) is valued-living: the enactment of one's most important values in day-to-day experiences. This requires the therapist to deliver psychoeducation on life values to the client, identification of the

client's most important values, and analysis of the client's current behaviour in regards to their values. For example, the client and therapist may use an "ACT Matrix" (Polk & Schoendorff, 2014) to map out recent behaviours (e.g., on Monday: making breakfast for roommates in the morning; taking a smoking break at work in the afternoon; Going to the gym after work; Gambling money in online poker games in the evening) on a quadrant according to whether they are behavioural *moves away* or *moves towards* their identified values.

I commend the incorporation of exploration of life values into the psychotherapeutic process. However, I wonder whether certain life values may be more or less beneficial for the client to get in touch with. For example, if client identifies "becoming rich" or "appearing beautiful to others" as their most important life strivings, could therapeutic exercises designed to get the client living out their values be detrimental? Extreme valuing of materialistic pursuits may be more likely in clients with severe mental illness (e.g., living with a personality disorder). Self-determination theory supports the notion that individuals who have experienced less need support in their developmental environments are more likely to gravitate towards extrinsic aspirations (Kasser, Ryan, Zax, & Sameroff, 1995). Furthermore, research suggests that individuals experiencing greater symptoms of mental illness, such as depression, also tend to report lower valuing of intrinsic aspirations (Kasser & Ryan, 1996).

The present thesis supports the notion that certain life values may be more useful for cultivating future well-being than other values. Therefore, this work suggests the possibility of differential outcomes on the basis of values for clients in psychotherapy. While clinical trials for treatment of depression and anxiety (e.g., Forman, Herbert,

Moitra, Yeomans, & Geller, 2007; Arch, Eifert, Davies, Vilaradaga, Rose, & Craske, 2012) and laboratory investigations (see Levin, Hildebrandt, Lillis, & Hayes, 2012 for meta-analysis) support ACT as an evidence-based treatment, there is no rigorous investigation of the role exploration of values plays in outcomes. Some important clinical research questions are suggested by the present thesis, including: 1) Does enactment of valued living behavioural exercises (e.g., doing more activities related to your values in daily life) only benefit well-being for individuals who prioritize intrinsic aspirations? 2) Does exploration of values in the ACT context move clients more towards intrinsic aspirations and away from extrinsic aspirations? 3) Does therapists' prioritization of intrinsic relative to extrinsic aspirations predict clients' shift in aspirations over the course of psychotherapy? 4) Is a change in values prioritizes over the course of psychotherapy (e.g., moving towards prioritization of intrinsic aspirations) associated with greater well-being and symptom reduction for clients?

### **Limitations and Future Directions**

There are several noteworthy limitations to the present work. These limitations are lack of experimental design, homogeneity of participants, and reliance on self-report assessment of key variables. As none of the studies included in Articles 1 through 3 were experimental in nature causality cannot be determined. For example, in Article 3 we found that individuals' prioritization of intrinsic relative to extrinsic aspirations predicted changes in well-being and self-concordance for personal goals over the next three months. However, as participants' aspirations were not isolated and manipulated in a controlled manner (e.g., in an experimental design with participants randomized to either a condition intended to change prioritization of intrinsic aspirations or an active control)

it is impossible to determine whether individuals' values priorities *caused* changes to well-being and self-concordance. While we controlled for baseline well-being and self-concordance in examining future change, it is possible that a third variable, such as participants' trait openness to experience or availability of social support, could contribute to participants' initial prioritization of intrinsic aspirations and changes in well-being over time. Without experimental design, it is also impossible to rule out that the relationship between relative prioritization of intrinsic aspirations and change in well-being is spurious.

Regarding the profile of participants in the studies included in the present work, all participants were undergraduate students attending university in a major Canadian city. Reflecting the population the sample was drawn from, the samples were disproportionately white and female, although a significant proportion of participants were from ethnic minorities (36% of the sample in Article 3). This homogeneity of participants (educated, living in Canada, predominantly white and female) limits generalizability beyond Canadian university students. Therefore, replication is warranted in other populations, such as university students living in East Asia, Europe, and the United States, and young adults in the same developmental period, emerging adulthood (Arnett, 2000), who are not attending University. It is also impossible to determine whether the results we obtained, highlighting prioritization of intrinsic aspirations as beneficial to future well-being and self-regulation, are unique to this developmental period. Future research should endeavor to determine whether prioritization of intrinsic aspirations is equally important to changes in well-being and goal progress at other developmental periods, including adolescence, middle age, and post-retirement.

Finally, as the method of data collection was distribution of questionnaires to participants, all of the variables used in analyses rely on self-report measures. Self-report is the primary method of assessment in personality and social psychology research, and incurs numerous benefits, such as assessment of unobservable cognitions, subjective emotions, and perceptions of others. Neuroscientists are in the process of developing analytic techniques for identifying symptoms (e.g., hallucinations), preferences (e.g., for alcoholic beverages), and other “hidden” information from neuroimaging data that could, until now, only be derived from self-report assessment (Linden, 2012). However, such techniques are only in the preliminary stages of development and rudimentary at best. Self-report remains the sole method of assessing someone’s values priorities. Nonetheless, self-report data collection presents several barriers to validity and interpretability of data.

Due to the reliance on subjective information from each participant, self-report data can be prone to biases that may increase systematic error, including fallibility of memory for past behaviour, distorted perception, social desirability, and common method variance. Common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003 for comprehensive review; Campbell & Fiske, 1959) refers to associations between variables due to the common methodology underlying the variables in question, in this case self-report from participants rather than true association between the variables in the real world. It is worth noting that longitudinal design overcomes some of the limitations of common method variance, by collecting reports at different time points, providing some variation in context. One of the concerns of cross-sectional design for self-report data collection is that an individual’s reports on diverse measures of their behaviours, beliefs,

and cognitions could be biased by the state the individual is in at the time of reporting (Lindell & Whitney, 2001). If a participant received bad news the morning they participated in a cross-sectional study, all of their reports may be negatively biased. Therefore, some of the limitations of past research relying on cross-sectional self-report data are improved upon in the longitudinal design of the present work. Similarly, by including reports from multiple informants in Article 3 instead of asking participants to report on their friend and family member's personality, we removed the potential confound of spurious association between participants' aspirations and their friends' personality due to a common source (the participant) of the data.

However, external validity could be further improved by introducing multiple methods of assessment into the design, including behavioural assessment of additional outcome variables. Such assessment could include analysis of observed facial expression in the lab for an implicit measure of positive and negative emotionality (e.g., computer recognition of facial expression, Littlewort, Whitehill, Fasel, Frank, Movellan, & Bartlett, 2011), choice of monetary vs. benevolent remuneration for study participant (e.g., option to donate pay for the study to charity), and observation of persistence towards goals. For example, elaborating on the results of Article 2, that people tend to make more progress on their goals that are more intrinsic in aspirational content, a future investigation could examine the amount of time participants spend on task relevant vs. task irrelevant behaviour when assigned a behavioural task related to one of their more intrinsic vs. more extrinsic goals.

One emerging area in which life values, or aberrations in life values, have not been well-characterized is in the field of clinical psychology. Assessing life values in the



context of patients living with psychopathology could be beneficial for understanding and treating patients. One interesting question that has not been addressed in the clinical literature or in the literature on life values is: Could extrinsic aspirations play a role in the etiology of certain psychopathologies?

Borderline personality disorder (BPD), characterized by unstable relationships, fragile sense of self, emotion dysregulation and frequent mood swings, and engagement in impulsive coping behaviours (e.g., excessive spending, binge eating and purging behaviour, self-harm, and drug abuse) may be of particular interest in studying the intersection of life values and clinical psychology. Borderline personality disorder is associated with negative experiences and limited support in childhood or adolescence (Paris, 2003). Westen et al., (1990) found evidence of childhood sexual abuse in the medical charts of over 50% of adolescents living with BPD in an inpatient sample, while Zanarini et al. (2002) found a similar prevalence of childhood sexual abuse (62%) in an independent sample of adult patients, and that severity of abuse correlated with severity of symptoms. Self-determination theory posits that experiences of neglect, abuse, or family dysfunction in childhood, resulting in frustration of the needs for autonomy, relatedness, and competence, can lead to the pursuit of “need substitutes”: illustrious goals pursued following experiences of need frustration that may be culturally valued (e.g., consumer goals) but provide limited need satisfaction (Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013). SDT considers extrinsic aspirations as need substitutes. Researchers have demonstrated that adolescent females who report having grown up in a family environment where basic psychological needs were deprived placed greater importance on striving for an attractive physical image (Thøgersen-Ntoumani,

Ntoumanis, & Nikitaras, 2010); and this extrinsic striving was associated with disordered body image.

### **Final Conclusion**

As researchers continue to make progress in this area, we get closer to answering Maslow's (1954) call for a psychology of human excellence and thriving. Understanding the influence of values prioritization on well-being and developing an etiology of intrinsic vs. extrinsic aspirations priorities is an important step in establishing a comprehensive science of the human motivation. The present work adds to our understanding of life values by demonstrating a longitudinal relationship between the importance of intrinsic relative to extrinsic aspirations and enhanced well-being as well as enhanced self-regulation. Furthermore, this work suggests important areas of future investigation, including the influence of social milieu and institutional culture on values, the need to delineate relationships between excessive (or impoverished) prioritization of certain values and psychopathology, and the development of brief psychoeducational values-based interventions to improve psychological resilience on North American university campuses. At a micro level, the present work suggests that intrinsic aspirations benefit individual adaptation. On a macro level, promoting intrinsic aspirations may also provide sustenance for social and ecological well-being. Given our changing world, raising future generations of youth that value intrinsic aspirations of community contribution, close relationships, and personal growth could be an important aim of nations in order to shape world citizens capable of managing ongoing world problems, including unequal access to resources, natural disasters and displacement caused by climate change, and diminishing availability of fossil fuels. Overall, the present thesis

adds to the accumulating evidence that certain values may be more beneficial to human well-being than other values, with longitudinal data revealing a relationship between relative prioritization of intrinsic aspirations and improved well-being over time.

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