

Pathological narcissism and the social world: The impact of social factors on narcissism in Australia

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Declaration

I declare that this thesis is my own work, and that no part of this thesis has been presented for the award of any degree from another institution. Ideas that are not my own have been acknowledged and referenced. Chapters 1, 2, and 6 are my own work apart from the usual contributions of my supervisor Dr Boris Bizumic, and supervisory panel, Prof. Katherine Reynolds and Prof. Donald Byrne. Chapters 3, 4 and 5 are manuscripts which are published or under review of which I am first author. The research presented was conducted under the primary supervision of Dr Bizumic, and his contribution to the research is acknowledged in his co-authorship of each manuscript. Dr Bizumic contributed advice regarding study design and statistical analyses in addition to feedback on each drafted manuscript. I conducted all analyses and writing of each chapter. Where feedback was provided by individuals other than my supervisory panel, this is detailed in my acknowledgements and at the beginning of each chapter.

Elizabeth Anne Huxley

Boris Bizumic

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Dedication

To my father Chris, for always encouraging me to be curious and fostering a love of
research and ideas.

Abstract

Narcissism is a personality construct which influences how individuals relate to themselves and others in society. Characterized by a heightened sense of entitlement, grandiosity, self-focus, and a need for admiration, high levels of narcissism can impair function. Little is known about how narcissism develops, but past research indicates that narcissism may be influenced by social factors across the lifespan, including childhood experiences, social norms, social status, celebrity culture and social technology use. Previous research has focused on grandiose narcissism and used only limited cultural samples. The impact of social factors on narcissism in Australia is unknown, as is the relationship between social factors and vulnerable narcissism. This thesis builds on previous research by examining the relationship between social factors and grandiose and vulnerable narcissism in Australia across four studies.

Childhood experiences, such as cold or overly indulgent environments, have been associated with the development of narcissism. Invalidation, a common factor to both extremes, has not been examined in relation to narcissism. Study 1 used retrospective reporting in a sample of 442 Australian participants to examine the relationship between invalidating behavior from parents and narcissism. Results indicate recollections of invalidating behavior from either parent are associated with higher levels of both grandiose and vulnerable narcissism when controlling for previously examined parenting behaviors of rejection, coldness, and overprotection.

Narcissism has also been linked with broader social factors. Study 2 examined how narcissism subtypes associate with individualistic descriptive norms and attitudes, celebrity culture, and technology use in 471 Australian participants. Study 3 examined whether these social factors predicted changes in narcissism over six months in 207 participants. Grandiose and vulnerable narcissism were associated with different

patterns of social attitudes, norms and social technology use. These variables do not predict change in narcissism over a six-month period.

Finally, previous studies indicate that grandiose narcissism is positively associated with social status, and may be reduced by inducing egalitarian values. Study 4 examined the relationship between grandiose and vulnerable narcissism, entitlement attitudes and social dominance orientation (SDO), socioeconomic status (SES), and whether narcissism can be reduced by inducing egalitarian norms in a sample of 194 Australian university students. Contrary to our hypotheses, socioeconomic status was not associated with narcissism or entitlement. The findings indicate that the relationship between narcissism, social status and entitlement is more complex than previously thought.

Overall, these studies expand our understanding of narcissism and how social factors impact on its development and expression. The findings indicate that grandiose and vulnerable narcissism are associated with overlapping but distinct patterns of social factors across childhood and adulthood. In addition, although they are associated with different social attitudes, both subtypes appear to resist change over a six-month period and experimental manipulation. These studies collectively inform our understanding of how narcissism is associated with social factors in Australia. They deepen our understanding of pathological narcissism, and how this personality construct influences an individual's interactions with their social environment.

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Table of Contents

Declaration.....	2
Acknowledgements	4
Dedication	5
Abstract.....	6
List of Tables	11
List of Figures.....	12
Chapter 1: General Introduction.....	13
1. Examination of grandiose and vulnerable narcissism.....	14
2. Examination of Association and Change	16
3. Narcissism in Australia	17
Overview.....	17
Chapter 2: Social Factors and the Development of Narcissism.....	18
Historical Origins of Narcissism.....	18
Pathological Narcissism and Narcissistic Personality Disorder.....	19
Consequences of Narcissism.....	22
Social Factors and the Development of Narcissism.....	24
The Dynamic Self-Regulatory Processing Model	25
1. Development of Self: The impact of Childhood Experiences on Narcissism.....	27
2. The Self in the Social World: The Relationship between Narcissism, Social Norms, Groups, and Attitudes.	28
Individualism	29
Limitations in the examination of social norms and narcissism	32
Narcissism and group identification	34
Celebrity culture and narcissism	36
3. The Self in Relation to Others: The Role of Social Status in Narcissism.....	38
4. Tools of Self-Representation: Social Technology Use and Narcissism.....	40
Summary and Overview of Thesis.....	42
Chapter 3: Parental Invalidation and the Development of Narcissism.....	44
Foreword.....	44
Abstract.....	45

PATHOLOGICAL NARCISSISM AND THE SOCIAL WORLD	9
Parental Invalidation and the Development of Narcissism.....	46
Method.....	55
Results	58
Discussion.....	65
Chapter 4: The Impact of Individualism-Collectivism, Celebrity Culture, and Technology on Pathological Narcissism	71
Foreword.....	71
Abstract	73
The impact of individualism-collectivism, celebrity culture, and technology on pathological narcissism	74
Study 1.....	79
Method.....	79
Results	82
Discussion.....	86
Study 2.....	87
Method.....	87
Results	88
Discussion.....	96
General discussion.....	96
Chapter 5: Social Status, Entitlement, and Narcissism in an Australian Context	102
Foreword.....	102
Abstract	103
Social Status and Narcissism in an Australian Context.....	104
Method.....	110
Results	112
Discussion.....	116
Chapter 6: General Discussion.....	120
Grandiose and Vulnerable Narcissism and Social Factors	120
Demographics.....	121
Parenting.....	121
Social norms, attitudes, groups and identification.....	122
Celebrity attitudes.....	125
Technology use and anxiety	126
Change in Narcissism	127

PATHOLOGICAL NARCISSISM AND THE SOCIAL WORLD	10
Narcissism in Australia.....	130
Clinical Implications.....	131
Limitations of the Project and Suggestions for Future Research.....	133
Conclusion	137
References.....	139
Appendix A: Measures used in Chapters, 3, 4 and 5	174
Appendix B: Supplemental Analyses for Chapter 3	195
Appendix C: Supplemental Analyses for Chapter 4	197
Appendix C.1 - Exploratory factor analysis and parallel analysis for technology use and anxiety.....	197
Appendix C.2 – Study 2 Correlation Tables	199
Appendix C.3 – Invariance Testing for Narcissism and Social Factors.....	201
Appendix C.4 – Path Analysis and Structural Equation Models for Study 2	203
Appendix C.5 –Change Score Models.....	207
Appendix C.6 – Example Mplus Syntax for Change Score Model	211
Appendix D: Supplemental Analyses for Chapter 5	212

List of Tables

<i>Table 3.1: Zero-Order Correlations and Descriptive Statistics for Narcissism, Parenting Behavior Measures, Age, and Gender</i>	59
<i>Table 3.2: Results of Step 4 of a Hierarchical Regression Analysis of Age, Gender and Parenting Behaviors Predicting Vulnerable Narcissism</i>	60
<i>Table 3.3: Results of Step 4 of a Hierarchical Regression Analysis of Age, Gender and Parenting Behaviors Predicting Grandiose Narcissism</i>	63
<i>Table 4.1: Zero-Order Correlations and Descriptive Statistics for Narcissism, Social Factors, Age, and Gender</i>	83
<i>Table 4.2: Multiple Regression Analysis Predicting Grandiose Narcissism</i>	85
<i>Table 4.3: Multiple Regression Analysis Predicting Vulnerable Narcissism</i>	86
<i>Table 4.4: Correlations between Time 1 and Time 2 Social variables and Narcissism Subtypes</i>	90
<i>Table 4.5: Estimated Time 1 -> Time 2 Change and Residual Variance of Narcissism and Social Norms and Attitudes</i>	94
<i>Table 4.6: Association between Social Attitudes and Change Scores in Grandiose Narcissism and Vulnerable Narcissism</i>	95
<i>Table 5.1: Correlations and Descriptive Statistics for Measures of SES, Narcissism, SDO and Entitlement for Australians in Control and Prime Conditions</i>	113
<i>Table 5.2: Model Coefficients for the Moderated Mediation Models of SES Predicting Grandiose and Vulnerable Narcissism, with SDO and PES as Mediators and Moderated by Experimental Condition</i>	115

List of Figures

<i>Figure 3.1.</i> Vulnerable narcissism as a function of maternal and paternal invalidation..	
.....	61
<i>Figure 3.2.</i> Grandiose narcissism as a function of maternal and paternal invalidation.....	64
<i>Figure 4.1.</i> Cross-lagged model of grandiose narcissism, vertical and individualist attitudes, national norms, celebrity attitudes, technology anxiety, age and gender.....	91
<i>Figure 4.2.</i> Cross-lagged model of vulnerable narcissism, vertical collectivist attitudes, national norms, celebrity attitudes, technology anxiety, age and gender.....	92

Chapter 1: General Introduction

What makes one person more narcissistic than another? This question has generated ongoing interest for over 100 years in psychology and medical research. However, compared with other personality constructs there has been little empirical examination of the development of narcissism. Narcissism is a personality construct that influences how people see themselves and others in their relationships and broader society. It has a significant biological component (e.g., Coolidge, Thede, & Jang, 2001; Jang, Livesley, & Vernon, 1996), and has been linked with a variety of social factors. These range from broad influences of social norms (e.g., Foster, Campbell, & Twenge, 2003), to more specific social influences such as celebrity culture (Young & Pinsky, 2006), and relational factors including social technology use (e.g., Buffardi & Campbell, 2008) and parenting behaviors (e.g., Otway & Vignoles, 2006). The nature of the association between narcissism and social factors has sparked ongoing debate in academic and popular discourse but the discussion has been limited by a lack of empirical research and limited examination of different cultural contexts and narcissism subtypes. This thesis aims to expand on previous research by examining how social factors across the lifespan relate to narcissism in Australia.

The question of what makes a person more narcissistic has generated both academic and social interest. The role of social factors in promoting narcissism entered mainstream discussion during the 1970s, which Wolfe (1976) proclaimed as the “me decade”; a sentiment echoed by other writers including Lasch (1979). Collectively, they claimed that individualistic norms in American society promoted increased self-focus, leading to increased narcissism. Key social factors identified by Lasch (1979) and other researchers (e.g., Twenge & Campbell, 2010) as promoters of narcissistic behavior include individualism and celebrity attitudes, social status, parenting, and technology

use. These factors, and how they relate to narcissism in Australia, are focus of this thesis.

The role of social factors in shaping personality has been examined in many ways, including examinations of national character and cross-cultural examinations of key personality constructs (e.g., McCrae & Terracciano, 2005; Miller et al., 2015; Terracciano et al., 2005; Triandis & Gelfand, 1998). The dynamic interaction between a person and their environment is also well documented As Markus and Kitayama (2010) outline, there is a dynamic relationship between a person's cultural context, their sense of self, and how they relate to other people. Likewise, Alford highlights that "culture makes no sense if it is not part of me. But if it were only in me, culture would be no more than an illusion" (2005, p.32). Although environmental factors appear to interact with genetic vulnerabilities to lead to narcissistic expression (e.g., Livesley, Jang, Jackson, & Vernon, 1993), there has been limited empirical examination of what these factors are, and how they may influence narcissism in different cultural contexts.

Understanding how social factors relate to narcissism has implications for clinical settings. Within clinical settings, high levels of narcissism can lead to significant impairment and interpersonal difficulties (e.g., Jones & Paulhus, 2010; Pincus et al., 2009; Ritter et al., 2011). A greater understanding of narcissistic development would inform early intervention, clinical formulation and informing treatment interventions for individuals with high levels of narcissism. As such, this project aims to broaden our understanding of how narcissism is shaped by social factors in Australia in three key ways.

1. Examination of grandiose and vulnerable narcissism

Although widely examined, narcissism is defined in a large variety of ways with over 50 different conceptualizations (see Cain, Pincus, & Ansell, 2008), and Pincus and Roche identifying, "there may be as many definitions as there are theorists" (2011, p.

31). For the purposes of this thesis, narcissism is defined as “one’s capacity to maintain a relatively positive self-image through a variety of self-regulation, affect-regulation, and interpersonal processes, and it underlies individuals’ needs for validation and admiration, as well as the motivation to overtly and covertly seek out self-enhancement experiences from the social environment” (Pincus & Roche, 2011, p. 94). However, in contrast to Pincus and Roche (2011), we conceptualise narcissism as a dimensional personality construct, rather than distinguishing between “normal” and “pathological” narcissism. This is done to provide a broader and more inclusive definition of narcissism, which has often been absent in the research literature where social/personality and clinical researchers have often made this distinction based on population or measurement tool (e.g., Miller & Campbell, 2008).

Two distinct subtypes of narcissism are commonly identified – grandiose and vulnerable (e.g., Miller, Lynam, Hyatt, & Campbell, 2017). Grandiose narcissism refers to a constellation of behaviors such as demanding the admiration of others, a sense of superiority and entitlement, the exploitation of others, low empathy, and grandiose fantasies (e.g., of wealth, power, beauty). In other words, grandiose narcissism can be seen as the “maladaptive self-enhancement associated with pathological narcissism” (Pincus & Roche, 2011, p. 32). By contrast, vulnerable narcissism is associated with a drive to feel needed, feelings of helplessness, shame, and social avoidance when an individual believes that their need for admiration or inclusion will not be met (Hendin & Cheek, 1997; Pincus & Roche, 2011). These subtypes are overtly and covertly expressed in the form of thoughts, emotional responses and behaviors (Pincus & Lukowitsky, 2010; Pincus & Roche, 2011).

Research examining narcissism and social factors has focused on grandiose rather than vulnerable narcissism (e.g., Ashe, Maltby & McCutcheon, 2005; Buffardi & Campbell, 2008; Foster, et al., 2003; Horton, Bleau, & Drwecki, 2006; Piff, 2015).

Although measured as separate subtypes, both manifestations are strongly associated and exist within individuals, influencing behavior (e.g., Pincus & Lukowitsky, 2010). This thesis aims to expand on previous research by exploring both grandiose and vulnerable narcissism subtypes to understand whether similar or different patterns of social elements are associated with narcissism.

2. Examination of Association and Change

Many different elements of the social environment have been linked to narcissism but this thesis will focus on the core factors most frequently linked with narcissistic development: specifically, childhood experiences of parental behavior, social norms, celebrity attitudes, social status and social technology use. These factors have been chosen based on previous theoretical and empirical work (e.g., Lasch, 1979; Twenge & Campbell, 2010), and because they represent a spectrum of social influence--from broad social norms to specific social tools and preferences.

The relationship between social factors and narcissism is examined using a range of methods across four studies. This allows for the examination of association and change, which are both important for understanding the relationship between narcissism and social factors. Cross-sectional and retrospective reporting designs are used to examine how vulnerable and grandiose narcissism are associated with different social factors. Longitudinal and experimental designs are used to examine change and to better understand the nature of the relationship between narcissism and the social world. A longitudinal study of narcissism and social factors over a six-month period is used to study whether social factors predict narcissism over time, and an experimental design is used to examine whether reports of narcissism can be manipulated by priming egalitarian attitudes. By examining association and change we are able to explore not only how narcissism subtypes are associated with social factors, but the quality of these relationships.

3. Narcissism in Australia

Although there is increasing examination of narcissism in different cultures (e.g., Foster, et al., 2003), there has been little examination of narcissism in Australia, and much of the research explicitly examining narcissism and social factors has focused on North American samples (e.g., Campbell, Miller, & Buffardi, 2010; Roberts & Helson, 1997; Trzesniewski, Donnellan & Robins, 2008a, b; Twenge & Campbell, 2008). There are similarities between Australian and North American cultures, such as individualistic norms (e.g., Hofstede, 1980) but there are also significant differences, such as the way status in society is conceptualized (e.g., Triandis, 1995). Cultural differences may influence how narcissism develops and the social factors it is associated with. A better understanding of cultural differences also has implications for conceptualizing and treating narcissism. Therefore, this thesis aims to expand our understanding of factors that may influence the development of narcissism within the Australian context.

Overview

This thesis is comprised of six chapters. Following this overview, a review of key research literature and theory regarding the relationship between narcissism and social factors is provided (Chapter 2). This is followed by three chapters detailing research studies examining the core aspects of social environments related to narcissism: early childhood experiences (Chapter 3), social norms, celebrity attitudes and technology use (Chapter 4), and social status (Chapter 5). The thesis concludes with a discussion of the key findings and limitations of the studies, and research questions raised by the research (Chapter 6).

Chapter 2: Social Factors and the Development of Narcissism

Narcissism is a personality construct examined in both clinical and social-personality psychology research and, as an abstract term, narcissism is increasingly used in political and social commentary and everyday use. Despite considerable speculation, there has been comparatively little research into how social factors influence narcissism. This chapter provides an overview of pathological narcissism and the key social factors examined in this thesis: childhood experiences, social norms and celebrity attitudes, social status, and social technology use. First, an overview of narcissism within psychological research is provided, before an examination of the role of social factors in the development of narcissism, and an outline of how these are examined in the research studies of the thesis.

Historical Origins of Narcissism

Narcissism first appeared as a concept within psychological and medical texts in the late 1800s (e.g., Ellis, 1898), rising to prominence in the early 1900s in the influential writings of psychoanalysts such as Freud (1914/2012). The term originates in the classical Greek tale of Narcissus – a young man cursed to be infatuated with his reflection. Freud’s writings on narcissism in particular mark a significant step in the formulation of key psychodynamic theories, and his descriptions of the construct have guided much of the investigation of narcissism.

Freud put forward several ideas regarding the conceptualization of narcissism, which have led to confusion and debate (e.g., Ronningstam, 2011; Sandler, Person, & Fonagy, 2012). Freud conceptualized narcissism as the “libidinal cathexis of the ego” (1914/2012, p. 75) — in other words, an individual’s investment of meaning and value in themselves, or self-focus. Freud described two types of narcissism: primary and secondary. Primary narcissism refers to a personality construct which individuals have as children, in which they have a high level of self-focus. As children develop, they

begin to conceptualize themselves as being different from their environment, and invest meaning and values into objects within their environment rather than themselves.

Secondary narcissism, which is considered pathological, occurs as an individual “withdraws the libido from the external world” (1914/2012, p. 75) and overinvests emotionally and psychologically in the self, often demonstrated by feelings of grandiosity.

Building on Freud’s work, Kohut (1966) and Kernberg (1984) have influenced much of the current research on narcissism, each putting forward models that distinguish between normal and pathological forms of narcissism. The separation between normal and pathological levels of narcissism has continued. For example the categorical system employed by the current *Diagnostic and Statistical Manual (DSM-5;* American Psychiatric Association [APA], 2013) requires five or more criteria to meet the diagnostic cut off for narcissistic personality disorder, and a distinction is often made between clinical and social/personality psychological research into narcissism (e.g., Bender, 2012; Emmons, 1987).

Pathological Narcissism and Narcissistic Personality Disorder

Clinical research on narcissism primarily focuses on pathological narcissism and narcissistic personality disorder (NPD). Pathological narcissism refers to a pattern of maladaptive internal processes, beliefs, and interpersonal behaviors aimed at maintaining a positive sense of self through external means, such as demanding admiration from others (e.g., Pincus & Lukowitsky, 2010). These processes include “clinically important regulatory impairments that lead to self, emotional, and behavioral dysregulation in response to ego threats or self-enhancement failures” (Pincus, Cain, & Wright, 2014, p.440), and are measured by the Pathological Narcissism Inventory (Pincus et al., 2009). Studies indicate that pathological narcissism is a valid personality construct demonstrated in a range of cultural contexts (e.g., Jakšić et al., 2014; Wright,

Lukowitsky, Pincus, & Conroy, 2010; Yang et al., 2000). However, it is important to note that the word “pathological” has meant different things within narcissism research, referring to particular frameworks (e.g., Pincus & Lukowitsky, 2010), measures (Pincus et al., 2009), levels of severity (e.g., Miller, Lynam, Hyatt, & Campbell, 2017), and whether a clinical population is used. As such, we have endeavoured not to use this term where possible throughout the thesis to avoid confusion, and focused on the distinction between grandiose and vulnerable subtypes. Where pathological narcissism is used, it is used in reference to the Pathological Narcissism Inventory (PNI; Pincus et al., 2009).

NPD can be seen as a manifestation of high levels of narcissism. NPD is conceptualized within the DSM-5 as “a pervasive pattern of grandiosity (in fantasy and behavior), need for admiration, and lack of empathy, beginning by early adulthood and present in a variety of contexts” (APA, 2013, p.669). It is characterized by symptoms including a grandiose sense of self and fantasies, feeling entitled, low empathy, regarding oneself as special and unique, requiring excessive admiration, exploiting others, and envying others (APA, 2013). NPD has a high rate of comorbidity with other personality disorders, major depressive disorder, substance use disorders, and bipolar I disorder (e.g., Grant et al., 2008; Stinson et al., 2008; Zimmerman, Rothschild, & Chelminski, 2005).

The prevalence of NPD in community samples varies from 0 to 6.2% (e.g., Dhawan, Kunik, Oldham, & Coverdale, 2010; Torgersen, Kringlen, & Cramer, 2001); however, the majority of studies indicate prevalence is around 1%. The DSM-IV-TR (APA, 2000) reports prevalence rates of 2-16% in clinical samples. NPD diagnoses are more prevalent in males than females (e.g., Golomb, Fava, Abraham, & Rosenbaum, 1995); a pattern also reflected in grandiose narcissism scores in non-clinical samples (Grijalva et al., 2015).

The DSM-5 criteria for NPD, frequently used to conceptualize narcissism, have faced numerous criticisms. NPD diagnosis requires at least five of the nine criteria, which means that there are 256 different combinations of symptoms for what is thought of as a homogenous construct (South, Eaton, & Krueger, 2011). The conceptualization of NPD has also been criticized for not encapsulating all aspects of narcissism (e.g., Reynolds & Lejuez, 2011), as it focuses primarily on grandiose features, and does not capture important vulnerable aspects of narcissism. This is a prominent limitation as there is significant clinical utility in examining both grandiose and vulnerable aspects of pathological narcissism (e.g., Levy, 2012; Pincus & Lukowitsky, 2010).

Leading up to the release of the DSM-5 (2013), debate regarding the inclusion of NPD in the new DSM highlighted several gaps in knowledge regarding pathological narcissism (e.g., Pincus & Lukowitsky, 2010; Ronningstam, 2011). Alarcón and Sarabia (2012), for example, highlight that there is very little literature regarding the development, treatment or prevalence of NPD, compared with other disorders in the DSM-IV-TR (APA, 2000). There were also calls to move towards a dimensional approach to conceptualizing narcissism following research which indicates that narcissism exists on a continuum (Foster & Campbell, 2007; Widiger & Trull, 2007). As argued by Paris, for personality disorders such as NPD which “are defined by traits amplified to the point of dysfunction, one would not expect to find any clear separation between disorder and dimensions” (2012, p. 2). Using a dimensional approach to studying narcissism is beneficial for extending the understanding of narcissism across settings and levels of functioning (e.g., Widiger & Trull, 2007).

Narcissism appears to fluctuate naturally across the lifespan: high in young children, decreasing in middle childhood, and increasing again during adolescence (e.g., Roberts, Edmonds, & Grijalva, 2010; Wilson & Sibley, 2011). Researchers have argued that the rise in narcissism during adolescence may be because it plays an important role

in protecting an individual's sense of self as they develop an adult identity (Hill & Roberts, 2011). Narcissism then appears to decline after adolescence (e.g., Foster, Campbell, & Twenge, 2003). Higher levels of narcissism during adolescence have led some to caution that NPD should be diagnosed only from early adulthood onwards (e.g., Campbell & Baumeister, 2006). However, research indicates that symptoms associated with pathological narcissism and NPD are present prior to adulthood (e.g., Thomaes, Bushman, Stegge, & Olthof, 2008; Coolidge, Thede, & Jang, 2001) and are associated with lower reports of wellbeing in adolescents (Crawford, Cohen, Johnson, Sneed, & Brook, 2004).

Consequences of Narcissism

Narcissism is associated with difficulties in a wide array of relationships and social and occupational contexts. Higher levels of narcissism are associated with making a good first impression with others (e.g., Back, Schmukle, & Egloff, 2010), but are also associated with a range of interpersonal problems such as interpersonal exploitativeness and low empathy (e.g., Ritter et al., 2011), lower commitment in romantic relationships, and higher negative feelings following the end of a relationship (e.g., Campbell & Foster, 2002). High levels of narcissism in parents have been associated with poor outcomes for children such as child abuse (Wiehe, 2003) and poor outcomes in divorce and child custody arrangements (Cohen, 1998; Baum & Shnit, 2005) and parent-child therapy interventions (Espasa, 2004).

Narcissism can also affect occupational functioning, as it is associated with self-enhancement, including seeking out positions of power and leadership (e.g., Brunell et al., 2008). Certain aspects of narcissism, such as grandiose aspirations and charisma, are beneficial for leadership, but it is also associated with unethical behaviors in leadership positions (Rosenthal & Pittinsky, 2006). Narcissism is also associated with

counterproductive workplace behaviors including bullying, theft, sabotage, and wasting time/materials (e.g., Meier & Semmer, 2013; Penney & Spector, 2002).

High levels of narcissism are associated with anger and impulsivity. Narcissism is associated with aggression across the lifespan (e.g., Jones & Paulhus, 2010; Reijntjes et al., 2015; Warren et al., 2002; Washburn, McMahon, King, Reinecke, & Silver, 2004). Narcissism is associated with greater anger in situations that are perceived as threatening rather than neutral (e.g., Bettencourt, Talley, Benjamin, & Valentine, 2006; Lambe, Hamilton-Giachritsis, Garner, & Walker, 2016), which is thought to stem from trying to protect an overly positive or grandiose sense of self. Narcissism is also associated with a range of risk-taking behaviours (e.g., Fernández-Montalvo & Echeburúa, 2004) and impulsivity (e.g., Jones & Paulhus, 2011; Vazire & Funder, 2006). Grandiose narcissism is associated with fun- and sensation-seeking rather than a lack of inhibition or restraint (Miller et al., 2009; Foster, Shenese, & Goff, 2009), whereas there is some evidence to suggest that vulnerable narcissism is associated with risk taking (e.g., Krizan & Herlache, 2017) and impulsivity (e.g., Miller, 2010).

In clinical settings, narcissism poses a range of challenges. The interpersonal qualities of highly narcissistic individuals can pose particular issues for developing a therapeutic alliance and treatment, including countertransference (Gabbard, 2013; Kernberg, 1975) and difficulty managing boundaries (Luchner, 2013). Some evidence suggests that severity of narcissism may affect how difficult it is to change (Ronningstam, Gunderson, & Lyons, 1995). Using the Pathological Narcissism Inventory (PNI), Pincus et al. (2009) found different aspects of narcissism are associated with different patterns of service utilization. For example, grandiose fantasy and exploitativeness were positively associated with not attending scheduled therapy sessions, whereas contingent self-esteem and self-sacrificing self-enhancement facets were negatively associated (Pincus et al., 2009). An additional clinical consideration is

the association between narcissism and suicidal risk. Individuals with high levels of pathological narcissism and NPD may be at higher risk of suicide (e.g., Blasco-Fontecilla et al., 2009; Pincus et al., 2009). NPD is not associated with impulsive suicide attempts, but is associated with use of more lethal means, and attempts in the absence of depression (Blasco-Fontecilla et al., 2009; Links, Gould, & Ratnayake, 2003; Ronningstam & Maltzberger, 1998). Overall, these findings support that narcissism is an important personality construct which, at high levels, poses significant impairment for an individual's wellbeing and relationships with others.

Social Factors and the Development of Narcissism

The consequences of narcissism have been well researched, but less is known about its development (e.g., Miller & Campbell, 2010). Studies indicate that narcissism may have a significant genetic component (e.g., Coolidge et al., 2001; Jang, Livesley, Vernon, & Jackson, 1996) meaning that variance in narcissistic presentations may be, in part, biological. The development of narcissism is also associated with environmental factors. Early investigations focused on early childhood experiences (e.g., Kernberg, 1975; Millon, 1981); however, more recent explorations suggest that high levels of narcissism are associated with social and cultural factors throughout the lifespan including, childhood experiences, social norms, celebrity culture, social status and technology use (e.g., Twenge & Campbell, 2010).

Examination of social factors in the development of narcissism has primarily occurred in American samples (e.g., Twenge, Konrath, Foster, Campbell, & Bushman, 2008) and cultural commentary (e.g., Lasch, 1979; Wolfe, 1976). Focusing on America's shift in sociocultural values, Lasch defined a narcissistic society as "...a society that gives increasing prominence and encouragement to narcissistic traits..." (1979, p. xvii). He asserted that the rise in clinical presentation of narcissism is a reflection of society, as "modern capitalist society not only elevates narcissists to

prominence, it elicits and reinforces narcissistic traits in everyone” (p. 232). Lasch’s concerns that social factors are leading to higher levels of narcissism are echoed in Twenge and Campbell’s *The Narcissist Epidemic* (2010). Twenge and Campbell (2010) argue that the United States (U.S.) is “suffering from an epidemic of narcissism... [which] has spread to the culture as a whole, affecting both narcissistic and less self-centred people” (p. 2).

Although most examination of narcissism and social factors is relatively recent, the social component of narcissism is briefly mentioned by Freud (1914/2012). In his discussion of the ego ideal, Freud outlines that “in addition to its individual side, this ideal has a social side; it is also the common ideal of a family, a class or a nation” (1914/2012, p. 101), and suggests that this results in individuals high in narcissism being sensitive to their social context and rejection from others. The role of social factors in the development and expression of narcissism has also been incorporated into prominent models of narcissistic functioning, such as the dynamic self-regulatory processing model (Morf & Rhodewalt, 2001a, b; Morf, Torchetti, & Schürch, 2011).

The Dynamic Self-Regulatory Processing Model

The dynamic self-regulatory processing model (Morf & Rhodewalt, 2001a; Morf, et al., 2011) conceptualizes narcissism as a process of three interacting main parts: the mental construal system, the self-regulatory processes, and the social world. The system is thought to be driven by an individual’s motivation to be seen in a particular way by themselves and others. The mental construal system is responsible for the synthesis and perception of the world, and consists of cognitive, affective and motivational elements (Morf, et al., 2011). This part of the system includes the self-construal element, representing both the perceived self and ideal self, and the other-construal element, representing the way one perceives and evaluates others. Both of these elements overlap with self-regulatory processes. Self-regulatory processes

regulate how an individual sees themselves and their self-worth and can be deconstructed into intrapersonal processes which affect how an individual interprets events, memories, and interpersonal processes which modulate interpersonal interaction (Morf, et al., 2011). As outlined by Morf et al. (2011), these two processes constantly exchange information and operate together.

The social world, or the environment in which the individual exists, consists of the people an individual interacts with, and the norms, values and social context in which they operate (Morf, et al., 2011). Morf et al. (2011) highlight individualistic culture, values, life goals, and socioeconomic status and gender differences as important elements within the social world which may influence the way an individual perceives themselves and others. The inclusion of a social component in the dynamic self-regulatory processing model reflects a notable shift in the way narcissism is conceptualized. Early research on the development of narcissism focused on childhood experiences (e.g., Horney, 1939; Kernberg, 1975); however, the development of identity and self-concept does not only occur in childhood (e.g., Arnett, 2000). As such, it is necessary to examine the role of different aspects of the social environment in the development and expression of narcissistic behaviors and attitudes.

Many social factors have been associated with narcissism, including social roles (e.g., Hill & Roberts, 2011), goals (e.g., Kasser & Ryan, 1996), education programs (e.g., Twenge, Konrath, et al., 2008), relationships (e.g. Foster, Shrira & Campbell, 2006), the workforce (e.g. O'Boyle, Forsyth, Banks, & McDaniel, 2012), and empathy (e.g. Watson, Grisham, Trotter & Biderman, 1984). This project, however, focuses on the most prominent social factors associated with narcissism: parenting behaviors; social norms and celebrity culture; social status; and social technology use. What follows is an overview of the existing research on the most salient areas of social research into narcissism.

1. Development of Self: The impact of Childhood Experiences on Narcissism

Childhood environment and parental behavior have long been associated with the development of narcissism. This link is grounded in the psychodynamic tradition (e.g., Freud, 1914; Kernberg, 1975; Kohut, 1966); however, social learning (Millon, 1981) and diathesis-stress (Thomaes, Brummelman, Reijntjes, & Bushman, 2013) models have also been applied in trying to understand the role of different childhood experiences in the development of narcissism. Broadly, two environments have been recognized as increasing levels of narcissism: indulgent environments in which parents are excessive in their attention and praise of the child (e.g., Imbesi, 1999; Millon, 1981), and rejecting or cold environments, in which the child is not acknowledged by the parents, and experiences a lack of warmth, praise or recognition (e.g., Kernberg, 1975).

In an effort to understand the relationship between narcissism and parenting, psychological research has primarily used retrospective reporting methods (e.g., Horton, Bleau, & Drwecki, 2006; Horton & Tritch, 2014; Hui & Bao, 2014). One study that examined the relationship between cold parenting and overindulgence, is Otway and Vignole's (2006) study on the recollections of childhood and narcissism. They found that both parental coldness and over-evaluation were associated with higher grandiose narcissism, whereas anxiety and parental coldness were associated with higher vulnerable narcissism. Similarly, Horton, Bleau and Drwecki (2006) examined parental warmth, monitoring, and psychological control and found that narcissism was positively correlated with warmth, and negatively correlated with monitoring.

Longitudinal studies have provided further evidence that a child's interactions with their parents may significantly influence levels of narcissism. For example, Brummelman et al. (2015) found that grandiose narcissism in children was predicted by parental overvaluation rather than warmth. Using a longer longitudinal timeframe, Cramer (2011) assessed the role of parenting styles, and personality variables at age 3

years in the development of narcissism at age 23. The results indicate that parenting styles that were a poor fit for the child's period of development and did not meet the child's developmental needs were associated with maladaptive narcissism at age 23; however, this only occurred in interaction with the child's early personality (Cramer, 2011).

Despite differences in views on the mechanisms through which childhood experiences encourage or exacerbate narcissistic behaviors, and mixed findings, a common element is that children's needs are not met. As such, a factor that may be associated with narcissism is invalidation. As outlined by Linehan (1993), "an invalidating environment is one in which communication of private experiences is met by erratic, inappropriate, and extreme responses...the expression of private experiences is not validated; instead, it is often punished and/or trivialized" (p. 49). Childhood invalidation is associated with a number of constructs related to issues in self-concept and regulation, including eating disorders (Haslam, Mountford, Meyer, & Waller, 2008) and borderline personality symptoms (Robertson, Kimbrel, & Nelson-Gray, 2013). Childhood invalidation has been theorized to be associated with narcissism (e.g., A. Miller, 1997; Morf & Rhodewalt, 2001; Strauman, 2001); however, this has not yet been examined. If invalidation is associated with the development of narcissism, this could lead to greater integration of developmental models related to personality and self-regulation.

2. The Self in the Social World: The Relationship between Narcissism, Social Norms, Groups, and Attitudes

The role of social norms in the development of narcissism is a contentious issue, with mixed findings in both cross-cultural and longitudinal studies. A social norm is a "frame of reference" (Sherif, 1936, p. 106) consisting of the values, beliefs, behaviors and stereotypes associated with a society. Likewise, cultural norms are "a

coalescence of discrete behavioral norms and cognitions shared by individuals within some definable population that are distinct from those shared within other populations” (Lehman, Chiu & Schaller, 2004, p. 690). Although the terms social norms and cultural norms are both used in literature regarding narcissism and social factors we will refer to social norms as a term encapsulating both.

Individualism. Individualistic and collectivistic norms are a framework for conceptualizing broad differences between cultures (Hofstede, 1980; Triandis, 1988; 1995). Triandis (1995) identifies four key elements of individualistic and collectivistic societies: the way individuals conceptualize themselves, and their goals, motivations, and relationships. Individualism is typified by individuals who see themselves as unique and distinct from the group, who are motivated by their own needs, have goals that relate to themselves, and tend to relate to others based on rational concerns (e.g., Fischer et al., 2009; Triandis, 1995). Collectivism is typified by individuals who see themselves as group members, who are motivated by the needs of the group, have goals that relate to the group, and tend to relate to others based on relational concerns (e.g., Fischer et al., 2009; Triandis, 1995). Using these distinctions, North America, Australia and Europe are considered to be individualistic, whereas Asia and the Middle East are considered collectivistic (e.g., Foster, et al., 2003; Singelis, 1994). The definitions put forward by Triandis (1995) are not the only definitions of individualism and collectivism (e.g., Hofstede, 1980; Markus & Kitayama, 1991); however, they are widely used in this area of psychological research.

Different perspectives have been put forward regarding the role of social norms in the development of narcissism. For example, Lasch theorized that personality mirrored broader social norms: “every society reproduces its culture – its norms, its underlying assumptions, its modes of organizing experience – in the individual, in the form of personality” (1979, p. 34). However, Paris (1998) posits that the fast and

continual change of modern society, family unit breakdown, and a lack of social cohesion are factors in the increase of “externalizing” personality issues (i.e., antisocial, narcissistic, and borderline personality traits). Overall, these prominent commentaries argue that aspects of modern society, particularly individualistic norms, make it difficult for individuals to develop a sense of self and adaptive ways of relating to others, which manifests as narcissism. Studies examining the association between individualism and narcissism have primarily used cohort and cross-cultural samples.

Cohort Studies. Cohort studies have been used to examine trends in narcissism over time. In one of the first cohort studies of narcissism, Roberts and Helson (1997) used a secular trends index to examine the relationship between narcissism and individualism over time in the Mills Longitudinal Study and cross-sectional studies of students. Between 1958 and 1989, levels of narcissism and individualism increased across time, which they argue stemmed from cultural trends towards individualism in the 60s and 70s (Roberts & Helson, 1997). More recently, Twenge, Campbell and colleagues (e.g. Twenge & Campbell, 2008; Twenge, Konrath et al., 2008; Twenge, Campbell, & Gentile, 2011; Twenge, Campbell, & Freeman, 2012) have examined narcissism in the U.S. over time, sparking debate regarding generational increases in narcissism. In a cross-temporal meta-analysis of 85 studies, Twenge, Konrath et al. (2008) examined change in college students scores on the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988), a forced choice measure designed to examine grandiose narcissism. Their results indicate that since 1982, the average college student’s score on the NPI in the U.S. has risen by 0.33 SD (an average of 2 more items on the NPI) compared to thirty years ago.

The size of this increase has important implications for the idea of an “epidemic” of narcissism (see Twenge & Campbell, 2010), as it is unclear whether this change reflects meaningful behavioral and attitudinal changes over time. There have

been alternate explanations for the rise in narcissism: for example, Stewart and Bernhardt (2010) argue that the characteristics of universities and colleges may be responsible for the perceived increase in narcissism. Stewart and Bernhardt's results support the argument that narcissism is increasing, and that this may be due to universities accepting students "whose academic assets are lower and whose narcissistic tendencies are higher than [those] they enrolled two or more decades ago" (p. 596).

Although there is a substantial body of evidence indicating generational increases in narcissism, a growing body of research indicates that narcissism has not increased (see Trzesniewski, Donnellan & Robins, 2008a, b; Trzesniewski, Donnellan & Robins, 2009; Trzesniewski & Donnellan, 2010). In their study of college and high school students, Trzesniewski et al. (2008a) found no increase in narcissism or self-enhancement over the period studied. Using samples from the University of California and the Monitoring the Future Study (1980-2007, and 1976-2006 respectively), Trzesniewski et al. (2008a) found that although there was no significant increase in narcissism, the composition of narcissism changed slightly, with self-sufficiency increasing whereas superiority decreased. By combining the results of Twenge et al.'s (2008) meta-analysis with that of Donnellan et al. (2009), and additional studies, Roberts et al. found that there is "little or no trend" (2010, p. 99) of an increase in narcissism scores between the 1980s and 2009. More recently Wetzel, Brown, Hill, Chung, Robins, and Roberts (2017) study of cohorts across 1990s to 2010s indicates that when controlling for measurement invariance, there has been a small decrease in narcissism across time.

Outside of the "dueling datasets" (Ferguson, 2010, p. 1), Roberts et al. (2010) suggest examining developmental rather than generational change. They argue that to understand the development of narcissism it is important to look further afield than cultural influences on the development of personality. The role of self-focus and

narcissistic behavior is discussed in detail by Arnett (2000) who describes that adolescence and early adulthood are periods of identity development, and that self-focus is an important element of developing an adult self during this time.

Cross-Cultural Studies. Cross-cultural studies examining the association between social norms and narcissism in different countries have primarily focused on examining cultural norms in reference to American culture (e.g. Campbell, Miller, & Buffardi, 2010; Miller et al., 2015). Foster et al. (2003) found narcissism was higher in individualistic countries compared to collectivist countries. There are some indications that within cultures, a variety of factors including individualistic attitudes are associated with narcissism. For example, in China, a country generally associated with collectivist norms, Cai, Kwan and Sedikedes (2012) found that grandiose narcissism was higher in individuals who were only children, urban, from higher socioeconomic groups, younger, and had more individualistic attitudes.

A limitation of research into narcissism and social norms is that the majority of research focuses on grandiose narcissism, whereas research examining vulnerable narcissism is very limited. A notable exception is Zondag, Van Halen, and Wojtkowiak (2009), whose cross-cultural study of Poland and the Netherlands found that there was no difference in grandiose narcissism levels between the two countries; however, vulnerable narcissism was significantly higher in Poland, which is considered a collectivist country. To date, the relationship between social norms and narcissism has not been examined in Australia.

Limitations in the examination of social norms and narcissism. There are three key limitations to the examination of narcissism and social norms. First, much of the research examining individualism and narcissism, does not explicitly measure social norms (e.g. Twenge & Campbell, 2010; Twenge, 2011). For example, after discussing the role of individualism and the mutual constitution model, Twenge and Foster (2010)

assess the increase of narcissism and then posit the role of social factors in this change. In addition, several studies infer individualistic or collectivistic norms based on the location of sampling, where participants are grouped together at country- or region-level (see Foster, Campbell & Twenge, 2003; Zondag et al, 2009) which may not accurately capture the norms of the sample.

Second, there are a number of conceptual confusions within the literature. Narcissism and individualism are at times conflated. For example, descriptions such as “individualistic personality traits such as narcissism” (Twenge, Campbell & Freeman, p. 1047), and questions such as “... has young Americans’ individualism recently crossed the line into narcissism?” (Twenge & Foster, 2008, p. 1619). As self-focus is only one aspect of narcissism, this confusion may lead to the neglect of other aspects of narcissism in the examination of narcissism and social factors.

Although the aim of commonly used individualism/collectivism scales (e.g., Triandis & Gelfand, 1998; Sivadas, Bruvold, & Nelson, 2008) is to measure social norms, as outlined by Fischer et al. (2009), these measure personal preferences and attitudes rather than how “individuals relate to their in-group within their culture” (p. 189). In other words, these scales assess what is important to the individual, but not necessarily what is important to their cultural or social groups. The high degree of correlation between grandiose narcissism and vertical individualism (see for example Le, 2005) may be due to conceptual overlap in the measures. As highlighted by Fischer et al. (2009), vertical individualism focuses on “achievement and competition” (p. 201). This is not salient in the definition proposed by Triandis (1995), and is measured as a component of narcissism in some scales (e.g. the NPI item “I will never be satisfied until I get all that I deserve”, Raskin & Terry, 1988).

Finally, there is little examination of the impact of social norms such as individualism on narcissism within an individual across time. Although the majority of

studies examining narcissism and social norms are correlational in design, and cannot provide information regarding causal relationships, causal links are often inferred (see Le, 2005; Roberts & Helson, 1997). However, the most prominent models of culture, such as that put forward by Markus and Kitayama (1991, 1994), outline that culture and individuals influence one another. As highlighted by Kitayama, Karasawa and Mesquita, "... both self and emotion are interdependent with cultures, practices and meanings" (2004, p. 252). Using this conceptualization of culture, if individualistic social norms were to increase levels of narcissism in line with the argument put forward by Twenge and Campbell (2010), one would also expect an individual's level of narcissism to affect how that individual interacted and identified with the social norms and groups within that society (see Bizumic & Duckitt, 2008). As examining group norms and identification, in addition to broad attitudes may strengthen our understanding of the relationship between narcissism and social norms.

Although narcissism is associated with individualism at a cross-cultural level, research has not examined the relationship between narcissism and the individualism of groups within these broad societal groupings such as family or friendship groups. As discussed by Paris, "social structures increase or decrease risks for psychopathology through their mediating effects on family functioning" (1998, p. 296). Paris also highlights that social learning outside of the family and home environment reinforces (or undermines) the values and social approaches provided by the family. This may mean that groups important to an individual outside of their family system may also influence their development.

Narcissism and group identification. A new avenue for exploration in order to further understand narcissism and social interactions is analyzing the development, integration and use of group identities and how these relate to narcissism. There is a growing research interest in role adoption and the decrease of narcissism. For example,

social investment theory (Hill & Roberts, 2011) outlines that adult roles consist of social investment - communal traits and behaviors such as volunteer roles, and investing in social relationships such as family or work. The adoption of social roles overlaps with the concept of goals and values (Roberts & Robins, 2000), and can be conceptualized as forms of social identity.

It is possible that narcissism increases during adolescence due to the developmental pressures of this period, as adolescents begin to consolidate their identities (e.g., Arnett, 2010). As consolidation occurs, and individuals begin to adopt the mature roles outlined by their social context, narcissism decreases. An important function of identity is to “connect the individual to the social environment” (Saari, 1993, p. 15). Given that pathological narcissism is associated with deficits in self-regulation which can impair an individual’s ability to connect with others, examination of how an individual connects with social groups is important for understanding the relationship between narcissism and social factors.

The social identity approach is yet to be applied to the study of narcissism and social factors. Combining social identity theory (e.g. Tajfel & Turner, 1979) and self-categorization theory (e.g. Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), there are several aspects of this approach which may benefit the study of narcissism. At the core of all theories and conceptualizations of narcissism is the concept of the self, and how individuals perceive and interact with others (e.g., Morf & Rhodewalt, 2001a). Self-categorization theory conceptualizes the self as a combination of processes, rather than as a static construct within an individual (Turner et al. 1987). Put simply, self-concept is modelled as a continuum: at one end, the person as an individual, at the other, the person as a group member (Turner & Reynolds, 2012). As discussed by Turner and Reynolds, this continuum can be seen as “...levels of self-categorization where people can define or categorize themselves at different levels of abstraction” (2012, p. 403).

High levels of narcissism may impair an individual's ability to move between different levels of abstraction on the continuum, or to consider themselves as part of a group. Rigidity in thinking and behavior has often been noted in narcissism research (e.g., Kets de Vries & Miller, 1985), and may reflect a deficit in identity integration, which has implications for the acquisition of norms. As outlined by Fischer (2009), a key aspect of social norms is that they occur in reference to a group, and may differ between groups within a society. In addition, groups with which people identify are likely to influence people's acquisition of group norms (e.g., Livingstone, Haslam, Postmes, & Jetten, 2011). As such, looking at an individual's group identification is important for examining the association between narcissism and social norms.

Celebrity culture and narcissism. In addition to broad social norms like individualism, celebrity culture has also associated with higher narcissism (e.g., Young & Pinsky, 2006; Ferris, 2010; Twenge & Campbell, 2010). Defining the term, celebrity can be difficult. For some, celebrity and fame refer to holding a high level of social influence or having others know who you are. Braudy (1986/1997) identifies celebrity as being a short term of renown, or "fame without history" (p. 599), whereas fame is long lasting. Daniel Boorstin's well known definition of celebrity as "a person who is known for his well-knownness" (1962 p. 53). At its most simple, however, "celebrities are individuals who have achieved a level of fame that makes them well known in society" (Young & Pinsky, 2009 p. 464).

Commentary on the appeal of celebrity culture and its association with narcissism has largely focused on the concept of grandiose fantasy. For example, Braudy identifies that "the dream of fame in Western society has been inseparable from the ideal of personal freedom. As the world grows more complex, fame promises a liberation from powerless anonymity" (Braudy 1986/1997, p. 7). Similarly, Lasch suggests that celebrity feeds "...the fantasy of narcissistic success, which consists of

nothing more substantial than a wish to be vastly admired, not for one's accomplishments but simply for oneself, uncritically and without reservation" (1979, p. 232). This is consistent with conceptualizations of narcissism as a construct which tries to protect the self through maintaining independence and seeking admiration and recognition. The media is also implicated in commentators discussions of narcissism and celebrity. For example, Twenge and Campbell (2010) identify celebrities and related media coverage as "super-spreaders" of narcissism – and significant factors in the promotion of self-focused behaviors in society.

Several mechanisms have been hypothesized for why individuals develop an increased interest in celebrities. Ashe et al. (2005) outlines an absorption-addiction model of celebrity worship in which people may be interested in celebrities for entertainment or social reasons; however, this can escalate and become problematic and addictive for some individuals. Gibson, Hawkins, Redker, and Bushman (2016) found that exposure to narcissistic reality TV programs was associated with higher levels of narcissism in participants if they were engaged with the program. In contrast, Greenberg, Kosloff, Solomon, Cohen, and Landau, (2010) apply a terror management model perspective, noting that reminders of mortality and death increases peoples drive towards wanting to be famous.

Perhaps the best-known study of celebrity and narcissism, Young and Pinsky (2006) found that, compared to university students and samples from general population, celebrities were more narcissistic, with females being more narcissistic than males. Years of experience were not significantly related to level of narcissism, suggesting that, in line with Lasch's (1979) observations, individuals with higher levels of narcissism enter the entertainment industry (as opposed to the industry promoting higher levels of narcissism; Young & Pinsky, 2006). Little research has been done on the association between celebrity culture and narcissism, although there is some

evidence to suggest that narcissism is higher in individuals who aspire to be like or follow news about celebrities (e.g., McCutcheon, Lange, & Houran, 2002; Maltby, Houran, & McCutcheon, 2003). Ashe, Maltby and McCutcheon (2005) found that problematic celebrity worship behaviors were positively associated with grandiose narcissism, and this was significantly stronger in their UK sample compared to the U.S. sample, indicating that the relationship between narcissism and celebrity may differ across cultures. The association between narcissism and celebrity attitudes in Australia is unknown.

3. The Self in Relation to Others: The Role of Social Status in Narcissism

Research examining the association between narcissism and status has primarily focused on behavior associated with narcissism, such as wanting to occupy positions of power (Deluga, 1997; Paunonen, Lönnqvist, Verkasalo, Leikas, & Nissinen, 2006), and seeing oneself as special and superior to others (e.g., APA, 2013). Grandiose narcissism is associated with a range of status-seeking behaviors and attitudes, such as a sense of entitlement (e.g., Emmons, 1987), pursuing power and leadership (e.g., de Vries & Miller, 1985; Grijalva, Harms, Newman, Gaddis, & Fraley, 2014), and culture-bound displays of status such as displaying material wealth (Twenge & Campbell, 2010). In addition, grandiose narcissism has been associated with endorsing hierarchy if there is a possibility for upward movement within the hierarchy (Zitek & Jordan, 2016).

Narcissism is associated with a range of status-related attitudes including entitlement and social dominance orientation (SDO; Hodson, Hogg, & MacInnis, 2009; Piff, 2015; Zitek & Jordan, 2016) and supporting hierarchies that allow highly narcissistic individuals to obtain power (Zitek & Jordan, 2016). Narcissism also appears to be associated with higher levels of socioeconomic status (SES). This association has been demonstrated in U.S. (e.g., Belmi & Laurin, 2016; Zitek & Jordan, 2016) and Chinese samples (e.g., Cai et al., 2012); however, it has not been examined in an

Australian sample.

Different cultures display different relationships between class and values (e.g., Grossmann & Varnum, 2010), and as such, findings from other cultures may not necessarily apply to Australia. An element which may influence this is social norms regarding status. A common framework is to distinguish between horizontal and vertical orientations of social equality or status in different cultures (e.g., Singelis, Triandis, Bhawuk, & Gelfand, 1995). This conceptualization of social status is usually nested within the social norms of individualism and collectivism—the independence or interdependence of the group members' sense of self, values, and motivations (e.g., Oyserman, 2006). Within vertically individualistic cultures, such as the US, status is associated with individual achievement and material wealth – factors also associated with narcissism (e.g., Twenge & Campbell, 2010). Within horizontally individualistic cultures, such as Australia, equality is emphasized, with overt displays of status discouraged in favor of distinctiveness and self-reliance (Shavitt, Lalwani, Zhang, & Torelli, 2006; Singelis et al., 1995; Triandis & Gelfand, 1998).

SES is often included with personality variables such as narcissism as independent or covariate variables in psychological research (e.g., Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007); however, there is limited research explicitly examining the relationship between the two variables. An exception to this is Piff (2015) who closely examined the relationship between narcissism and SES. Over a series of studies, Piff (2015) found that, in U.S. samples, grandiose narcissism was positively correlated with SES, entitlement attitudes mediated the relationship between SES and narcissism, and self-reported narcissism was significantly lower in high-SES individuals who were exposed to an egalitarian values priming condition compared to those in a control condition. These findings indicate that not only is narcissism associated with SES, but that narcissism may be altered by priming communal attitudes,

which has been demonstrated in several other studies (e.g., Finkel et al., 2009; Giacomini & Jordan, 2014). Examination of social status and narcissism in Australia is important to understand how this relationship may transfer to a horizontal individualistic context and whether reports of narcissism can be altered by priming egalitarian norms.

4. Tools of Self-Representation: Social Technology Use and Narcissism

There is ongoing debate on how technology use influences the development of adolescent personality and concept of self, particularly in relation to the development of narcissism (e.g., Kelsey, 2007; Goodstein, 2007; Twenge, 2017). Elements of social technology may be used by people higher in narcissism to try to meet their needs (Turkle, 2011). For example, posting statuses, tweets and pictures may be used by some as a way of trying to manage contingent self-esteem, or as a means of self-enhancing, or eliciting attention and admiration from others. Although social networking sites such as Facebook and Twitter, have been the focus of recent studies (Anderson, Fagan, Woodnutt, & Chamorro-Premuzic, 2012), analysis of the relationship between technology use and narcissism is not new. For example, Lasch bemoaned the narcissistic use of photography which enabled “ceaseless self-scrutiny” (1979, p. 48), and that the normalization of recording devices had caused people to modify their behavior.

The relationship between social technology use and narcissism is unclear. Some have speculated that the use of social technologies in particular may increase people’s levels of narcissism by promoting self-focus (e.g., Twenge & Campbell, 2010). However, others argue that social media, rather than spreading narcissism, is a tool that may just reflect the levels of narcissism already present in individuals (Turkle, 2011). Whereas Lasch speculated that pathology within a cultural context expresses “in exaggerated form its underlying character structure” (1979, p. 41), Turkle ventures that

it reflects symptoms promoted by context which, in the case of contemporary western society, include “abandonment and isolation” (2011, p. 178). Turkle (2011) suggests that the narcissistic use of technology is in response to these factors and that technology does not cause an increase of narcissism. Instead, it makes the pattern of narcissistic behavior “easy” – texting and messaging allow for control over interactions with others. In other words, technology may create affordances for the pre-existing behavior.

Examination of social networking use and personality has indicated narcissism may shape peoples engagement with social technology. Ryan and Xenos (2011) found that Facebook users were more narcissistic than non-users, which they argued supports “the proposition that Facebook is particularly appealing for narcissistic and exhibitionistic people” (2011, p. 1663). However, given the correlational nature of this research, it is unclear whether this finding is the result of self-selection in choosing to have a Facebook profile, or whether this develops with use, and is a reflection on the norms governing Facebook. Bergman, Fearington, Davenport, and Bergman (2011) found no association between narcissism and amount of time spent using Facebook, however high narcissism was associated with trying to acquire large numbers of friends, and having others know about their lives and activities. Similarly, Toma and Hancock (2013) found that Facebook seems to serve as an important function in affirming self-worth in people with higher narcissism, especially after a perceived ego threat.

Studies examining Facebook use and narcissism seem to indicate higher levels of grandiose narcissism are associated with a range of behaviors. This has included greater use of Facebook (Mehdizadeh, 2010), more self-promoting material on one’s profile, particularly photos of the self (Mendelson & Papacharissi, 2010), and being perceived as being high on measures of agency and narcissism by others viewing their profiles (Buffardi & Campbell, 2008). Carpenter (2012) found that different aspects of narcissism were associated with different behaviors, with grandiose exhibitionism

associated with self-promoting behaviors such as self-promotion and higher numbers of Facebook friends, whereas exploitativeness was associated with more antisocial behaviors such as retaliating against other's comments.

In addition to self-promoting behaviors, social networking sites have also been associated with wellbeing. For example, Facebook predicts a significant amount of variance in subjective wellbeing amongst people with high social anxiety, which indicates that Facebook plays a role in boosting sense of self in relation to others and engaging with others (Indian & Grieve, 2014). Perhaps one of the most salient studies to look at technology use and mental health, Rosen, Whaling, Rab, Carrier, & Cheever (2013) examined the association between technology use, mood and personality disorder symptoms, and anxiety regarding technology. They found that narcissism (as measured by the Millon Clinical Multiaxial Assessment; Millon, 1997) was significantly associated with higher Facebook usage and anxiety if not able to check Facebook.

It is notable that although there has been a surge of interest in examining narcissism and social networking sites, there has been little examination of narcissism and social technology use outside of social networking platforms such as Facebook and Twitter. By looking more broadly at social technology use (such as emailing, text messaging etc.), we may be able to examine whether narcissism is associated with social technology use and reaching out to others more generally. This may inform our understanding of the function social technology plays for individuals with high levels of narcissism.

Summary and Overview of Thesis

This thesis aims to examine how prominent social factors are associated with grandiose and vulnerable narcissism in Australia. Many social elements have been associated with the development of narcissism but the following empirical chapters

focus on the main social factors linked to narcissism across the lifespan: childhood experiences, individualism and celebrity culture, social status, and social technology use. These factors capture fundamental aspects of the social environment. Early social factors present when individuals are developing a sense of self help us to understand the initial development of narcissism. Social norms and attitudes towards sub-cultures, such as celebrity culture, help us to understand narcissism in the context of the social environment we exist in as adults, and examining social status allows us to explore how narcissism may be related to how we perceive our place within the social world. Social technology is a tool which can shape, in part, how individuals interact with the social world and shape other's perceptions, all elements important to narcissism, and important to understanding how narcissism may develop and be expressed.

As outlined in this chapter, there are a number of limitations to previous research on narcissism and social factors. Prior research has focused on grandiose narcissism, and we know little about how vulnerable narcissism is associated with social factors. There has been limited diversity in samples used to explicitly examine narcissism and social norms, status, and attitudes. To date, the relationship between narcissism and social factors has not been examined in Australian samples, and social factors associated with narcissism in other cultures may not apply to the Australian context. It is also unclear whether social factors predict narcissism within individuals over time. The research detailed in this thesis aims to address these limitations by examining both grandiose and vulnerable subtypes of narcissism, using Australian participants, and a variety of methodological approaches. Four studies over three empirical chapters are used to examine narcissism and social factors. A brief overview of the key research questions and methodology is detailed at the start of each chapter.

Chapter 3: Parental Invalidation and the Development of Narcissism

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Foreword

A range of parental behaviors in childhood are associated with the development of narcissism across clinical and subclinical samples. These have often focused on extremes in childhood environments such as rejection or overindulgence (e.g., Horton, et al., 2006; Otway & Vignoles, 2006). Common to both of these extremes is invalidation, the dismissal or rejection of a child's inner experience (Linehan, 1993); however, invalidation has not been examined in relation to narcissism. In line with the aims of this thesis, the following chapter describes a study using retrospective reporting to examine whether childhood invalidation is associated with grandiose and vulnerable narcissism. It examines whether this occurs when controlling for other parental behaviors often associated with narcissism – rejection, coldness, and overprotection – and whether the invalidating behavior of parents interacts to influence each narcissism subtype.

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Abstract

Parenting behaviors and childhood experiences have played a central role in theoretical approaches to the etiology of narcissism. Research has suggested an association between parenting and narcissism; however, it has been limited in its examination of different narcissism subtypes and individual differences in parenting behaviors. This study investigates the influence of perceptions of parental invalidation, an important aspect of parenting behavior theoretically associated with narcissism. Correlational and hierarchical regression analyses were conducted using a sample of 442 Australian participants to examine the relationship between invalidating behavior from mothers and fathers, and grandiose and vulnerable narcissism. Results indicate that stronger recollections of invalidating behavior from either mothers or fathers are associated with higher levels of grandiose and vulnerable narcissism when controlling for age, gender, and the related parenting behaviors of rejection, coldness, and overprotection. The lowest levels of narcissism were found in individuals who reported low levels of invalidation in both parents. These findings support the idea that parental invalidation is associated with narcissism.

Keywords: Narcissism, parent–child relations, parenting, personality

Parental Invalidation and the Development of Narcissism

Childhood experiences play an important role in the development of narcissism, a complex dimensional personality construct involved in maintaining positive self-image through the pursuit of validating and self-enhancing experiences (Horton, 2011; Pincus et al., 2009). Research and theoretical approaches examining narcissism and childhood experiences have focused on parenting factors and extremes in childhood environments: indulgent parenting, where parents display excessive attention and praise of the child (e.g., Millon, 1981), or cold parenting, where the child experiences a lack of praise, warmth, or recognition (e.g., Kernberg, 1975). An aspect of parenting which is yet to be examined empirically in relation to narcissism is invalidation – the act of denying or rejecting an individual's inner experience, particularly their emotions and thoughts (e.g., Linehan, 1993). Given the importance of cognitive and emotional information in developing and maintaining a sense of self, invalidation may be an important factor in the development of narcissism (e.g., Strauman, 2001). This research examines invalidation as a construct distinct from, but similar to, previously assessed parenting behaviors that may predispose people to grandiose and vulnerable narcissism.

Narcissism

Examining the development of narcissism has been complicated by different approaches to its measurement. As outlined by Cain, Pincus, and Ansell (2008), many approaches to conceptualizing and defining narcissism exist in both clinical and social-personality research. Narcissism is often measured in subclinical populations as a dimensional personality trait comprised of grandiose and vulnerable subtypes (e.g., Cain et al., 2008; J. D. Miller et al., 2011; Thomaes, Bushman, Orobio De Castro, & Stegge, 2009) or as a categorical construct in clinical populations in the form of Narcissistic Personality Disorder (American Psychiatric Association, 2013).

Nevertheless, narcissism is a dimensional personality construct spanning normative and

clinical presentations (e.g., Foster & Campbell, 2007). Grandiose narcissism refers to a constellation of behaviors such as demanding admiration from others, superiority and entitlement, exploitation of others, low empathy, and grandiose fantasies (e.g., J. D. Miller et al., 2011; Pincus & Roche, 2011). On the other hand, vulnerable narcissism refers to a drive to feel needed, feelings of helplessness and shame, and social avoidance when a person believes their need for admiration or inclusion will not be met (e.g., Pincus & Lukowitsky, 2010). Vulnerable and grandiose narcissism differ in their patterns of behavior and interpersonal outcomes (e.g., J. D. Miller et al., 2011; Rohmann, Neumann, Herner, & Bierhoff, 2015), and they may also have different developmental profiles (Mechanic & Barry, 2015). As such, examining both subtypes separately provides a better understanding of narcissism overall.

Development of Narcissism

Theories regarding narcissistic development have primarily focused on narcissistic behaviors resulting from disruptions in the development and regulation of the self (e.g., Ronningstam, 2011). This is reflected in influential models for conceptualizing narcissistic symptoms, such as the dynamic self-regulatory processing model (Morf & Rhodewalt, 2001b; Morf, Torchetti, & Schürch, 2011). Theories regarding parenting and the development of narcissism have primarily been derived from the psychodynamic tradition (see Ronningstam, 2011, for a discussion); however, social learning theory (e.g., Millon, 1981) and diathesis-stress models (e.g., Thomaes, Brummelman, Reijntjes, & Bushman, 2013) have also been proposed.

Psychodynamic theorists have posited a range of parent-child processes that may lead to the development of narcissism. Freud (1914/2012) hypothesized that parental overvaluation and indulgence could lead to greater levels of narcissism in children, and that children offered the chance for parents to achieve goals that the parents were unable to achieve otherwise, making the children extensions of parental

narcissism. Horney (1939) claimed that adherence to parents' rigid expectations may encourage individuals to be reliant on the admiration of others, and that narcissistic behaviors evolve as a coping mechanism for a lack of internal self. In his analysis of pathological narcissism, Kernberg (1975, 1984) described narcissism developing as a reaction to rejecting, cold, and strict childhood environments. In contrast to this, Kohut (1966) identified that higher levels of narcissism stemmed from rejecting behaviors from parents and constant praise and admiration, as both extremes impaired the development of an independent self.

Social learning theorists emphasize the role of reinforcement, conditioning and modelling in shaping behavior. As such, Millon (1981) proposed that indulgent environments may increase narcissism, with children learning narcissistic characteristics, such as a sense of superiority and entitlement, based on how others treat them. This may become a guide for how they see themselves and expect others to treat them in the future (e.g., Imbesi, 1999). Another approach to understanding the development of narcissism is the diathesis–stress model. As discussed by Thomaes et al. (2013), this model conceptualizes narcissism as developing out of the interactions between social experiences (such as parenting behaviors and life events), and the biological predispositions and temperament of an individual. For example, Thomaes et al. (2009) argue that an environment which provides high levels of praise may influence an individual with high approach temperament to become overly focused on external admiration, and lead to an increase in narcissism.

Research into Parental Influences on Narcissism

Although the theoretical examination of narcissism has a long history in psychology, the empirical examination of factors contributing to the development of narcissism is relatively recent (e.g., Horton, 2011; Otway & Vignoles, 2006). Research to date has predominantly used retrospective self–report measures and focused on

parenting behaviors (e.g., Horton, Bleau, & Drwecki, 2006; Horton & Tritch, 2014; Hui & Bao, 2014; Lyons, Morgan, Thomas, & Al Hashmi, 2013; Mechanic & Barry, 2015; Otway & Vignoles, 2006), such as warmth (or a lack thereof in the form of parental coldness), overvaluation, rejection, monitoring, and control (see Horton, 2011).

Warmth and associated factors. Parental warmth and coldness can be seen as a unidimensional spectrum of behaviors indicating affection and emotional support or connection. Two related but distinct constructs are frequently associated with the different ends of this spectrum in research examining the development of narcissism. Overvaluation, which is associated with warmth, occurs when a parent's admiration becomes excessive (e.g., Brummelman et al., 2015), and rejection, which is associated with coldness, refers to behaviors that belittle, exclude, are highly critical of, or ignore a child (e.g., Otway & Vignoles, 2006).

Findings for the association of narcissism with recollections of parental warmth and overvaluation have been mixed. For example, in adult samples, warmth was found to be positively associated with grandiose narcissism (e.g., Horton et al., 2006; Mechanic & Barry, 2015); on the other hand, overvaluation has mixed associations with narcissism, with Otway and Vignoles (2006) finding a positive association, and Horton and Tritch (2014) finding no significant association. However, in their longitudinal study of children, Brummelman et al. (2015) found that overvaluation rather than warmth predicted grandiose narcissism. There may be different associations for the facets that make up grandiose narcissism and recollections of warmth from different parents. Watson, Hickman, Morris, Milliron, and Whiting (1995) found that paternal warmth (referred to as nurturance) was positively associated with the leadership facet of grandiose narcissism (when controlling for the facet of exploitativeness), and negatively associated with exploitativeness (when controlling for the other facets of narcissism); however, maternal warmth was positively associated with the self-absorption facet

when controlling for exploitativeness. In sum, although warmth and overvaluation have been theoretically linked with narcissism, and supported by certain studies (e.g., Brummelman et al., 2015; Otway & Vignoles, 2006), this has been inconsistent (Horton & Tritch, 2014).

Focusing on the other end of the warmth spectrum, Otway and Vignoles (2006) found that coldness and rejection were positively associated with grandiose and vulnerable narcissism. Several other studies support this association (e.g., Hui & Bao, 2014; Lyons et al., 2013; Otway & Vignoles, 2006); however, Horton and Tritch (2014) found a negative relationship between narcissism and recollections of parental coldness and narcissism using Otway and Vignoles's measures. Coldness and rejection are often combined or treated synonymously – for example, the item content of Otway and Vignoles's coldness scale examines both cold (e.g., "...I often felt my parents were "cold" toward me," p. 108) and rejecting behaviors (e.g., the reverse-scored item "I never felt rejected by my parents," p. 108). Though related, parental coldness and rejection are distinct concepts and do not always present together. For example, a parent may engage with a child but show little affection or emotional warmth, or they may emotionally connect with a child, but exclude them or be highly critical. This is reflected in the structure of parenting measures that separate parental warmth and coldness from rejecting behaviors (e.g., the Swedish measure, *Egna Minnen Beträffande Uppfostran* [EMBU; My Memories of Upbringing]; Perris, Jacobsson, Lindstrom, von Knorring, & Perris, 1980).

Control and monitoring factors. Control, monitoring, and over-involvement can be seen as aspects of several theoretical models of narcissistic development. In their study of parenting behavior, Horton et al. (2006) identified psychological control as positively associated with grandiose narcissism. Findings were mixed for parental monitoring, as it was only significantly associated with grandiose narcissism in one of

the two samples studied (Horton et al., 2006). Using the same measures as Horton et al. (2006), Horton and Tritch (2014) found that psychological control positively predicted grandiose narcissism, whereas monitoring did not. In a study of adolescents, Mechanic and Barry (2015) found that poor parental monitoring predicted both grandiose and vulnerable narcissism.

There is evidence to suggest that the fit between developmental needs and parental behaviors may be important for the development of narcissism. For example, higher levels of narcissism are associated with developmentally inappropriate levels of parental control (Segrin, Woszidlo, Givertz, & Montgomery, 2013). Furthermore, Cramer (2011) argues that inappropriate levels of responsiveness and demandingness at different developmental stages may lead to higher narcissism, and that this accounts for the association between narcissism and both permissive (low demandingness, high responsiveness) and authoritarian (high demandingness, low responsiveness) parenting styles (e.g., Cramer, 2011; Ramsey, Watson, Biderman, & Reeves, 1996; Watson, Little, & Biderman, 1992).

Overall, evidence for the role of different parenting practices is mixed. A lack of differentiation between concepts related to parenting (such as coldness and rejection) and different conceptualizations of narcissism (e.g., Cain et al., 2008; Emmons, 1987) may contribute to mixed findings in the area. In addition, few studies examine behavioral differences between parents. Historically, mothers have been seen as primary care-givers and key attachment figures for children within the Western family unit (e.g., Bowlby, 1969/1982), and have been the focus of theories of narcissistic development (e.g., Freud, 1914/2012) and social commentary (e.g., Lasch, 1979; Philipson, 1982). Although research indicates that maternal and paternal behaviors may influence narcissism in different ways (e.g., Watson et al., 1992; Trumpeter, Watson, O'Leary, & Weathington, 2008), evaluation of these differences or whether parenting behaviors

interact has been sparse. It is important to examine this relationship, as the behavior of a parent does not exist within a vacuum, but within a dynamic family system in which the actions of individuals affect others.

Childhood Invalidation and Narcissism

Invalidation is a concept that may explain some of the paradoxical findings in the literature. As defined by Linehan (1993), “an invalidating environment is one in which communication of private experiences is met by erratic, inappropriate, and extreme responses....the expression of private experiences is not validated; instead, it is often punished and/or trivialized” (p. 49). Childhood invalidation is associated with a number of constructs related to issues in self–concept and regulation, such as borderline personality symptoms (Robertson, Kimbrel, & Nelson–Gray, 2013), emotion dysregulation (Shenk & Fruzzetti, 2014), psychological distress and experiential avoidance (Krause, Mendelson, & Lynch, 2003), and eating disorder symptoms (Haslam, Mountford, Meyer, & Waller, 2008).

Invalidation is distinct from concepts previously examined such as warmth/coldness, rejection, and control. Although certain measures of parenting behaviors may contain content overlap, invalidation is specifically focused on a parental reaction to the inner experience of a child, rather than the parent's emotional expression (such as warmth/coldness) or general behavior towards a child (such as rejection and control). Due to the similarity and likelihood of these behaviors co–occurring with invalidation, examination of invalidation should control for these other factors.

Invalidation has been discussed in reference to narcissism's development (e.g., Strauman, 2001), but has not been explicitly examined. As identified by Levy, Ellison, and Reynoso (2011) writings on narcissism focus on behaviors consistent with invalidation, and draw links between narcissism and borderline personality features which are more commonly associated with invalidation. The link between narcissism

and invalidating parental behavior is examined extensively by A. Miller (1997).

Although A. Miller does not use the term invalidation, she posits that when children do not have their experiences or emotions respected, they fail to develop a framework for experiencing emotions, becoming outwardly focused on the needs of their parents and accessing admiration from others. A. Miller proposes that individuals begin to place excessive value on behaviors and attributes that garner approval from others, such as achievement and beauty, and become “excessively dependent on admiration from others” (p. 36) as a result of exposure to environments where their emotions and experiences are not validated. Indeed, research suggests that individuals higher on narcissism value agentic rather than communal markers of success and tend to attribute these to themselves more than people who are lower in narcissism (e.g., Campbell, Rudich, & Sedikides, 2002; Gabriel, Critelli, & Ee, 1994; Sedikides, Gregg, Cisek, & Hart, 2007). Examples of invalidating experiences include environments where children only receive affection for their accomplishments, and environments where children learn to not express emotions that are distressing for parents (e.g., anger or sadness, Linehan, 1993).

Childhood invalidation has also been discussed in reference to the dynamic self-regulatory processing model of narcissism (Morf & Rhodewalt, 2001a; Strauman, 2001), which depicts narcissism as a collection of interacting construal and regulation processes that form a person's sense of self (Morf & Rhodewalt, 2001b). Morf and Rhodewalt (2001a) posit that the processes outlined in their model may result from environments in which “the parents were ultimately unresponsive to variation in the child's behavior and this lack of contingency leads to confusions in the child about the basis of self-worth” (p. 248). Similarly, Strauman highlights that invalidation, as outlined by Linehan (1993), “could lead to the kind of precarious self-esteem and desperate interpersonal efforts of affirmation observed in narcissists” (p. 240). If this is

the case, and narcissism is associated with invalidation, this would allow for greater integration of developmental models related to personality in both clinical and research settings.

Summary and Current Study

Overall, research appears to support the theoretical position that childhood experiences with parents are associated with the development of narcissism, although findings for parenting behaviors such as warmth, rejection and control have been mixed, and research examining the impact of individual parent behavior has been sparse. A parenting factor which may influence the development of narcissism is invalidation, which is associated with difficulties in self and emotion regulation. As such, the current study aimed to examine the relationship of recollections of invalidating parental behaviors with grandiose and vulnerable narcissism. To do this, we controlled for parenting constructs previously examined, such as parental coldness, rejection, and overprotection (which combines both controlling and monitoring behaviors), to examine whether invalidation has predictive value over and above the previously examined behaviors. Three hypotheses were put forward. First, we hypothesized that invalidation would be positively correlated with rejection, coldness and overprotection (Hypothesis 1). Second, we hypothesized that invalidation from mothers and fathers would significantly predict vulnerable narcissism over and above coldness, rejection and overprotection (Hypothesis 2). Last, we hypothesized that invalidation from mothers and fathers would also significantly predict grandiose narcissism over and above coldness, rejection and overprotection (Hypothesis 3). For Hypotheses 2 and 3, we explored whether maternal and paternal invalidation interact to predict narcissism, as previous research indicates that each parent's behavior may have different associations with narcissism (e.g., Watson et al., 1992).

Method

Participants

Data from participants were collected over 2013–2014 as part of a larger online longitudinal study examining narcissism. Participants were psychology undergraduate students and the general population and were collected using convenience and panel sampling methods (see procedure section for recruitment and compensation details). A total of 442 participants were included in the study, consisting of 301 females and 141 males with a mean age of 25.57 ($SD = 10.19$, range 18–81). Of this sample, 364 (82.35%) participants identified as Australian citizens, and 78 identified as other nationalities.

A total of 685 participants attempted the measures outlined below, but 42 were removed from analysis due to lack of parenting data (no information regarding parenting was recorded), and 76 were removed due to response sets, failure to pass attention checks, and extremely fast completion times. Participants were asked to specify who had raised them through childhood (options were: biological mother, biological father, adoptive mother, adoptive father, mother's partner, father's partner, and other, which participants were asked to specify). Four hundred and fifty-nine participants identified that they had been raised by their biological mother and father, of whom 442 had complete demographic data, and were included in the final sample.

The sample was comprised of participants recruited using convenience ($n = 303$) and panel ($n = 139$) methods. Chi-square tests of independence indicate that the samples were not significantly different in terms of gender, $\chi^2(1, N = 442) = 0.02, p = .885$, or reported nationality (measured as Australian and non-Australian participants), $\chi^2(1, N = 442) = 2.21, p = .137$. The panel sample was found to have a wider age range (18–81 years) compared to the convenience sample (18–65 years). The convenience sample ($M = 22.37, SD = 6.82$) was significantly younger than the panel sample ($M =$

32.53, $SD = 12.61$), $t(176.04) = 8.92$, $p < .001$. This is not surprising, as student samples are generally younger than those sourced from the general population. Given these demographics, the samples were combined for the analyses to provide adequate power for the study.

Procedure

Participants were recruited using paneling and convenience sampling. The convenience sample consisted of university students and a small number of general population participants. Students were made aware of the study through the course of their studies and using posters around campus. The study was made available online using a public Facebook page and several online forums that promote psychology studies. First year psychology students were offered course credit and all participants in the convenience sample were given the option of entering a draw to receive a gift voucher. The panel sample was collected using an Australian paneling service, the Online Research Unit, and consisted of Australian participants recruited from the general population. All participants were provided with an information sheet detailing the nature of the study, potential risks, and confidentiality, which they were asked to read before providing informed consent to participate. Participants were then directed to the online survey. After finishing the survey, participants were directed to a debriefing sheet which provided information regarding the aims of the study as well as contact details of the authors should participants wish to receive further information, and the option to remove their data from analyses. This research project received approval from the university's Human Research Ethics Committee.

Materials

The following measures were administered to participants. See Appendix A for full measures.

The Pathological Narcissism Inventory (PNI; Pincus et al., 2009). This scale has 52 items and examines grandiose and vulnerable subtypes of narcissism (Wright, Lukowitsky, Pincus, & Conroy, 2010), using a 6-point Likert scale ranging from 0 = *not at all like me* to 5 = *very much like me*. Examples of items include “When others don't notice me, I start to feel worthless” and “I often fantasize about being admired and respected”. The measures of grandiose ($\alpha = .88$) and vulnerable narcissism ($\alpha = .95$) subtypes were highly reliable.

The Invalidating Childhood Environment Scale (ICES; Mountford, Corstorphine, Tomlinson, & Waller, 2007). Invalidating behavior of mothers and fathers was measured using the 14-item ICES scale. It is based on the eight themes of an invalidating environment: “ignore thoughts and judgments; ignore emotions; negate thoughts and judgments; negate emotions; overreact to emotions; overestimate problem solving; overreact to thoughts and judgments; and oversimplify problems” (Mountford et al., 2007, pp. 50–51), and each item is scored on a 5-point Likert scale, ranging from 1 = *never* to 5 = *all the time*. Examples of items include: “If I couldn't do something however hard I tried, my mother/father told me I was lazy” and “When I was miserable, my mother/father asked me what was upsetting me, so that they could help me” (reverse-scored). The measures of both maternal invalidation ($\alpha = .91$) and paternal invalidation ($\alpha = .91$) had high reliability.

The EMBU–Short Form (s-EMBU; Arrindell et al., 1999). This is a 23-item scale consisting of three subscales: rejection ($\alpha = .82$, an example item: “It happened that my parents gave me more corporal punishment than I deserved”), emotional warmth ($\alpha = .90$, an example item: “My parents praised me”), and overprotection ($\alpha = .85$; an example item: “I felt that my parents interfered with everything I did”). Each item is measured on a 4-point Likert scale ranging from 1 = *No, never* to 4 = *Yes, most of the time*. For the purposes of this study, the warmth subscale was reverse-scored to

measure parental coldness. It should be noted that the s-EMBU in our study assessed parents as a whole, rather than individual parent behavior.

Results

Expectation maximization (Enders, 2010; Schafer, 1997) was used to replace missing values (.03%). Correlations and descriptive statistics for the PNI and recollections of childhood variables are in Table 3.1. Recollections of parental invalidation, rejection, and overprotection positively correlated with both vulnerable and grandiose narcissism, and parental coldness was positively correlated with vulnerable narcissism. Parental invalidation positively correlated with rejection, coldness and overprotection, supporting Hypothesis 1. As seen in Table 3.1, small significant negative correlations were found between both narcissism subtypes and age, and between gender and vulnerable narcissism, indicating that females reported higher vulnerable narcissism than males.

Hierarchical Multiple Regression Analyses

To further examine the relationship between parental invalidation and both narcissism subtypes, we conducted hierarchical multiple regression analyses. This allowed us to control for the effects of age and gender (Step 1), the effects of parental rejection, coldness and overprotection (Step 2), and examine the effect of parental invalidation (Step 3). We also explored the interaction between maternal and paternal invalidation in predicting narcissism (Step 4). Individual analyses were run for grandiose and vulnerable narcissism and all continuous predictor variables were mean-centered.

Table 3.1

Zero-Order Correlations and Descriptive Statistics for Narcissism, Parenting Behavior Measures, Age, and Gender

	1	2	3	4	5	6	7	8	<i>M</i> (<i>SD</i>)	Range
1. Grandiose narcissism	-								2.69 (.74)	(0.61–4.82)
2. Vulnerable narcissism	.66***	-							2.32 (.79)	(0.12–4.82)
3. Parental rejection	.18***	.20***	-						1.55 (.56)	(1.00–3.86)
4. Parental coldness	.01	.15**	.65***	-					1.96 (.73)	(1.00–4.00)
5. Parental overprotection	.21***	.20***	.47***	.22***	-				2.29 (.63)	(1.00–4.00)
6. Maternal invalidation	.15**	.21***	.71***	.68***	.44***	-			1.95 (.70)	(1.00–4.86)
7. Paternal invalidation	.13**	.21***	.62***	.65***	.29***	.54***	-		2.04 (.76)	(1.00–4.86)
8. Age	-.37***	-.28***	-.06	.09	-.13**	-.01	-.02	-	25.57 (10.19)	(18–81)
9. Gender (Male = 1)	.04	-.13**	.01	.04	-.06	<.01	.07	.15**	.32 (.47)	(0–1)

Note. *N* = 442. ** $p < .01$. *** $p < .001$.

Vulnerable Narcissism

The model predicting vulnerable narcissism was significant, with the model explaining 20% of the variance in vulnerable narcissism, $R^2 = .20$, $F(8, 433) = 13.56$, $p < .001$. Step 1 of the model was significant, $R^2 = .08$, $F(2, 439) = 20.09$, $p < .001$. Steps 2, 3, and 4 were all found to significantly add to the model: Step 2, $\Delta R^2 = .05$, $\Delta F(3, 436) = 7.89$, $p < .001$; Step 3, $\Delta R^2 = .01$, $\Delta F(2, 434) = 3.48$, $p = .032$; and Step 4, $\Delta R^2 = .06$, $\Delta F(1, 433) = 30.10$, $p < .001$ (full results from this regression analysis are depicted in Appendix B). In the final step (see Table 3.2), gender and age significantly predicted vulnerable narcissism, with greater age associated with lower vulnerable narcissism, and females reporting higher vulnerable narcissism. Maternal and paternal invalidation positively predicted vulnerable narcissism, whereas rejection, coldness and overprotection were not significant predictors, supporting Hypothesis 2. The interaction

Table 3.2

Results of Step 4 of a Hierarchical Regression Analysis of Age, Gender and Parenting Behaviors Predicting Vulnerable Narcissism

Predictor	β	b	95% CI	SE	t	p
Age	-.24	-.02	(-.03, -.01)	<.01	-5.35	.000
Gender	-.09	-.16	(-.30, -.01)	.07	-2.12	.034
Parental rejection	.10	.14	(-.06, .34)	.10	1.42	.156
Parental Coldness	-.04	-.04	(-.20, .11)	.08	-0.58	.565
Parental Overprotection	.03	.03	(-.09, .16)	.06	0.51	.612
Maternal invalidation	.18	.20	(.04, .35)	.08	2.53	.012
Paternal invalidation	.15	.16	(.03, .28)	.06	2.50	.013
Maternal * Paternal Invalidation	-.27	-.31	(-.42, -.20)	.06	-5.49	.000

$F(8, 433) = 13.56$, $p < .001$
 $R^2 = .20$, $\Delta R^2 = .06$

Note. $N = 442$. All predictor variables were mean-centred prior to analysis. Confidence intervals, standard errors and p values were calculated for the unstandardized coefficient of each variable. Gender was dummy coded: *Female* = 0; *Male* = 1.

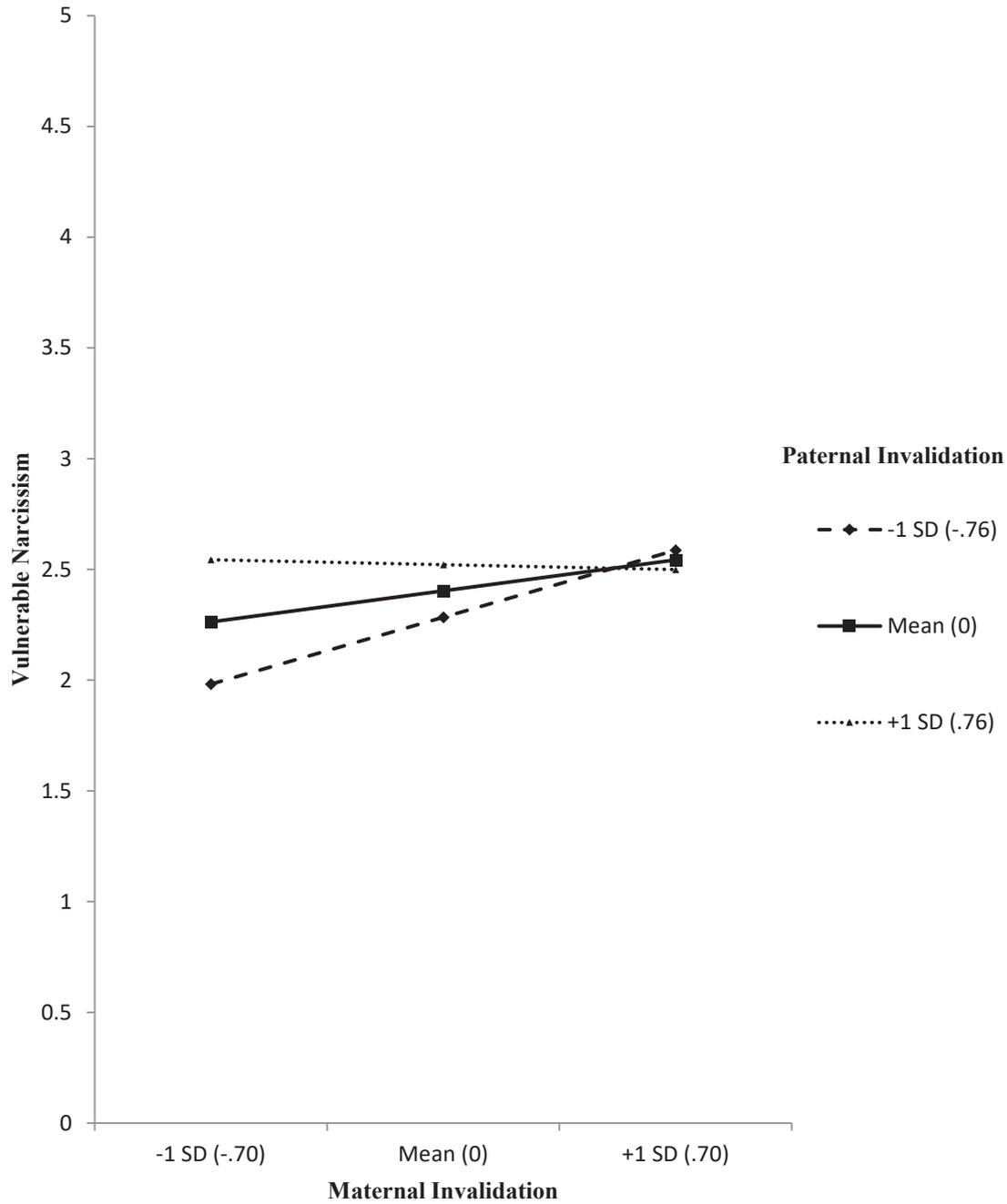


Figure 3.1. Vulnerable narcissism as a function of maternal and paternal invalidation.

between maternal and paternal invalidation was significant, and to explore the interaction, we conducted a simple slopes analysis using PROCESS (Hayes, 2013).

As seen in Figure 3.1, the effect of maternal invalidation on vulnerable narcissism was significant and positive when paternal invalidation was lower ($-1 SD$), $b = .43$, $SE = .10$, $t(433) = 4.48$, $p < .001$, $95\% CI = [.24, .62]$, and at mean levels, $b = .20$, $SE = .08$, $t(433) = 2.53$, $p = .012$, $95\% CI = [.05, .35]$. The effect of maternal invalidation on vulnerable narcissism when paternal invalidation was higher ($+1 SD$) was not significant, $b = -.03$, $SE = .08$, $t(433) = -0.39$, $p = .700$, $95\% CI = [-.19, .13]$. These findings indicate that maternal invalidation was positively associated with vulnerable narcissism for participants who experienced low and medium levels of paternal invalidation, but there was no effect of maternal invalidation on vulnerable narcissism if paternal invalidation was higher. Overall, the lowest levels of narcissism were found for individuals who reported that both their parents were lower in invalidating behavior, whereas individuals who reported higher levels of invalidation from one or both parents had higher levels of narcissism.

Grandiose Narcissism

The final model predicting grandiose narcissism explained 23% of the variance in grandiose narcissism, $R^2 = .23$, $F(8, 433) = 16.52$, $p < .001$. Steps 1, 2 and 4 were significant: Step 1, $R^2 = .15$, $F(2, 439) = 37.93$, $p < .001$; Step 2, $\Delta R^2 = .04$, $\Delta F(3, 436) = 7.25$, $p < .001$; and Step 4, $\Delta R^2 = .04$, $\Delta F(1, 433) = 20.38$, $p < .001$; whereas Step 3, approached significance, $\Delta R^2 = .01$, $\Delta F(2, 434) = 2.68$, $p = .070$ (full results from this regression analysis are depicted in Appendix B). As seen in Table 3.3, grandiose narcissism was higher in males in the final step, and age significantly predicted lower grandiose narcissism. Maternal invalidation positively predicted grandiose narcissism, but the main effect of paternal invalidation was not significant. Rejection and coldness were also significant predictors, such that higher levels of rejection and lower levels of coldness were associated with higher grandiose narcissism (Table 3.3). Similar to the findings for vulnerable narcissism, the interaction between maternal and paternal

invalidation was significant, and overall these findings indicate support for Hypothesis 3.

Table 3.3

Results of Step 4 of a Hierarchical Regression Analysis of Age, Gender and Parenting Behaviors Predicting Grandiose Narcissism

Predictor	β	b	95% CI	SE	t	p
Age	-.34	-.03	(-.03, -.02)	<.01	-7.81	.000
Gender	.10	.16	(.03, .29)	.07	2.37	.018
Parental rejection	.19	.24	(.06, .43)	.09	2.62	.009
Parental Coldness	-.23	-.23	(-.36, -.09)	.07	-3.27	.001
Parental Overprotection	.05	.05	(-.06, .17)	.06	0.88	.380
Maternal invalidation	.18	.18	(.04, .32)	.07	2.54	.012
Paternal invalidation	.11	.11	(-.01, .22)	.06	1.82	.069
Maternal * Paternal Invalidation	-.22	-.23	(-.33, -.13)	.05	-4.52	.000

$F(8, 433) = 16.52, p < .001$
 $R^2 = .23, \Delta R^2 = .04$

Note. $N = 442$. All predictor variables were mean-centred prior to analysis. Confidence intervals, standard errors and p values were calculated for the unstandardized coefficient of each variable. Gender was dummy coded: *Female* = 0; *Male* = 1.

As seen in Figure 3.2, maternal invalidation had a significant effect on grandiose narcissism when paternal invalidation was lower (-1 SD), $b = .36, SE = .09, t(433) = 4.06, p = <.001, 95\% CI = [.18, .53]$, and at the mean level, $b = .18, SE = .07, t(433) = 2.54, p = .011, 95\% CI = [.04, .32]$, but did not have a significant effect at higher levels ($+1$ SD), $b = .01, SE = .08, t(433) = 0.12, p = .904, 95\% CI = [-.14, .16]$. Overall, these findings show that paternal invalidation significantly moderated the effect of maternal invalidation on grandiose narcissism. Maternal invalidation positively predicted grandiose narcissism for participants who experienced lower and medium levels of paternal invalidation, but there was no effect of maternal invalidation on grandiose narcissism if paternal invalidation was higher. Accordingly, similar to vulnerable narcissism, higher levels of invalidation from either parent predicted higher levels of

grandiose narcissism, and individuals who reported lower levels of invalidation from both parents had lower levels of grandiose narcissism.

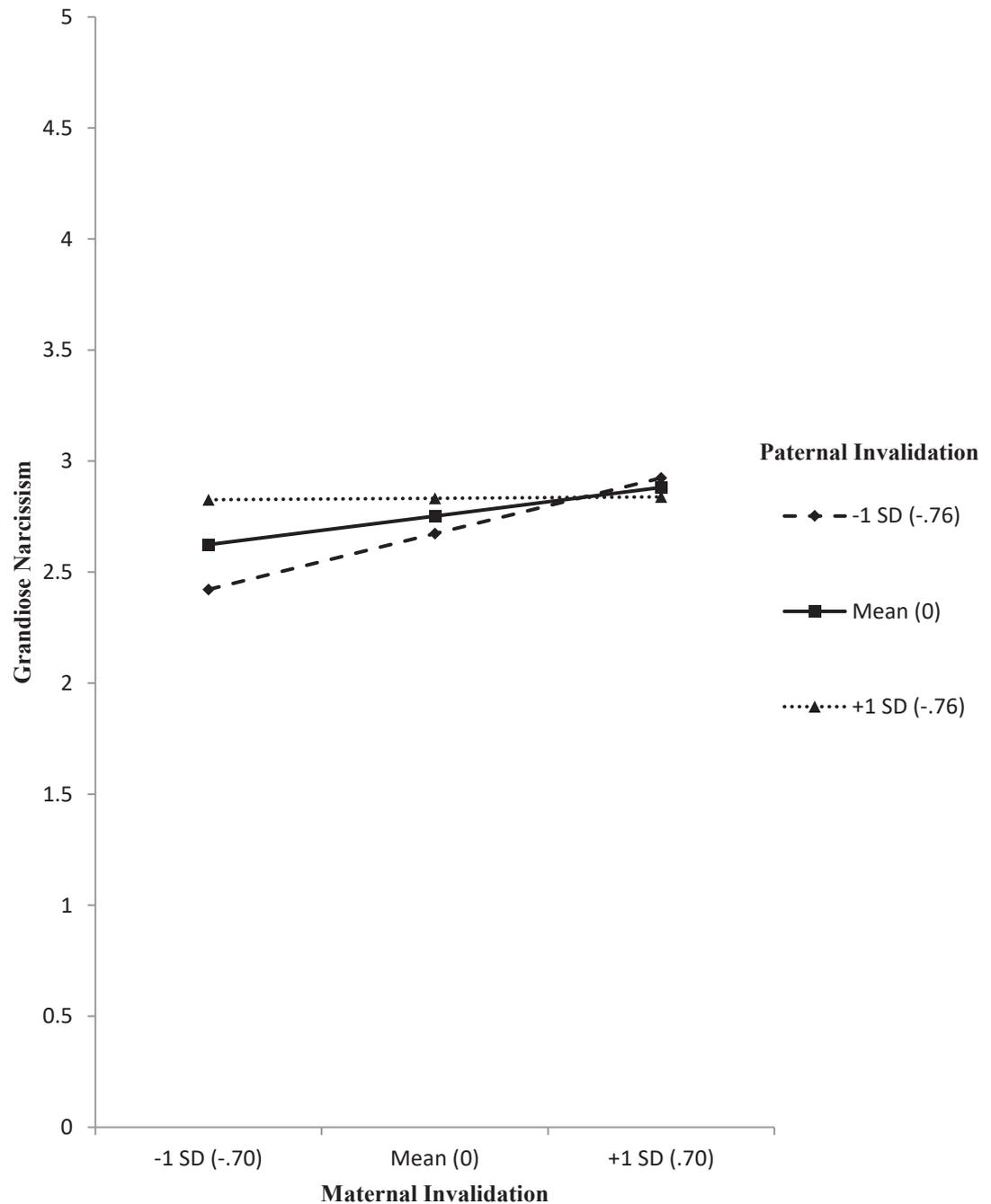


Figure 3.2. Grandiose narcissism as a function of maternal and paternal invalidation.

Discussion

This study investigated whether parental invalidation predicts grandiose and vulnerable narcissism over and above other commonly studied parental factors. Parental invalidation correlated positively with parental rejection, overprotection, and coldness, supporting Hypothesis 1. Hypotheses 2 and 3 were also supported: invalidating parental behavior significantly predicted grandiose and vulnerable narcissism when controlling for parental coldness, rejection, and overprotection, and the age and gender of participants.

Our results support the hypothesis that parental invalidation is positively associated with vulnerable and grandiose narcissism. Although the main effect for paternal invalidation was only a significant predictor for vulnerable narcissism, the interaction between maternal and paternal invalidation was found to be a significant predictor of both narcissism subtypes. Both models indicate that higher levels of invalidating behavior from mothers, fathers, or both parents were associated with higher levels of narcissism. Narcissism was lowest when both parents were reported to display less invalidating behavior. These findings indicate that the association between narcissism and recollections of invalidation are not restricted to one parent (e.g., Lasch, 1979; Philipson, 1982), and that the behavior of both parents may influence the development of narcissism. This finding, in addition to the different predictive patterns found for mothers and fathers, highlights the importance of examining both parents in understanding the impact of childhood experiences. Although family structures other than mothers and fathers (e.g., single-parent families, families where one or both parents have re-partnered) were excluded in this study due to their small number, future research should extend analyses to examine whether the current findings replicate across different family structures.

Grandiose and vulnerable narcissism were predicted by different patterns of demographic variables and parenting behaviors. Consistent with previous research (e.g., Foster, Campbell, & Twenge, 2003), age was negatively associated with levels of vulnerable and grandiose narcissism – older participants reported lower levels of narcissism. Gender was differentially associated with narcissism subtypes in the models tested. Zero-order correlations indicated that females tended to be higher in vulnerable narcissism, whereas no significant association was found for gender and grandiose narcissism. This finding differs from previous findings which indicate that males tend to score slightly higher on measures of grandiose narcissism, and show no significant gender differences for vulnerable narcissism (Grijalva et al., 2015); however, this difference may be due to measurement and sampling differences, such as the use of the PNI in an Australian sample.

Although vulnerable narcissism correlated with rejection, coldness and overprotection, hierarchical multiple regression analysis showed that the effect of these variables became non-significant when they were entered into the regression analysis with age, gender and parental invalidation. On the other hand, although grandiose narcissism correlated with rejection and overprotection, the regression analysis showed that rejection and coldness significantly predicted grandiose narcissism when controlling for other variables in the model. These findings partially supported previous studies, that found warmth (lower levels of coldness) to be positively associated with grandiose narcissism (e.g., Horton et al., 2006; Watson et al., 1995). This is consistent with the idea that vulnerable and grandiose narcissism may be influenced by different developmental factors (e.g., Mechanic & Barry, 2015). The findings also indicate that coldness and rejection may have different associations with narcissism, and measuring them as separate constructs may provide more information than simply considering them as part of the same construct. Overall, the models indicate that, although similar in

origin, grandiose and vulnerable narcissism are associated with different predictive factors, and require separate examination to understand their development.

This is the first study to explicitly examine the link between recollections of invalidating parental behavior and narcissism. Our findings are consistent with the observations of A. Miller (1997) and the predictions of Morf and Rhodewalt (2001a) and Strauman (2001), who identified that invalidating experiences may be linked to narcissism. Although the cross-sectional nature of the study does not allow us to examine the dynamic development of narcissism, the findings suggest that perceived parental invalidation may play a role in the process of development. Parental invalidation is associated with other clinically relevant constructs such as eating disorders (e.g., Haslam et al., 2008) and borderline personality disorder (Linehan, 1993; Robertson et al. 2013). Previous research and theory indicate that narcissism, may co-occur with these issues (e.g., Kennedy, McVey, & Katz, 1990; Steinberg & Shaw, 1997; Waller, Sines, Meyer, Foster, & Skelton, 2007), and it is possible that perceived parental invalidation may be a common developmental factor.

Invalidation can be seen as a component of the psychodynamic and social learning theories put forward to explain the development of narcissism. Freud's (1914/2012) conceptualization sees a child's needs supplanted in favor of their parents' goals, whereas rigidity, high expectations, and a lack of recognition of a child's emotional needs are salient in the theories of Kohut (1966), Kernberg (1975) and Horney (1939). Although coldness, rejection and overprotection were controlled for in this study due to their similarities with invalidation, it is important to note that invalidating behavior is not confined to environments with these characteristics. Indulgent and overvaluing behaviors, as highlighted by Millon (1981), may be invalidating if they reflect behaviors driven by the needs and goals of parents, rather than the experiences and needs of the child.

Limitations and Future Avenues of Research

The current research provides support for the association between invalidating behavior and higher levels of narcissism, but has several limitations. The s-EMBU was chosen as a well-validated cross-cultural measure of parenting behavior often associated with narcissism (Arrindell et al., 1999; Arrindell et al., 2005); it is also used here to examine “parents” rather than individual parent behavior. It is possible that the item content of the s-EMBU and the differences in measurement of parenting behavior (rather than mothers and fathers separately, which is typically how the s-EMBU is administered) may have affected the results. The ICES measure, although based on the eight factors of invalidation identified by Linehan (1993), does not contain enough coverage of these factors to allow for more nuanced examination of the relationship of each factor with narcissism. Extension of the measurement of invalidation in future research would allow for greater understanding of this construct in relation to narcissism. Future studies should also endeavor to examine the relationship of invalidation with other measures of narcissism and parenting (such as overvaluation, parenting styles, and attachment) to clarify the links between these constructs.

The use of retrospective self-report measures of parental behavior does not allow for causal links between parental behavior and current personality to be made, though they are suggestive of a relationship. Future longitudinal examination of invalidation and narcissism would extend these findings and provide greater support for a relationship between these variables. Longitudinal studies would also control for age, which may affect how participants recall their childhood. Although the use of retrospective parental reports has been critiqued for introducing bias and being problematic in terms of recall, prominent reviews of this type of methodology indicate that retrospective reports of parenting can provide useful information and are not just indicative of participants’ current perceptions (e.g., Brewin, Andrews, & Gotlib, 1993;

Coolidge, Tambone, Durham, & Segal, 2011; Hardt & Rutter, 2004). It is important to note that previous research indicates significant underreporting of negative childhood experiences (Hardt & Rutter, 2004). As such, the findings reported in this chapter may underrepresent levels of invalidating, rejecting, cold, and overprotecting parenting behaviors.

Due to the sample used in the current study, caution should be exercised in applying these findings to individuals who exhibit extremely high levels of narcissism or parental invalidation. Although we used a measure based on a clinical conceptualization of narcissism (e.g., Pincus et al., 2009; Maxwell, Donnellan, Hopwood, & Ackerman, 2011; Thomas, Wright, Lukowitsky, Donnellan, & Hopwood, 2012), we did not examine a clinical sample. Our sample also contained a relatively small number of individuals with recollections of highly invalidating parenting behavior, and was not balanced for gender. Future research should aim to examine the role of invalidation in clinical samples, and whether the current findings occur in individuals with recollections of high childhood invalidation.

A limitation of this study is that it provides limited insight into the effect of different family system factors on the development of narcissism, particularly the impact of different family models and gender-specific processes. Although this study only focuses on participants who reported a biological mother and father, future research should also examine other family models including single-parent and same-sex parent families, and the relationship status of parents during childhood (i.e., parents who stay together, parents who separate or re-partner). In addition, future studies should aim to examine whether there are gender differences in the parenting processes associated with increased narcissism.

Conclusions

This study examined the association between grandiose and vulnerable narcissism and the concept of parental invalidation. The results indicate that recollections of invalidating behavior from mothers, fathers, or both parents are associated with higher levels of grandiose and vulnerable narcissism when controlling for age, gender, and parental coldness, rejection, and overprotection. Overall, lower levels of vulnerable and grandiose narcissism were associated with both parents being low in invalidating behavior. These findings support several theories of narcissistic development (e.g., A. Miller, 1997; Morf & Rhodewalt, 2001a; Strauman, 2001), and further link the development of narcissism with factors which may disrupt the development of a well-regulated and stable sense of self. Further research is needed to address the limitations of the current study; however, these findings contribute to our understanding of narcissism, and provide a promising indication of a key factor involved in its development.

Chapter 4: The Impact of Individualism-Collectivism, Celebrity Culture, and Technology on Pathological Narcissism

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A version of this chapter is submitted for review at Personality and Social Psychology

Bulletin

Foreword

Individualism, celebrity culture, and technology use have been identified as important social factors in the development of narcissism (e.g., Lasch, 1979, Twenge & Campbell, 2010). As outlined in Chapter 2, individualism is associated with grandiose narcissism (e.g., Foster et al., 2003); however, little is known about the association between narcissism and vertical norms and how social norms are related to vulnerable narcissism. There has also been little examination of the association between narcissism and celebrity attitudes, group identification and whether narcissism is associated with general social technology use such as texting, email and social networking sites.

In line with the aims of this thesis, measures of individualistic norms, individualistic and vertical attitudes, group identification, celebrity culture, and technology use are used to examine the relationship between narcissism and social factors across two studies in this chapter. The studies use a sample of Australian participants drawn from community and university populations. This chapter first outlines a cross-sectional study which examines the association of narcissism subtypes with different social factors (Study 1). Building on the findings of this first study, Study 2 examines whether variables associated with narcissism in Study 1 predict narcissism over time, using a subsample of participants who completed a follow-up survey approximately six months following their completion of Study 1. Path analyses and change score modelling are used to examine how social factors and narcissism are

associated, whether there was change in these variables over time, and whether social factors are predict narcissism over time.

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Abstract

Grandiose narcissism is associated with a variety of social factors including individualistic norms, celebrity culture, and social technology use. However, the relationship between vulnerable narcissism and social factors is unclear. This paper examines how social factors relate to grandiose and vulnerable narcissism in Australia using two studies. Study 1 examined the association between narcissism and individualistic norms and attitudes, group identification, celebrity culture, and social technology use in an Australian adult sample ($N = 471$). Study 2 examined the association between these social factors and narcissism over a six-month period ($N = 207$). Narcissism subtypes were associated with different patterns of social attitudes, celebrity attitudes and social technology use. Social factors at Time 1 did not predict narcissism at Time 2. Overall, social factors are associated with both grandiose and vulnerable narcissism. We found little evidence for their role in the development of narcissism over six months.

Keywords: Narcissism, social norms, attitudes, culture and self, personality,

The impact of individualism-collectivism, celebrity culture, and technology on pathological narcissism

Social norms, attitudes and technology are important factors to consider in the development and expression of narcissism, because they significantly influence the way we relate to ourselves and others. Research into narcissism and social factors has primarily examined cross-cultural differences (e.g., Foster, Campbell & Twenge, 2003) and shifts in American society across time (e.g., Twenge, Konrath, Foster, Campbell, & Bushman, 2008) however, there has been little examination of how social factors are associated with narcissism within individuals over time, and how social factors are associated with vulnerable narcissism. This chapter aims to build on previous research by examining the relationship between grandiose and vulnerable narcissism and social factors thought to be associated with its development (e.g., Twenge & Campbell, 2010) - social norms, group identification, celebrity culture, and technology use.

Narcissism is characterized by behaviors, thoughts and motivations aimed at maintaining a positive sense of self. Many types of narcissism have been identified (e.g., Cain, Pincus, & Ansell 2008; Miller, Lynam, Hyatt, & Campbell, 2017), but it is commonly conceptualized as two subtypes: grandiose and vulnerable. Grandiose narcissism is associated with entitlement, grandiose fantasy, low empathy, and demanding admiration; whereas vulnerable narcissism is associated with a need for admiration, sensitivity to perceived slights, shame, and insecurity regarding having needs met (e.g., Pincus & Lukowitsky, 2010). At high levels, narcissism may impair function and an individual may meet the diagnosis of narcissistic personality disorder (NPD; American Psychiatric Association, 2013).

The development of narcissism appears to be influenced by biological and social factors (e.g., Coolidge et al., 2001; Jang, Livesley, Vernon, & Jackson, 1996), and this is highlighted in prominent models of narcissism such as the dynamic self-regulatory processing model (Morf & Rhodewalt, 2001). The model conceptualizes narcissism as a

series of interconnected dynamic processes that underlie narcissistic behavior and are influenced by the individual's social context. This interaction between social context and narcissism can be seen behaviors commonly expressed in narcissistic individuals, such as promoting personal status through symbols of wealth (Twenge & Campbell, 2010), or seeking attention and praise (DeWall, Buffardi, Bonser, & Campbell, 2011). Although many social factors have been associated with increased narcissism (e.g., Hill & Roberts, 2011; Kasser & Ryan, 1996; O'Boyle, Forsyth, Banks, & McDaniel, 2012), individualism, celebrity culture and technology use have been highlighted as important social factors which may influence narcissism (e.g., Lasch, 1979; Twenge & Campbell, 2010).

Narcissism and Social Norms

Individualistic societies emphasize greater self-focused attitudes and individual attributes, whereas collectivistic societies emphasize the needs of the group rather than the individual (Triandis, 1988, 1995). Grandiose narcissism appears to be higher in individualistic societies (e.g., Foster et al., 2003; Twenge, Campbell, & Freeman, 2012; Zondag, et al., 2009), and is associated with putting one's own needs before those of others (e.g., Campbell, Bush, Brunell, & Shelton, 2005) and holding self-focused rather than communal goals (e.g., Findley & Ojanen, 2013).

A limitation of previous studies examining narcissism and individualism is that they have not explicitly measured norms (e.g., Foster et al., 2003), or measured norms using measures which frame individualism as attitudes or personal preferences (see Cai, Kwan & Sedikides, 2011). Scales measuring personal preferences assess how much people internalize the norms of their group (Hogg & Reid, 2006) and what is important to the individual, rather than what individuals perceive as important to their social groups (Fischer et al., 2009). As outlined by Fischer et al. (2009), a limitation of measuring social norms using attitudinal items or inferring norms based on region or

country is that a key aspect of social norms is that they occur in reference to a particular group, and may differ between groups within a society. In addition, groups with which people identify are more likely to influence people's acquisition of social norms (e.g., Livingstone, Haslam, Postmes, & Jetten, 2011). As such, examining individualism in relation to specific social groups and as a personal attitude may improve our understanding of the construct and its relationship with narcissism.

Previous studies suggest that measuring norms at the attitudinal level is a stronger predictor of self-focused behaviors than descriptive norms (Fischer, 2006); as such, narcissism is likely to be more strongly associated with individualistic attitudes than individualistic group norms. In addition, vulnerable narcissism, is associated with less devotion to groups (Bizumic & Duckitt, 2008), which may shape how individuals with high narcissism relate to group norms. Given the self-focused nature of narcissism, we expect that individualistic social norms will have a weaker association with narcissism than individualistic attitudes.

Social norms regarding status in society, referred to as horizontal and vertical norms, have received little attention in relation to narcissism. Horizontal and vertical norms are conceptualized as existing within individualistic and collectivistic norms (Oyserman, 2006). As outlined by Singelis, Triandis, Bhawuk, and Gelfand (1995), horizontal individualistic countries such as Australia tend to emphasize being unique and distinctive from other people, whereas vertical individualistic countries such as the U.S. emphasize status and hierarchy within social structures. Narcissism is associated with a preference for hierarchy and status (e.g., Zitek & Jordan, 2016), and it is possible that vertical norms, may influence narcissism. For example, China is considered a vertical collectivist country (Hofstede, 1980) and Fukunishi et al. (1996) found that their Chinese sample had higher levels of narcissism than a U.S. sample.

Narcissism and Celebrity

Theorists have linked celebrity culture to narcissism (e.g., Lasch, 1979), and considered celebrities as “superspreaders” of narcissistic behavior (Twenge & Campbell, 2010), however there has been little research examining narcissism and celebrity attitudes. Young and Pinsky (2006) found that although celebrities scored higher on grandiose narcissism than a general population sample, years spent as a celebrity was not associated with narcissism. In addition, Ashe, Maltby and McCutcheon (2005), found that grandiose narcissism was positively associated with celebrity worship behaviors. These findings suggest individuals with higher narcissism may be more likely to engage with celebrity news, or aspire to become celebrities

Narcissism and Social Technology

Technology use has been associated with narcissism for many years. For example, Lasch (1979) speculated that the availability of portable cameras had led to a narcissistic preoccupation with the self, whereas recent work has highlighted concerns about “selfie” culture (e.g., Weiser, 2015) and social networking sites. There is ongoing debate whether use of social networking sites promotes narcissism, reflects narcissism, or creates a “feedback loop” (e.g., Twenge & Campbell, 2010) in which people high in narcissism seek out technologies that reinforce narcissism. Turkle (2011) identifies that technology presents an opportunity for highly narcissistic people to engage with others in a way which protects their often fragile sense of self. Narcissistic people may use social technologies to seek admiration or validation (DeWall, et al., 2011), and social networking sites may serve an important function in affirming self-worth for narcissistic people (e.g., Toma & Hancock, 2013). In their examination of technology use and personality, Rosen, Whaling, Rab, Carrier, and Cheever (2013) found that narcissism was associated with Facebook use, and anxiety if not able to check Facebook. Anxiety regarding technology use may stem from the role technology plays for narcissistic

people in eliciting attention from others. Although there is large body of research on social networking use and narcissism, it is unclear if the associations between narcissism and social networking sites, such as those found by Rosen et al. (2013) extend to social technology use more generally, such as email and texting.

Current Research

The current research expands on previous studies by examining the relationship between narcissism subtypes and social factors, including vertical and individualistic norms, celebrity attitudes and technology use in an Australian sample. To facilitate a detailed examination of how social attitudes, norms, and technology relate to narcissism, we included measures of important group and national group individualistic norms, identification with these groups, individualist and vertical social attitudes, celebrity attitudes, and measures of daily social technology use and anxiety regarding use. As there has been little examination of how these factors are associated within individuals across time, we conducted two studies: a cross-sectional study, Study 1, and a longitudinal study, Study 2, which uses a subset of Study 1 participants to examine whether social factors predict narcissism over time. We now describe the hypotheses and their rationales.

Individualistic and vertical attitudes. Australia has been identified as a horizontal individualist culture (e.g., Triandis & Gelfand, 1998). Previous research has shown that grandiose narcissism is related to individualistic attitudes. We predicted this would replicate in Australia (Hypothesis 1). Little research has examined vulnerable narcissism and social attitudes; however, vulnerable narcissism as measured by the Pathological Narcissism Inventory (PNI; Pincus et al., 2009) includes a facet of devaluing others, an attitude which may be associated with beliefs regarding inequality and status. We predicted that vulnerable narcissism would be associated with vertical attitudes (Hypothesis 2).

Individualistic norms. As narcissism has been associated with individualism in previous work (Foster, Campbell & Twenge, 2003; Zondag, et al., 2009), we anticipated that both narcissistic subtypes would be associated with individualistic descriptive norms (Hypothesis 3). Based on previous findings suggesting that important groups are likely to have a greater influence on an individual (Fischer et al, 2009), we expected that the association would be stronger between important group norms and narcissism compared to national norms (Hypothesis 4).

Identification. Based on previous findings indicating that high narcissism is associated with lower devotion to groups (e.g., Bizumic & Duckitt, 2008), we predicted that identification with groups would be negatively associated with both narcissism subtypes (Hypothesis 5).

Celebrity Attitudes. As narcissism has been associated with celebrity culture and wanting to associate with high status people (Ashe et al., 2005), we predicted that interest in celebrity culture would significantly predict both narcissism subtypes (Hypothesis 6).

Technology Use. We predicted that both narcissism subtypes would be positively associated with social technology use (Hypothesis 7), based on previous research (Turkle, 2011; Rosen et al., 2013) indicating that social technologies may help narcissistic individuals have their needs met. Given the theorized importance of technology use, we also predicted that narcissism would relate to anxiety if unable to use social technologies (Hypothesis 8).

Study 1

Method

Participants. Participants were recruited from university and general population samples over 2013-14 as part of a larger study examining narcissism in Australia (see See Chapter 3). This study received ethical clearance from the relevant university

Human Ethics Research Committee. Student participants received course credit, if applicable, and the opportunity to enter a prize draw to receive a gift voucher. General population participants were volunteers or participants recruited by the Online Research Unit, an Australian paneling service. Recruitment was driven by obtaining a sample of 200 participants (e.g., Boomsma & Hoogland, 2001; Kline, 2005) for Study 2 of this paper, which was an optional follow up of Study 1. Of the 757 participants who attempted the survey measures detailed below and consented for their data to be used, 192 were removed due to considerable missing data, speeding, or failing to identify an important group for the social norm questions. Given that we examined Australian norms and attitudes, we included only participants who identified Australia as their national group with complete demographic information, leaving a sample for Study 1 of 471 participants (69.2% were female, the mean age was 25.67, $SD = 10.09$).

Materials and procedure. Study 1 consisted of an online survey. Participants completed the following measures as part of a larger study (see Appendix A for full measures used).

The Pathological Narcissism Inventory (Pincus et al., 2009). This scale has 52 items examined using a 6-point Likert scale (1= *not at all like me*; 6= *very much like me*). It measures grandiose ($\alpha = .88$) and vulnerable narcissism subtypes ($\alpha = .95$) and is scored using the structure outlined in Wright, Lukowitsky, Pincus, and Conroy (2010).

The Normative IC Scale (Fischer et al., 2009). This 22-item scale measures descriptive individualism-collectivism norms. Participants were asked to rate items as being typical of their national group ($\alpha = .81$) and of a social group the participant nominated as being most important to them (e.g. family, friends; $\alpha = .89$). Items were measured using a 7-point scale on which individuals indicate which of two statements (one collective, one individualist) is more typical of the group, with higher scores indicating more individualistic norms.

Group identification. Group identification for national and important groups was measured on a 5-point Likert scale from 1 = *strongly disagree* to 5 = *strongly agree*.

The Revised Horizontal and Vertical Individualism and Collectivism Scale (Sivadas, Bruvold, & Nelson, 2008). Three subscales were included in the study: vertical individualism (VI; three items, $\alpha = .71$), horizontal individualism (HI, three items, $\alpha = .69$), and vertical collectivism (VC; four items, $\alpha = .61$). Items were measured using a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*).

Celebrity Attitude Scale - Entertainment/Social Subscale (CAS, Maltby, Houran, Lange, Ashe, & McCutcheon, 2002). This 10-item subscale measures engagement with celebrity information on a social basis ($\alpha = .95$) using a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*).

Daily technology usage (Rosen et al., 2013). These items were included to measure daily hours of: being online, email, instant messaging, telephone use, texting, and social networking. Items were measured on a scale of: “*Not at all*” = 0, “*1-30 minutes*” = 0.25, “*31 minutes - 1 hour*” = 0.75, “*1-2 hours*” = 1.5, “*3 hours*” = 3, “*4 hours*” = 4, “*5 or more hours*” = 5. Exploratory factor analysis (EFA) and parallel analysis (O’Connor, 2000) were used to examine the factor structure of the items and indicated a one factor structure (see Appendix C.1). Items were combined into a single measure ($\alpha = .71$).

Technology-related anxiety (Rosen et al., 2013). Five items measured anxiety if unable to use social technologies: texting, telephone, social networking, private email, work email. They were measured on a 4-item Likert scale from 1 = “*Not anxious at all*” to 4 = “*Highly anxious*”. EFA and parallel analysis (see Appendix C.1) revealed one underlying factor and the items were combined to form a single measure ($\alpha = .74$).

Results

Missing data (0.82%) were imputed using Expectation Maximization (Schafer, 1997). The correlations and descriptive statistics for variables used in Study 1 are in Table 4.1. As seen in Table 4.1, age was negatively associated with both narcissism subtypes, whereas females tended to report higher on vulnerable narcissism and there were no differences on grandiose narcissism. Paired t-tests were used to examine differences in mean social attitudes for the sample. Horizontal individualist attitudes (see Table 4.1) had the highest mean and were significantly higher than vertical collectivist attitudes, $t(470) = 18.18, p < .001$, and vertical individualist attitudes, $t(470) = 20.31, p < .001$. The results were consistent with previous research indicating that Australia is a horizontal individualistic country (Triandis & Gelfand, 1998).

Different patterns of correlations were found for grandiose and vulnerable narcissism. Grandiose narcissism had a small positive correlation with all social and celebrity attitude measures, as well as technology use and anxiety. Vulnerable narcissism, however, was positively associated with vertical social attitudes and celebrity attitudes, positively associated with individualistic important group norms, technology use and anxiety, and negatively associated with important group identification. The associations between narcissism and social factors were further explored using multiple regression analyses. Grandiose and vulnerable narcissism were examined separately with age and gender entered as covariates.

Table 4.1
Zero-Order Correlations and Descriptive Statistics for Narcissism, Social Factors, Age, and Gender

	1	2	3	4	5	6	7	8	9	10	11	12	13	M(SD)
1. Grandiose Narcissism														3.67 (0.76)
2. Vulnerable Narcissism	.69***													3.34 (0.82)
3. VC	.15**	.13**												4.24 (1.02)
4. HI	.23***	.05	-.02											5.39 (0.89)
5. VI	.27***	.16***	.25***	.26***										4.21 (1.16)
6. National norms	.01	-.01	-.26***	.15**	-.12**									4.43 (0.61)
7. National group ID	<.01	-.05	.20***	-.08	.15**	-.16***								3.28 (0.82)
8. Important group norms	.04	.11*	-.15**	-.07	.03	.02	-.11*							3.48 (0.83)
9. Important group ID	-.01	-.15**	.09	.12**	.07	.12*	.13**	-.43***						4.32 (0.75)
10. Celebrity attitudes	.27***	.30***	.07	-.02	.10*	-.13**	.07	-.01	-.08					2.19 (0.94)
11. Technology use	.23***	.26***	.08	.01	.12**	-.06	.04	.03	-.01	.22***				6.79 (4.61)
12. Technology anxiety	.34***	.35***	.01	-.03	.10*	-.08	.02	.03	-.02	.18***	.38***			1.78 (0.60)
13. Age	-.33***	-.24***	.05	-.10*	-.09*	.07	.02	.06	-.04	-.20***	-.31***	-.30***		25.67 (10.09)
14. Gender	.02	-.10*	.01	-.05	.07	-.05	-.02	.02	-.05	-.08	-.13**	-.11*	.14**	-

Note: VC = Vertical collectivism, HI = Horizontal Individualism, VI = Vertical individualism, ID = Identification. Gender coded 1 = Male, 0 = Female. National and important group norm variables coded such that higher values indicate more self-focused/individualistic norms. * $p < .05$. ** $p < .01$. *** $p < .001$.

Grandiose narcissism model. The model for grandiose narcissism accounted for 31% of the variance, $R^2 = .31$, $F(12, 457) = 17.27$, $p < .001$ and is depicted in Table 4.2. Grandiose narcissism related to individualist attitudes, supporting Hypothesis 1, and to vertical attitudes. There was partial support for Hypothesis 3, as grandiose narcissism was significantly associated with individualistic national norms, but not to important group norms. Hypothesis 4 was not supported, as grandiose narcissism was associated with national but not important group norms. Hypothesis 5 was not supported by the model as group identification was not significantly associated with grandiose narcissism. Grandiose narcissism was significantly associated with higher levels of celebrity engagement, supporting Hypothesis 6.

Finally, grandiose narcissism was not associated with daily technology use when controlling for the other variables in the model, but was associated with anxiety regarding not accessing technology use. These findings do not support Hypothesis 7, which proposed that narcissism would be associated with greater use, but do support Hypothesis 8, which proposed that narcissism would be associated with anxiety regarding technology. Age was negatively associated with grandiose narcissism, and gender had a small positive association indicating males may be slightly higher in grandiose narcissism.

Table 4.2

Multiple Regression Analysis Predicting Grandiose Narcissism

Variable	β	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>semipartial</i> <i>r</i>
Age	-.22	-.02	<.01	-5.18	.000	-.20
Gender	.09	.15	.07	2.29	.023	.09
HI Attitudes	.17	.15	.04	4.09	.000	.16
VI Attitudes	.15	.10	.03	3.48	.001	.14
VC Attitudes	.15	.11	.03	3.56	.000	.14
National Norms	.10	.13	.05	2.41	.016	.09
National ID	-.03	-.02	.04	-0.64	.525	-.03
Important Group Norms	.06	.05	.04	1.36	.174	.05
Group ID	-.03	-.03	.05	-0.58	.559	-.02
Celebrity Attitudes	.18	.14	.03	4.32	.000	.17
Technology Use	.01	<.01	.01	0.29	.770	.01
Technology Anxiety	.24	.303	.06	5.53	.000	.21

Note. $N = 471$. Gender coded as *Male* = 1, *Female* = 0. HC = horizontal collectivist, VC = vertical collectivism, HI = horizontal individualism, VI = vertical individualism. Descriptive norm variables are coded such that higher values indicate more individualistic norms.

Vulnerable narcissism model. The model accounted for 26% of the variance in vulnerable narcissism, and all significantly contributed to the model, $R^2 = .26$, $F(12, 457) = 13.41$, $p < .001$. Hypothesis 2 was partially supported, as vulnerable narcissism was predicted by higher vertical collectivist attitudes, but not by vertical individualist attitudes. There was partial support for Hypothesis 3, as vulnerable narcissism had a small significant association with national norms, but there was no support for Hypothesis 4, as important group norms did not relate to narcissism. Hypothesis 5 was partially supported, as vulnerable narcissism related to lower identification with important groups, but not national group. Similar to the findings for grandiose narcissism, celebrity attitudes were positively associated with

Table 4.3

Multiple Regression Analysis Predicting Vulnerable Narcissism

Variable	β	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>part r</i>
Age	-.12	-.01	<.01	-2.63	.009	-.11
Gender	-.04	-.07	.07	-1.01	.311	-.04
HI Attitudes	.03	.03	.04	0.70	.482	.03
VI Attitudes	.08	.06	.03	1.73	.085	.07
VC Attitudes	.16	.13	.04	3.63	.000	.15
National Norms	.10	.13	.06	2.31	.021	.09
National ID	-.07	-.07	.04	-1.69	.092	-.07
Important Group Norms	.08	.07	.05	1.66	.097	.07
Group ID	-.13	-.14	.05	-2.78	.006	-.11
Celebrity Attitudes	.21	.18	.04	4.91	.000	.20
Technology Use	.06	.01	.01	1.38	.168	.06
Technology Anxiety	.24	.33	.06	5.41	.000	.22

Note. *N* = 471. Gender coded as *Male* = 1, *Female* = 0. HC = horizontal collectivist, VC = vertical collectivism, HI = horizontal individualism, VI = vertical individualism. Descriptive norm variables are coded such that higher values indicate more individualistic norms.

vulnerable narcissism, supporting Hypothesis 6. Hypothesis 7 was not supported as vulnerable narcissism was not associated with technology use, but Hypothesis 8 was supported as it related to technology-related anxiety.

Discussion

The results indicate that although there are overlaps in the association of narcissism subtypes with social norms, attitudes, and technology, there are also differences. Controlling for age and gender, grandiose narcissism related to individualistic and vertical attitudes, whereas vulnerable narcissism related to vertical collectivism. Contrary to hypotheses, although narcissism subtypes were associated with more individualistic national norms, they were not associated with important group norms, or national group identification. In line with previous research, which indicates

that vulnerable narcissism is associated with less devotion to groups (Bizumic & Duckitt, 2008), vulnerable narcissism was associated with lower identification with the participants' important group

Expanding on previous findings, it appears celebrity attitudes are associated with both vulnerable and grandiose narcissism subtypes. These models indicate that although narcissism is not associated with greater daily use of social technologies, it is associated with higher levels of anxiety if individuals could not access social technologies. The findings are consistent with previous research (e.g., Turkle, 2011), which indicates that social technologies may play an important role in helping people with higher levels of narcissism meet their needs for external validation.

Although the findings of this study indicate that grandiose and vulnerable narcissism are associated with different ways of engaging with the social world, they are limited, as they do not indicate whether social factors predict or influence narcissism over time. As personality and behaviors are slow to change over time, we conducted a follow up study approximately six months after Study 1, as past research has indicated that this is a sufficient timeframe in which to see change in personality and behavior (e.g., Grilo et al., 2004; Lally, van Jaarsveld, Potts, & Wardle, 2009).

Study 2

Method

Participants. Participants who completed the survey from Study 1 were given the option of being contacted approximately six months later to complete a follow-up survey. A minimum of 200 participants were required based on recommendations for path analysis and SEM modelling (e.g. Boomsma & Hoogland, 2001; Kline, 2005). Of the participants identified in the initial sample of Study 1 ($N = 471$), 75 (15.7%) indicated they did not wish to be contacted for follow-up, and of remaining participants, 223 attempted the survey (attrition rate of 44.67%). 207 Australian participants with

complete demographic data completed the survey used in Study 1 and the follow-up study. The sample comprised of 152 (72.7%) female participants, with a mean age of 28.76, $SD = 12.26$). Overall, the participants who completed Study 2 were significantly older ($M = 28.78$, $SD = 12.28$) than those who did not ($M = 23.22$, $SD = 7.07$), $t(310.39) = 5.82$, $p < .001$. There were no gender differences between the groups, $\chi^2(1, 471) = 2.41$, $p = .120$. Grandiose narcissism was slightly lower in participants who completed the follow up survey ($M = 3.55$, $SD = .76$) compared to participants who did not ($M = 3.76$, $SD = .74$), $t(469) = -3.13$, $p = .002$. Vulnerable narcissism was also slightly lower in participants, who completed the follow up survey ($M = 3.23$, $SD = .81$) compared to participants who completed Time 1 only ($M = 3.42$, $SD = .81$), $t(469) = -2.48$, $p = .014$.

Materials and procedure. Participants completed an online survey as outlined in Study 1 (see Appendix A for full measures used). They were then sent an email with a link to a follow-up survey that contained the measures outlined in Study 1. Participants completed the second survey approximately six months after their completion of Study 1 (the mean time between completion was 5.69 months, $SD = 1.13$ months). Following completion of the follow-up study, participants were debriefed about the nature of the study.

Results

Expectation maximization (Schafer, 1997) was used to impute missing data (5.31%) for both phases (Little, 2013). Mean values for variables and correlations between Time 1 and Time 2 variables are in Table 4.4 (see also Appendix C.2). The narcissism subtypes and social variables appeared to be moderately to strongly correlated between Time 1 and Time 2 measurements. We investigated whether the measures included in Study 2 were invariant over time. Configural and metric models examined whether the factor structure and pattern of factor loadings, respectively, were equivalent across Time 1 and Time 2, and are detailed in Appendix C.3. Overall, the

findings indicated that the measures were invariant across the time points, however a small amount of variance was found in vertical collectivism.

To evaluate whether social factors and narcissism changed over time, two types of analyses were used to examine rank-order and absolute changes in narcissism. We used cross-lagged path analyses to examine whether Time 1 variables predicted narcissism at Time 2. This was supplemented by a modified version of latent change score (LCS) modelling to examine whether Time 1 variables predicted absolute change within either narcissism subtype. These analyses were chosen to examine whether individuals' scores on narcissism changed in relation to others in the sample, and whether the sample changed in its mean level of narcissism. As outlined by several previous studies (e.g., Specht, Egloff, & Schmukle, 2011), combining different approaches to measuring personality change can facilitate a richer understanding of how personality variables change over time.

Path Analysis. Three models were proposed to examine narcissism over time. First, a model of grandiose and vulnerable narcissism was tested to examine whether grandiose and vulnerable narcissism predicted one another over time. Following this, separate cross-lagged models were calculated to examine the relationship between each narcissism subtype and its significant predictors from Study 1 (structural equation models were constructed using the strongest predictors for each narcissism subtype, but a similar pattern of results was found. See Appendix C.4). A separate path analysis that

Table 4.4
Correlations between Time 1 and Time 2 Social variables and Narcissism Subtypes

	Time 1												Time 2	
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	M(SD)	M(SD)
1. Grandiose Narcissism	.79***	.54***	.08	-.04	.03	-.02	.04	.22**	.21**	.20**	.21**	.20**	3.55(0.76)	3.52(0.72)
2. Vulnerable Narcissism	.56***	.81***	.13	-.07	.02	-.04	.06	.11	.15*	.29***	.19**	.25***	3.23(0.81)	3.23(0.83)
3. National Norms	-.03	-.01	.61***	-.28***	.01	.13	-.27***	.15*	-.06	.02	.04	.04	4.51(0.65)	4.52(0.64)
4. National ID	.09	<.01	-.18**	.51***	.05	.01	.22**	-.06	.16*	.06	.06	.13	3.38(0.86)	3.26(0.81)
5. Group Norms ^a	.09	.14	.03	.02	-.53***	.26**	.14	-.05	.11	.11	.02	<.01	3.42(0.80)	4.66(1.04)
6. Group ID ^a	<.01	-.08	.17	<.01	-.41***	.37***	.02	.22*	.04	.10	<.01	-.15	4.39(0.69)	4.39(0.74)
7. VC	.16*	.17*	-.21**	.21**	-.24**	.12	.70***	-.08	.17*	.09	-.09	.03	4.22(1.02)	4.31(0.99)
8. HI	.25***	.05	.17*	-.11	-.10	.10	-.13	.64***	.15*	.06	-.02	.01	5.45(0.89)	5.45(0.83)
9. VI	.16*	.11	-.01	.08	-.04	.15	.12	.08	.60***	.15*	-.04	.14*	4.10(1.15)	4.02(1.11)
10. Celebrity Attitudes	.26***	.36***	-.06	.06	.08	.06	.07	-.07	.05	.74***	.14*	.07	2.09(0.94)	2.19(0.89)
11. Technology Anxiety	.19**	.25***	.07	-.05	-.05	.08	-.14*	-.06	-.05	.19**	.63***	.21**	1.67(0.58)	1.66(0.53)
12. Technology Use	.23***	.30***	.04	-.06	-.10	.18	.03	.05	.05	.17*	.23**	.71***	6.02(4.02)	5.67(3.39)

Note. Correlations are displayed such that rows represent Time 2 variables, and columns represent Time 1 variables. Correlations between Time 1 and Time 2 for each variable are identified in bold. ^a important group norms and group identification were calculated with individuals who had identified the same important group at Time 1 and Time 2 $n = 112$, all other variables $N = 207$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Time 2 was grandiose narcissism at Time 1. In addition, grandiose narcissism did not significantly predict Time 2 social factors, aside from vertical collectivism ($\beta = .12, p = .01$).

Vulnerable Narcissism model. The model for vulnerable narcissism included vertical collectivism, national norms, celebrity attitudes and technology anxiety, as these were the significant predictors of vulnerable narcissism in Study 1. Overall the model (Figure 4.2) had acceptable fit, $\chi^2(20) = 36.04, p = .015$; CFI = .98, TLI = .94, RMSEA = .062 (90% CI = .027, .095), SRMR = .044. This model indicates Time 2 vulnerable narcissism was only significantly predicted by Time 1 vulnerable narcissism, but Time 1 vulnerable narcissism was also significantly associated with Time 2 vertical

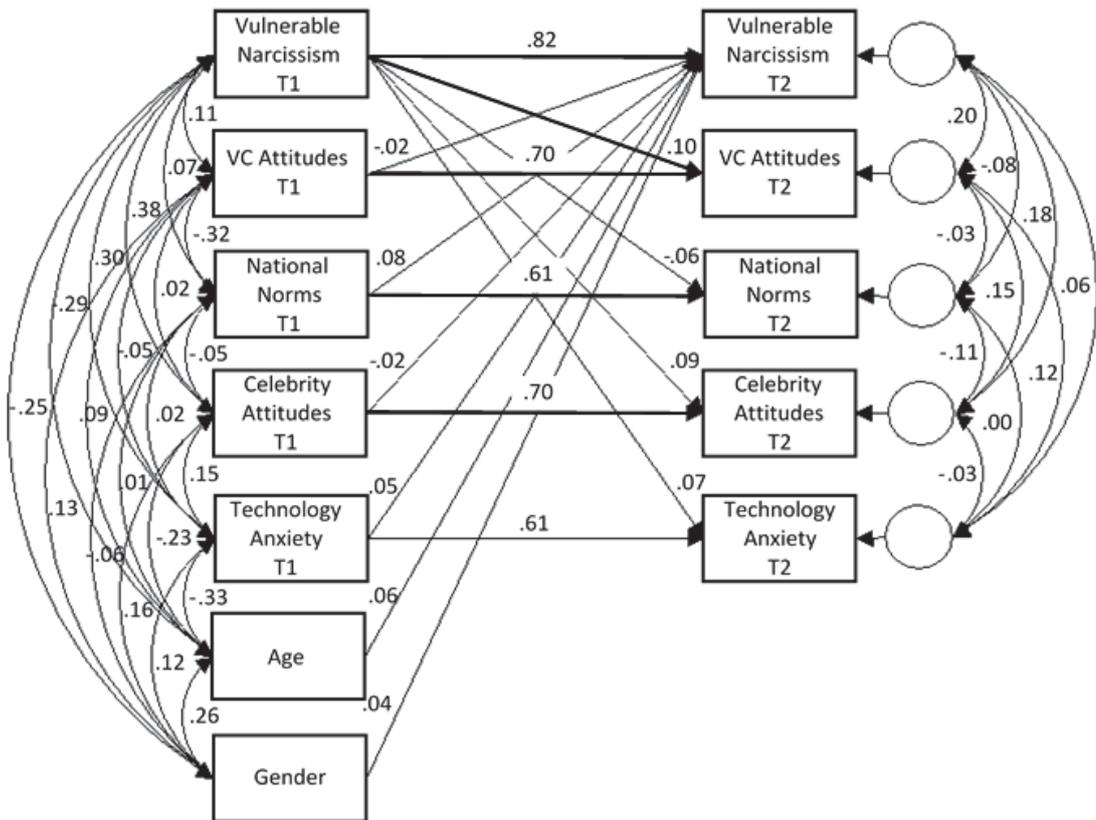


Figure 4.2. Cross-lagged model of vulnerable narcissism, vertical collectivist attitudes, national norms, celebrity attitudes, technology anxiety, age and gender. Paths significant at $p < .05$ are indicated by bolded lines.

collectivism ($\beta = .10, p = .038$), and its association with Time 2 national norms was marginally significant ($\beta = .08, p = .058$).

Change Scores. A modified version of latent change score (LCS) modelling (see Brandt, Wisneski, & Skitka, 2015) was used to examine whether social variables significantly associated with narcissism at Time 1 predicted change of narcissism across the two time periods. Observed scores were used to predict the latent change, using the method outlined by Brandt et al. (2015), due to the constraints of the available sample size. Latent change score (LCS) modelling was used to examine whether social variables significantly associated with narcissism at Time 1 predicted change of narcissism across the two time periods. Due to the constraints of the available sample size, observed scores were used to predict the latent change, using the method outlined by Brandt, Wisneski, and Skitka (2015). A saturated model was created for each variable using Mplus, with age and gender entered as covariates, and mean centered for age (see Appendices C.5 and C.6). As seen in Table 4.5, significant change was only found for celebrity attitudes and important group norms. Although most variables were found to have no significant mean change at $p < .05$, all variables were found to have significant variance, indicating significant heterogeneity across the two time points for the sample.

To examine the association between Time 1 narcissism and social attitudes, and whether social attitudes predicted change in narcissism, Time 1 social attitude variables predictive of each narcissism subtype were entered into the change score model for each narcissism subtype. As seen in Table 4.6, higher vertical and horizontal individualist attitudes, celebrity attitudes, and technology anxiety were positively associated with Time 1 grandiose narcissism. Technology anxiety has a small significant negative association with change in grandiose narcissism, indicating higher anxiety was associated with decrease in grandiose narcissism when controlling for the other

Table 4.5

Estimated Time 1 -> Time 2 Change and Residual Variance of Narcissism and Social Norms and Attitudes

Variable	Estimated Average Change	Residual Variance
Grandiose Narcissism	-0.038 (0.039)	0.229 (0.023)***
Vulnerable Narcissism	-0.026 (0.041)	0.254 (0.025)***
Vertical Collectivism	0.123 (0.063) [^]	0.592 (0.058)***
Horizontal Individualism	0.026 (0.060)	0.525 (0.052)***
Vertical Individualism	-0.071 (0.083)	1.031 (0.101)***
National Group Norms	0.023 (0.047)	0.322 (0.032)***
National Identification	-0.108 (0.067)	0.655 (0.064)***
Important Group Norms ^a	1.120 (0.173)***	2.490 (0.333)***
Group Identification ^a	0.016 (0.083)	0.577 (0.077)***
Celebrity Attitudes	0.126 (.055)*	0.441 (0.043)***
Technology usage	-0.451(0.237) ^{^^}	8.298 (0.816)***
Technology Anxiety	0.017 (0.039)	0.227 (0.022)***

Note. Effects reported are unstandardized, standard errors are reported in parentheses. ^a

= important group norms and group identification were calculated with individuals who had identified the same important group at Time 1 and Time 2 $n = 112$, all other variables $N = 207$. Gender (coded as *Male* = 1, *Female* = 0) and age included as covariates in each analysis, see supplemental materials for full models of each variable.

^{^^} $p = .057$, [^] $p = .052$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4.6

Association between Social Attitudes and Change Scores in Grandiose Narcissism and Vulnerable Narcissism

Model 1	Grandiose Narcissism	Δ Grandiose Narcissism
Age	-0.015 (0.004)***	0.001 (0.003)
Gender	0.085 (0.103)	0.021 (0.076)
HI	0.184 (0.054)***	-0.057 (0.040)
VI	0.099 (0.042)**	-0.032 (0.031)
VC	0.085 (0.047)	-0.027 (0.034)
National Norms	0.077 (0.073)	0.067 (0.054)
Celebrity attitudes	0.142 (0.049)**	-0.027 (0.036)
Technology Anxiety	0.291 (0.081)***	-0.146 (0.060)*
Intercepts	0.633 (0.513)	0.512 (0.377)
Residuals	0.396 (0.039)***	0.214 (0.021)***
Grandiose narcissism <-> Δ Grandiose narcissism		-0.099 (0.021)***
Model 2	Vulnerable narcissism	Δ Vulnerable narcissism
Age	-0.009 (0.004)*	-0.003 (0.003)
Gender	-0.292 (0.112)**	0.106 (0.081)
VC	0.153 (0.050)**	-0.037 (0.036)
National Norms	0.171 (0.077)*	0.068 (.056)
Celebrity attitudes	0.256 (0.053)***	-0.054 (0.038)
Technology Anxiety	0.270 (0.088)**	-0.139 (0.063)*
Intercepts	.906 (0.496)^	0.167 (0.356)
Residuals	0.466 (0.046)***	0.240 (0.024)***
Vulnerable narcissism <-> Δ Vulnerable narcissism		-0.072 (0.024)**

Note. $N = 207$. Effects reported are unstandardized, standard errors are reported in

parentheses. Δ = average estimated change, HI = Horizontal individualism, VI =

Vertical Individualism, VC = Vertical Collectivism. Gender coded as *Male* = 1, *Female*

= 0. See supplemental materials for syntax. ^ $p = .068$. * $p < .05$. ** $p < .01$. *** $p <$

.001.

variables in the model. Time 1 vulnerable narcissism was associated with higher vertical collectivist and celebrity attitudes, and anxiety about not accessing social technologies. As with grandiose narcissism, technology anxiety was significantly related to change in vulnerable narcissism. Overall, the models indicate that although social technology anxiety is associated with a decrease in narcissism, social attitudes associated with narcissism such as vertical and individualist attitudes were not associated with change in narcissism over a six-month period.

Discussion

Study 2 aimed to examine whether the social factors associated with narcissism in Study 1 predicted narcissism across time. The only significant predictor of Time 2 narcissism was Time 1 narcissism, but both narcissism subtypes at time 1 predicted higher Time 2 vertical collectivism, a social attitude associated with competition with other social groups. Although a significant amount of variance was found for all variables, indicating that there was significant heterogeneity of change within the sample, none of the social factors associated with narcissism at Time 1 predicted narcissism at Time 2. Nevertheless, both LCS models indicate a small negative association between anxiety regarding social technologies and change in narcissism when controlling for age, gender, and other social factors associated with narcissism. Overall, these findings indicate that narcissism was stable over the two time points measured, and social attitudes were not predictive of narcissism over time.

General discussion

This research examined the associations between narcissism and social attitudes, norms, and social technology use in an Australian sample, and investigated whether social variables predicted change over a six-month period. Study 1 indicated that grandiose and vulnerable narcissism were associated with different patterns of social variables. Grandiose narcissism was associated with horizontal and vertical individualist

attitudes, celebrity attitudes, individualistic national norms, and anxiety when not able to access social technologies. Vulnerable narcissism, by contrast, was associated with vertical collectivist attitudes, individualistic national group norms, celebrity attitudes, anxiety when not able to access social technologies, and less identification with self-nominated important groups. As seen in Study 2, there was no significant mean-level change in narcissism at Time 2 six months later, and the social factors significantly associated with narcissism in Study 1 did not predict narcissism over these two time points; however, small associations were found between each narcissism subtype and vertical collectivist attitudes at Time 2. As such, Study 2 indicates that over the six months, narcissism and social factors were relatively stable, and social factors did not predict changes in narcissism.

Social Attitudes and Narcissism

Participants endorsed horizontal individualist attitudes significantly higher than other social attitudes surveyed, consistent with previous research indicating that Australia is a horizontal individualist society (Singelis et al., 1995). Vulnerable and grandiose narcissism were associated with different patterns of social attitudes. Grandiose narcissism was associated with vertical and individualistic attitudes (supporting Hypothesis 1), and most strongly with horizontal individualism. Vulnerable narcissism, however, was only associated with vertical collectivist attitudes, supporting Hypothesis 2. Although grandiose narcissism has previously been linked with vertical individualism (e.g., Foster et al., 2003), vulnerable narcissism has not been examined in relation to social attitudes. These findings expand on previous research, and indicate that attitudes regarding status and self-focus are associated with different aspects of narcissism. As such, vertical social attitudes should be considered in addition to individualism in the study of norms and narcissism. Individualist attitudes were not associated with narcissism over time; however, both narcissism subtypes predicted

vertical collectivist attitudes at Time 2. Suggest that narcissism may predict attitudes of sacrificing self-interest for the improvement of an individual's group. This may reflect facets of narcissism measured by the PNI such as self-sacrificing self-enhancement. However, these findings should be interpreted with caution: it is possible that the weak association is an artifact of the measurement variance found in vertical collectivism scale. Overall, the findings suggest that changes in narcissism may not be related to social attitudes and norms, or may occur over a longer period of time.

Celebrity attitudes were strongly associated with both narcissism subtypes in the sample, supporting Hypothesis 6. There have been mixed findings across samples in previous studies (Ashe et al., 2005), and research has focused on more pathological elements of celebrity worship. Our findings indicate that an interest in celebrity culture in the context of entertainment is positively associated with narcissism in an Australian sample; however, this does not appear to predict changes in narcissism over time.

Group Norms and Identification

Contrary to hypotheses, both narcissism subtypes were associated with individualistic national norms, but were not associated with important group norms. Although previous research has linked individualistic social norms to increases in narcissism, these findings indicate that the norms of groups important to the participants were not associated with narcissism. These findings are consistent with previous work (e.g., Fischer et al, 2009), which suggests that norms measured as personal preferences are more strongly associated with self-focused behaviors, whereas descriptive norms are more associated with group-focused behaviors, such as traditions. These findings suggest that the association between narcissism and individualism may be internally, rather than externally, driven. It is important to note that these findings may also be influenced by the use of self-report measures for group norms; it is not possible to establish whether participants' groups have more individualistic norms, or whether

participants higher in narcissism perceive them as such. Further research using other-reports (such as friends or family members) may provide useful clarification. No significant association was found between narcissism and group norms in Study 2.

Group identification was not associated with grandiose narcissism, but a small association was found between vulnerable narcissism and lower identification with important groups. Vulnerable narcissism as measured by the PNI contains items which measure the tendency to devalue others, and this may account for the relationship between vulnerable narcissism and lower group identification. The association was not found in relation to the national group, indicating that narcissism may affect identification with some groups, but not others. It is also possible that this finding reflects a sense of isolation, which has sometimes been associated with narcissism in clinical studies of the construct (e.g., Kohut, 1971/2009). Vulnerable narcissism as measured by the PNI (Pincus, et al., 2009) also contains items measuring the degree to which one hides their needs from others as they are concerned their needs will not be met. The association between vulnerable narcissism, low identification with important groups, and perception of more individualistic norms may reflect this desire to hide perceived vulnerability from others.

Social Technology

Examination of social technology use and anxiety when not able to use technology revealed that narcissism was not associated with greater use of social technologies, but it was associated with higher anxiety when not able to use social technologies. These findings may suggest that people with higher narcissism place greater value on accessing social technologies. This is consistent with previous work (e.g., Rosen et al., that highlights the role technology plays in helping individuals with higher narcissism meet their needs for validation and attention from others (Turkle, 2011). Anxiety regarding social technology use was significantly associated with a

decrease in narcissism subtypes when controlling for other social factors, age and gender. This finding may be due to a third, unmeasured variable. For example, it may reflect participants broader relational functioning and their use of social technology to stay connected with others. Further research into narcissism, anxiety, and connection with others is required to better understand this relationship.

Limitations

There are several limitations to this research. The higher mean age of the participants who completed both phases in Study 2 may have impacted our measurement of change (Krosnick & Alwin, 1989), as greater change is associated with younger age groups. It is possible that social factors do influence narcissism over time, but with a very small effect, which we were not able to detect with the smaller sample size of Study 2. In addition, the findings may have been influenced by the study's reliance on self-report measures of attitudes and norms. As outlined by Oyserman, Coon, and Kimmelmeier (2002), the use of self-reports to measure norms and attitudes are limited, as they are only able to capture what participants are aware of in their environment. A final consideration is the limitation of only examining narcissism and social factors over two time points. In recent years analyses such as random integer cross lagged path analyses (Hamaker, Kuiper, & Grasman, 2015) have been recommended for examining traits over time; however, this analysis, similar to other longitudinal techniques, such as growth curve analysis, requires three or more time points.

Future research should aim to include other sources of information regarding norms, such as report data or behavioral measures and examine the relationship between variables over three or more time points. In addition, the PNI (Pincus et al., 2009) has been criticized as being a stronger measure of vulnerable narcissism than grandiose narcissism (e.g., Krizan & Herlache, 2017). Future studies should also include

additional measures of narcissism or consider using facet level analyses of the PNI to further explore how this personality construct is related to social factors.

Conclusions

This chapter aimed to examine how narcissism subtypes relate to different social factors. Our findings suggest that grandiose and vulnerable narcissism are associated with different patterns of social attitudes, technology use, and descriptive norms; however, these variables do not appear to influence narcissism over time. Both narcissism subtypes were associated with increased anxiety regarding inability to access social technologies, individualistic national norms, greater engagement with celebrity culture, and vertical attitudes regarding social status; however, grandiose narcissism was also associated with individualistic attitudes, whereas vulnerable narcissism was associated with less identification with important groups. Narcissism was found to be highly stable over a period of six months and not significantly influenced by the social factors measured. Overall, these findings indicate that in trying to maintain a positive sense of self, grandiose and vulnerable narcissism are associated with different ways of engaging with the social world. These findings have implications for ongoing research into the intersection between personality and social groups, as well as informing the ongoing development of treatment for individuals with high levels of narcissism.

Chapter 5: Social Status, Entitlement, and Narcissism in an Australian Context

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As demonstrated in Chapter 4, narcissism is associated with vertical social attitudes, which are concerned with status in society. In addition, there is some evidence to suggest that narcissism is also associated with socioeconomic status (SES) in U.S. (e.g., Belmi & Laurin, 2016) and Chinese samples (Cai et al., 2012); however, this has not been examined in Australia. Piff's (2015) findings indicate that socioeconomic status is associated with grandiose narcissism, and that priming egalitarian norms reduces reported narcissism in high-SES individuals. In line with the aims of this thesis, the current chapter describes an extension of Piff's (2015) experimental study, which examines associations between SES and grandiose and vulnerable narcissism using an Australian sample. We also examine whether egalitarian priming reduces reports of narcissism.

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Abstract

Narcissism is associated with status seeking and higher socioeconomic status (SES). Previous studies examining the relationship between grandiose narcissism and SES indicate that inducing egalitarian values may reduce reported narcissism (Piff, 2015); however, this relationship has not been examined in Australia, and the association between vulnerable narcissism and SES is unclear. This study expands on Piff's (2015) study using 194 Australian university students. We examined the relationship between narcissism subtypes, entitlement, social dominance orientation, and SES, and examined whether priming egalitarian values reduces grandiose and vulnerable narcissism in an Australian sample. Contrary to our hypotheses, SES was not associated with narcissism or entitlement. The findings indicate that the relationship between narcissism, status, and entitlement is more complex than previously thought.

Keywords: Narcissism, personality, social status, entitlement

Social Status and Narcissism in an Australian Context

Narcissism has long been associated with social status. Research has primarily focused on status-seeking behavior associated with narcissism, such as wanting to occupy positions of power (Deluga, 1997; Paunonen, Lönnqvist, Verkasalo, Leikas, & Nissinen, 2006). More recently, researchers have begun to examine how status and hierarchy may influence levels of narcissism. For example, Piff (2015) indicates that attitudes of entitlement mediate the link between status and narcissism, and that priming can reduce narcissism for high-status individuals. Although the relationship between grandiose narcissism and social factors has been explored (e.g., Cai, Kwan, & Sedikides, 2012), little attention has been paid to the role of social status or the influence of social factors on vulnerable narcissism. This study aims to examine whether narcissism subtypes are related to socioeconomic status in an Australian context, and whether priming egalitarian norms moderates this association.

Narcissism is a dimensional personality construct characterized by attitudes and behaviors such as seeing oneself as unique or superior to others, grandiosity, exploitation of others, and excessive self-focus and desire for admiration (e.g., Miller, Lynam, Hyatt, & Campbell, 2017). Current conceptualizations of narcissism identify two subtypes: grandiose narcissism, associated with admiration-seeking, exploitation of others, low empathy, and aggression, and vulnerable narcissism, associated with increased sensitivity to interpersonal slights, and low self-esteem (e.g., Pincus & Roche, 2011). Narcissism is considered a stable personality construct, which may fluctuate between grandiosity and vulnerability (e.g., Pincus & Lukowitsky, 2010); however, some studies indicate that levels of narcissism, and behaviors associated with narcissism can be altered by priming communal attitudes or values (e.g., Finkel, Campbell, Buffardi, Kumashiro, & Rusbult, 2009; Giacomini & Jordan, 2014; Piff, 2015). In other words, encouraging individuals to consider others and group benefits may reduce

aspects of narcissism, which has significant implications for self-focused narcissistic behaviors such as status seeking.

Narcissism and Hierarchy

Grandiose narcissism is associated with a variety of status-seeking behaviors and attitudes, including the pursuit positions of power and leadership (e.g., de Vries & Miller, 1985; Grijalva, Harms, Newman, Gaddis, & Fraley, 2014), entitlement (e.g., Emmons, 1987), and culturally-bound displays of status (e.g., material wealth; Twenge & Campbell, 2010). In addition, grandiose narcissism is associated with endorsing hierarchy if it allows the possibility of upward movement in the hierarchy (Zitek & Jordan, 2016). Narcissism appears to be higher in individuals with high status, such as celebrities, though the degree of narcissism is not influenced by the length of time they have worked in their profession (Young & Pinsky, 2006). This may indicate that individuals with higher narcissism are drawn to celebrity status, rather celebrity status leading to higher narcissism. Overall, research from several areas indicates that narcissism is associated with the pursuit of status and positions of power.

In addition to status-seeking behavior, narcissism is associated with higher socioeconomic status (SES) in U.S. (e.g., Belmi & Laurin, 2016; Zitek & Jordan, 2016) and Chinese samples (e.g., Cai et al., 2012). Examining this relationship, Piff (2015) found that grandiose narcissism was positively correlated with SES in U.S. samples, entitlement attitudes mediated the relationship between SES and narcissism, and self-reported narcissism was significantly lower in high-SES individuals who were exposed to an egalitarian values priming condition compared to those in a control condition. Personality variables are often included alongside SES as independent or covariate variables in psychological research (e.g., Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007), but Piff's (2015) findings indicate that narcissism and status may be linked by social values or attitudes.

Narcissism and Social Attitudes

Narcissism is associated with two key attitudes regarding the endorsement of social hierarchy – entitlement and social dominance orientation (SDO). They are related but distinct attitudes: entitlement refers to an individual's belief that they deserve to be treated better than others, whereas SDO reflects beliefs that certain groups in society are superior (Sidanius & Pratto, 1999). Both attitudes have been associated with narcissism and perceived social status (Hodson, Hogg, & MacInnis, 2009; Piff, 2015; Zitek & Jordan, 2016). Furthermore, it appears that because people with higher narcissism seek out leadership and positions of power, they support structures that create roles which may enable them to gain power (Zitek & Jordan, 2016).

Entitlement is a core aspect of narcissism in both clinical and social-personality descriptions, but there is ongoing debate about how to measure it (e.g., Brown, Budzek, & Tamborski, 2009), what is captured by those measures (Ackerman & Donnellan, 2013), and whether entitlement reflects grandiose or vulnerable narcissism. Entitlement is conceptualized in different ways in key measures of narcissism: the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988) examines deservingness, the Psychological Entitlement Scale (PES; Campbell, Bonacci, Shelton, Exline, & Bushman, 2004) looks at deservingness and entitlement, and the Pathological Narcissism Inventory (PNI; Pincus et al., 2009) measures entitlement rage (anger at not receiving what one believes they deserve). A detailed examination of the relationship between narcissism and entitlement is beyond the scope of this study; however, entitlement is included as a separate variable, as Piff (2015) indicates that it mediates the relationship between status and narcissism.

Social and Cultural Context

Broad cultural influences may affect the relationship between social status and narcissism (Grossmann & Varnum, 2010; Pearlin & Kohn, 1966). There is evidence that

the relationship is culturally bound, with different cultures displaying different relationships between class and values (e.g., Grossmann & Varnum, 2010). For example, in U.S. samples, high-status individuals display more individualistic behaviors than people with average or low status (Grossmann & Na, 2014; Grossmann & Varnum, 2010). This finding was supported in Piff (2015), where higher SES was associated with higher levels of entitlement, which in turn was associated with higher levels of narcissism. As such, it is important to consider how cultural context may impact attitudes towards status and the relationship between narcissism and status.

Attitudes regarding social status have been examined at individual, class, and cultural levels to understand the complex interaction between different values and social contexts (Grossmann & Na, 2014). At a cultural level, most research has focused on orientations of different groups, and the perception of status within these groups. A common framework is to distinguish between individualism and collectivism—the independence or interdependence of the group members' sense of self, values, and motivations—and between horizontal and vertical orientations of social equality or status in different cultures (e.g., Singelis, Triandis, Bhawuk, & Gelfand, 1995). Within vertically individualistic cultures, such as the U.S., status is associated with individual achievement and material wealth – factors also associated with narcissism (e.g., Twenge & Campbell, 2010). By contrast, within horizontally individualistic cultures, such as Australia, equality is emphasized, with overt displays of status discouraged in favor of distinctiveness and self-reliance (Shavitt, Lalwani, Zhang, & Torelli, 2006; Singelis et al., 1995; Triandis & Gelfand, 1998).

Social values at a group level (such as at a cultural level or within a high-status social group) do not necessarily translate to individual behavior within that group (see Grossmann & Na, 2014). However, the examination of status at an individual level (i.e., what individuals identify that they do or do not do) provides important information

about individual internalization of social values, and how this influences behavior. This study examines whether priming egalitarian values can reduce an individual's level of entitlement, and subsequently their level of narcissism, as suggested in previous studies (Piff, 2015), or whether narcissism remains unchanged, in line with trait conceptualizations.

The Current Study

This study aimed to expand on previous work in three ways. First, it examined the relationships of both grandiose and vulnerable narcissism to social status and attitudes towards status. Second, it examined whether SES would be associated with narcissism in an Australian population, and whether inducing egalitarian norms within an Australian context using the method outlined in Piff's (2015) study could reduce reported narcissism. Although Australia and the U.S. share similar individualistic values (e.g., Oyserman, Coon, & Kemmelmeier, 2002), they differ in social orientations towards status. As such, examining the relationship between narcissism and status in Australia would provide important information on how narcissism and social factors, such as status, interact in different cultures. Third, the study examined the relationship between narcissism, SDO, and entitlement to further our understanding of how narcissism would be related to these attitudes, and whether they would mediate the relationship between social status and narcissism. Participants were allocated to a control or egalitarian prime condition, with narcissism measured as a dependent variable. Entitlement and SDO were included as mediators. In light of findings that higher status is associated with more individualistic behavior within individualistic cultures (Grossmann & Varnum, 2010), we hypothesized that:

H1: In the control condition, higher levels of SES would be positively associated with entitlement and narcissism.

H2: Priming egalitarian values in participants (as in Piff, 2015) would

moderate the relationship between SES and narcissism, such that the level of narcissism would be significantly lower in high-SES participants in the prime condition compared to the control condition, and remain unchanged in low-SES participants. As Australia is considered a horizontally individualistic culture, we expected less reduction than observed in vertically individualistic U.S. samples, due to a reduced cultural focus on status.

Little is known about the association between vulnerable narcissism and social values. Nonetheless, the NPI (Raskin & Terry, 1988), used by Piff (2015) as a measure of grandiose narcissism, and the PNI (Pincus et al., 2009), which would be used to measure vulnerable and grandiose elements of narcissism, share some conceptual overlap for both subtypes. For example, entitlement rage is a facet of vulnerable narcissism in the PNI (Wright, Lukowitsky, Pincus, & Conroy, 2010) and the NPI (e.g., Raskin & Terry, 1988) measures entitlement as a part of grandiose narcissism. Given this overlap, we hypothesized that:

H3: Both vulnerable and grandiose narcissism would decrease among high-SES participants primed with egalitarian values.

As SDO is conceptually opposed to egalitarian attitudes, and based on Piff's (2015) findings, we anticipated that:

H4: SDO (H4a) and entitlement (H4b) would mediate the association between SES and both vulnerable and grandiose narcissism.

H5: SDO would be lower when participants are primed with egalitarian values (H5a), and entitlement would also be lower in the prime condition (H5b), indicating the mediation is moderated by the experimental condition.

Method

Participants

Participants were undergraduate psychology students at an Australian university, made aware of the study through the course of their studies. Participation was optional and course credit was offered for completion of the study. As Piff (2015) found significant effects with a sample of 139 participants, we aimed to collect a minimum 139 participants in this study. The study was approved by the university Human Ethics Research Committee.

Of the initial sample of 278 participants, 11 asked for their responses to be removed from analyses, two were removed for insincere responding, 12 were removed for not completing the survey, and one was removed as a multivariate outlier, leaving a total of 253 participants. Most participants ($n = 196$, 77.47%) identified as Australian nationals; 194 had complete demographic details and were included in the analyses. The sample included 126 (64.9%) female and 68 (35.1%) male participants, whose ages ranged from 18 to 52 ($M = 20.48$, $SD = 4.29$).

Materials and Procedure

The study was administered in an online format. Participants completed demographic and social status questions before being randomly assigned to the control condition or egalitarian values priming condition. The measures and experimental manipulation are as follows (full measures are outlined in Appendix A).

Socioeconomic status. The Brief SES Scale (Griskevicius, Tybur, Delton, & Robertson, 2011) was included as a subjective SES tool. It consists of six questions, measured using a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*). Examples of questions include: “My family usually had enough money for things when I was growing up” and “I grew up in a relatively wealthy neighborhood”. The scale demonstrated adequate reliability (Cronbach’s $\alpha = .73$).

The MacArthur Scale of Subjective SES—Youth Version (Goodman et al., 2001) is a widely-used measure of perceived SES in people aged 16-25. The youth version was used due to the anticipated mean age of participants (18-19 years, the average age of first-year university students), and consists of a picture of a ladder with 10 rungs representing society. Participants were asked to mark where on the ladder they saw themselves in relation to others in society.

Priming items. Following demographic and social status questions, participants were randomly assigned to one of two conditions and presented with questions used in Piff's (2015) fourth study. In the control condition, participants were asked to list three activities they do on an average day. Those in the experimental condition were asked to list three benefits of treating other people as equals. Following the priming condition, all participants completed three scales measuring narcissism and entitlement.

Entitlement. The PES (Campbell et al., 2004) measured entitlement (Cronbach's $\alpha = .88$). It consists of nine items measured using a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*). Examples include: "I honestly feel I'm just more deserving than others" and "I do not necessarily deserve special treatment" (reverse-coded).

SDO. A shortened measure of SDO, composed of the six best positive and negative items from the SDO scale (Sidanius & Pratto, 1999), was included as a measure of group-oriented entitlement (Cronbach's $\alpha = .81$). The items are scored using a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*). Examples include: "It's OK if some groups have more chance in life than others", and "We would have fewer problems if we treated people equally" (reverse-coded).

Narcissism. The PNI (Pincus et al., 2009) was included as a measure of grandiose and vulnerable narcissism (Wright, Lukowitsky, Pincus, & Conroy, 2010). This scale has 52 items that used a 6-point Likert scale (0 = *not at all like me*; 5 = *very*

much like me), and acceptable reliability (Cronbach's $\alpha = .95$). Examples include:

“When people don't notice me, I start to feel bad about myself”, and “I often fantasize about having a huge impact on the world around me”.

Results

Expectation maximization (Schafer, 1997) was used to impute missing data (0.6% missing). The demographics of the experimental and control groups did not significantly differ in terms of Brief SES Scale scores², Control $M = 4.61$, Experimental $M = 4.40$, $t(192) = 1.46$, $p = .147$, age, Control $M = 19.90$, Experimental $M = 20.99$, $t(154.57) = -1.84$, $p = .067$, or gender, $\chi^2(1, N = 194) = 2.37$, $p = .124$. To examine the hypotheses, moderated mediation analyses calculated using SPSS PROCESS Macro (Hayes, 2013) were proposed. The proposed model consisted of SES entered as an independent variable, predicting a narcissism subtype, SDO and PES entered as mediators of this relationship, and experimental condition entered as a moderator of the association between SES and the mediating variables. Age and gender were covariates in each model.

We first assessed whether social status was positively associated with entitlement and narcissism for Australian participants by examining the correlations between these variables in the control condition ($n = 91$). As outlined in Table 5.1, the Brief SES Scale was not significantly correlated with entitlement, SDO, grandiose narcissism or vulnerable narcissism. The MacArthur Scale of Subjective SES had a small positive association with grandiose narcissism in the experimental condition, but not in the control condition. The scale was not found to correlate with any variables other than the brief SES measure. Overall, the findings indicate that social status is not

² There were also no significant differences in MacArthur SES Scale scores between conditions. See Appendix D for analyses using the MacArthur SES Scale.

Table 5.1

Correlations and Descriptive Statistics for Measures of SES, Narcissism, SDO and Entitlement for Australians in Control and Prime Conditions

	1.	2.	3.	4.	5.	6.	7.	8.	9.	Control <i>M(SD)</i>	Prime <i>M(SD)</i>
1. SES full	-	.39***	.13	.10	-.08	-.05	-.09	-.04	-.19	4.61(0.99)	4.40 (1.03)
2. MacArthur SES Scale	.56***	-	.03	.14	.09	.04	.10	.05	-.03	7.04 (1.63)	7.02 (1.48)
3. PES	.03	.01	-	.42***	.37***	.42***	.30**	-.08	.03	2.84 (0.98)	3.05 (0.83)
4. SDO	.17	-.01	.43***	-	.16	.20	.11	.16	-.08	2.13 (0.80)	2.25(0.88)
5. PNI Full	.08	.15	.27**	.05	-	.87***	.96***	.01	-.01	3.34 (0.70)	3.39 (0.62)
6. Grandiose	.18	.20*	.22*	.06	.83***	-	.68***	.06	-.08	3.67 (0.82)	3.68 (0.69)
7. Vulnerable	.02	.11	.27**	.04	.95***	.63***	-	-.03	.04	3.17 (0.72)	3.24 (0.67)
8. Gender	-.02	-.07	.06	.33***	-.04	.16	-.14	-	-.08	0.41 (0.49)	0.30 (0.46)
9. Age	-.22*	-.07	.01	-.05	-.22*	-.23*	-.18	-.04	-	19.90 (2.66)	20.99 (5.29)

Note. Values in top half of the table are correlations for control condition ($n = 91$), values in the bottom half of the table are correlations for the prime condition ($n = 103$). SES = Socioeconomic Status, PES = Psychological Entitlement Scale, SDO = Social Dominance Orientation, PNI = Pathological Narcissism Inventory. * $p < .05$. ** $p < .01$. *** $p < .001$.

significantly associated with entitlement or narcissism in our Australian sample. As such, Hypothesis 1 was not supported.

As outlined by Muller, Judd, and Yzerbyt (2005), a significant association between the independent and dependent variable is a required condition of moderated mediation analysis. Although there was no association between SES and narcissism, the moderated mediation models for each narcissism subtype were run to further examine the association between the variables and are detailed in Table 5.2. As outlined in Table 5.2, exposure to the priming condition was not significantly associated with either narcissism subtype. The interaction between SES and condition was not a significant predictor of grandiose or vulnerable narcissism (Table 5.2). As such, Hypotheses 2 and 3 were not supported.

SES was found to have a small positive association with SDO when controlling for age, gender and condition; however, SDO did not significantly predict either narcissism subtype. Entitlement was a significant predictor of both grandiose and vulnerable narcissism, but was not associated with SES and not significantly associated with condition. As such, Hypotheses 4a and 4b were not supported. In contrast to Piff's (2015) findings, the mean levels of entitlement of the control ($M = 2.84$) and experimental condition ($M = 3.05$) were not significantly different, $t(192) = -1.64$, $p = .102$. Mean levels of SDO were not found to be significantly different between the control ($M = 2.13$) and prime ($M = 2.25$) conditions $t(192) = 1.00$, $p = .318$. As such, support was not found for Hypothesis 5a or 5b. Gender was a significant predictor of SDO, with men indicating higher levels of SDO, consistent with previous research (e.g., Wilson & Liu, 2003). Age was a significant negative predictor of grandiose narcissism (Table 5.2), but was not a significant predictor of vulnerable narcissism.

Table 5.2
 Model Coefficients for the Moderated Mediation Models of SES Predicting Grandiose and Vulnerable Narcissism, with SDO and PES as Mediators and Moderated by Experimental Condition

Predictor	Dependent Variable											
	PES			SDO			Grandiose Narcissism			Vulnerable Narcissism		
	<i>b</i>	(SE)	<i>p</i>									
SES	.08	(.07)	.253	.12	(.30)	.046	.01	(.05)	.818	-.06	(.05)	.255
PES	-	-	-	-	-	-	.31	(.06)	<.001	.24	(.06)	<.001
SDO	-	-	-	-	-	-	-.07	(.07)	.315	-.03	(.07)	.613
Condition	.22	(.13)	.096	.20	(.12)	.100	<.01	(.10)	.992	.03	(.10)	.777
Condition *SES	-.10	(.13)	.458	.06	(.12)	.607	.18	(.10)	.080	.10	(.10)	.326
Gender	-.02	(.14)	.900	.45	(.02)	<.001	.20	(.11)	.080	.11	(.11)	.288
Age	.01	(.02)	.713	<.01	(.01)	.834	-.03	(.01)	.021	-.02	(.01)	.076
	$R^2 = .02$			$R^2 = .09$			$R^2 = .17$			$R^2 = .11$		
	$F(5, 188) = 0.91, p = .475$			$F(5, 188) = 3.82, p = .003$			$F(7, 186) = 5.29, p < .001$			$F(7, 186) = 3.43, p = .002$		

Note. *N* = 194. Condition and SES were mean centred for analyses. Coefficients are unstandardized. Gender coded 0 = Female, 1 = Male, Condition coded 0 = Control, 1 = Prime. SES = Brief SES scale, PES = Psychological Entitlement Scale, SDO = Social Dominance Orientation. Grandiose and vulnerable narcissism run as separate models.

Discussion

This study extended the findings of Piff's (2015) experimental study by examining the relationship between entitlement, social status and pathological narcissism in an Australian context. Overall, the evidence did not support our hypotheses regarding the association between narcissism and SES and the mediating influences of entitlement and SDO. Social status was not significantly related to vulnerable or grandiose narcissism subtypes or entitlement in our sample, and there was no significant difference between the control and experimental group in entitlement following the experimental manipulation.

Social Status

Our findings do not support the model that social status is positively associated with narcissism. The experimental manipulation did not significantly alter participants' levels of narcissism, entitlement (PES), or SDO. A small correlation was found between the MacArthur SES scale and grandiose narcissism in the experimental condition, but not in the control condition. Overall, the relationship between social status and narcissism found in previous samples (e.g., Cai et al., 2003; Piff, 2015) was not replicated in an Australian sample. Our findings may reflect reported differences in social values. For example, although both U.S. and Australian cultures are considered individualistic, promoting a focus on the self rather than the group, Australia emphasizes distinctiveness but equality within cultural groups and individuals, whereas America embraces a hierarchical model of status and may be more accommodating of differences in status (e.g., Triandis & Gelfand, 1998). Piff (2015) identified that "socio-cultural environments of different social-class groups—which vary in their levels of affluence and differentially emphasize individual versus communal tendencies—shape different levels of entitlement and narcissism" (p. 35). The current study builds on these findings, and indicates that other elements of culture, such as horizontal/vertical

distinctions, should be considered when examining the relationship between culture, entitlement and narcissism. The emphasis on equality and distinctiveness over status in Australian culture may influence different perceptions of and relationships to status, leading to different associations between status, attitudes and personality.

This study is not a direct replication of Piff's study (2015), and the use of different measures and samples may have influenced the findings. Although a range of SES backgrounds were reported, the MacArthur SES Scale mean for each condition indicates that participants generally reported themselves as middle to upper status. As such, the sample may not adequately represent broader Australian society, and the use of a university sample may have limited the coverage of SES and associated experiences.

Contrary to Piff's (2015) findings, narcissism and entitlement were not significantly altered by the prime, for which there are several possible reasons. Our findings may indicate that the prime did not work in this study, or may stem from item coverage, as the PNI has a different conceptualization of narcissism than the NPI used by Piff (2015). In addition, many published experimental findings have been found not to replicate (e.g., Cesario, 2014; Open Science Collaboration, 2015), influenced by several factors, including publication bias and the low power of smaller samples (e.g., Kühberger, Fritz, & Scherndl, 2014), which we endeavored to control for by having an equal or larger sample size than Piff (2015). Overall, our findings suggest reports of narcissism are difficult to modify, contrasting with the concept of narcissism as a state or context-dependent construct (e.g., Giacomin & Jordan, 2014). Although it is possible that narcissism is, as Piff describes, "...sensitive to changes in social values" (2015, p. 40), change may require long-term exposure, or a larger sample size to detect these effects.

Entitlement, SDO, and Narcissism

This study supports previous findings that individual entitlement is associated with higher levels of grandiose narcissism (Piff, 2015). Although vulnerable narcissism was positively correlated with entitlement, it was not a significant predictor when controlling for grandiose narcissism, SDO, and demographic variables. Contrary to previous findings (e.g., Hodson et al., 2009), narcissism was not associated with SDO; however, a strong positive association was found between the PES measure of entitlement and SDO. This may be due to the use of a different narcissism measure: the PNI examines entitlement rage, whereas previous research has used the NPI, which examines entitlement as a component of narcissism. Further, the moderate correlation between the PES and SDO scales indicates that individuals with higher levels of personal entitlement are likely to experience a sense of entitlement regarding social groups. Future research should aim to explore the relationship between narcissism and individual and group levels of entitlement further.

Limitations and Future Directions

There were several limitations to this study. First, the possibility of direct comparison with previous studies is limited, as we used the PNI, rather than the NPI, as a measure of narcissism. It is possible that the changes in narcissism found by Piff (2015) are due to aspects of narcissism measured by the NPI. Second, we did not specifically measure cultural differences, which is a limitation as cultural differences are likely to have affected findings regarding entitlement. Further research explicitly measuring social norms and using cross-cultural samples may help to address this limitation. Third, as previously noted, the study was limited by the use of university students. Further research should aim to examine a broader range of adults. Finally, we used subjective rather than objective measures of SES. Although previous research indicates that subjective SES may be a better indicator for some issues (e.g., Singh-

Manoux, Marmot, & Adler, 2005), further research should explore whether objective SES is associated with narcissism in Australian samples.

Conclusions

Overall, the relationship between SES and narcissism demonstrated in previous studies was not found in the Australian sample used in the current study. In addition, no differences in entitlement, SDO, or narcissism were found for groups exposed to an egalitarian priming condition compared to a control group. As a preliminary examination of social status and narcissism in Australia, this study highlights the importance of considering narcissism and social status across different cultural groups as previous findings may not apply to different social contexts.

Chapter 6: General Discussion

What social factors make someone more narcissistic? To address this question, we used three methodological approaches across the four studies described in Chapters 3, 4, and 5. Three overarching aims guided each study. First, due to the limited examination of vulnerable narcissism in previous research, we aimed to examine how social factors are associated with both grandiose and vulnerable narcissism subtypes. Second, we aimed to examine change – change over time, and whether narcissism could be altered using priming – to better understand the relationship between narcissism and different social factors. Finally, as there has been little examination of narcissism in Australia, we aimed to examine how narcissism relates to social factors in Australian samples. Below we discuss the findings, implications, and limitations of the studies in relation to the three aims, as well as future directions for research.

Grandiose and Vulnerable Narcissism and Social Factors

A number of our findings are consistent with previous studies, whereas others are new findings, which serve to deepen our understanding of the relationship between narcissism and social factors. Grandiose and vulnerable narcissism strongly correlated with each other and demonstrated different patterns of association with social and demographic variables across the studies detailed in Chapters 3, 4, and 5. The pattern of findings in the studies is consistent with models of grandiose and vulnerable pathological narcissism (e.g., Pincus & Roche, 2011) which conceptualize the subtypes as being different aspects of an underlying construct. In addition, the strength of significant associations between narcissism and social factors examined across all studies was consistent with previous examinations of the associations between personality and social constructs (see, for example, Richard, Bond, & Stokes-Zoota, 2003). Specific findings across key areas of interest are detailed in the following sections.

Demographics. The association between narcissism subtypes and demographic variables across all studies was largely consistent with previous research. Males tended to report a higher level of narcissism across the studies in Chapters 3 and 4, but the effect was very small. Although a small association between being female and higher reports of vulnerable narcissism was found in Chapter 3, this was not found in our other studies. These findings are consistent with previous research such as Grijalva et al.'s (2015) meta-analysis of narcissism self-report measures, which indicated that males generally had higher grandiose narcissism and there was no significant effect for vulnerable narcissism. Consistent with previous research, which indicates that narcissism is highest in community samples in teenage years before declining over time (e.g., Arnett, 2010; Foster, Campbell, & Twenge, 2003; Roberts, Edmonds, & Grijalva, 2010; Wilson & Sibley, 2011), narcissism was higher in younger participants in all studies. Contrary to previous studies (e.g., Cai, Kwan, & Sedikides, 2011; Piff, 2015), socioeconomic status was not associated with narcissism in Chapter 5. Although the measures used in Chapter 5 indicate a broad spectrum of status within the sample, the differences in findings may be due to cultural differences or sampling issues.

Parenting. Chapter 3's findings revealed that vulnerable and grandiose narcissism were associated with different patterns of parenting recollection variables. Grandiose narcissism was associated with lower levels of parental coldness, higher rejection, and maternal invalidation, whereas vulnerable narcissism was associated with maternal and paternal invalidation. These findings indicate that although invalidation is a significant predictor of both narcissism subtypes, there may be additional parenting factors associated with grandiose narcissism. The findings support previous research indicating that parental warmth and rejection are associated with grandiose narcissism (e.g., Horton, Bleau & Dwrecki, 2006), and that narcissism subtypes may be influenced by different factors during development (e.g., Mechanic & Barry, 2015). In addition, the

sizes of associations found in the study were consistent with correlations for a range of narcissism measures and recollections of parenting behaviour measures in previous studies (see, for example, Cater, Zeigler-Hill, & Vonk, 2011; Horton, Bleau & Dwrecki, 2006; Horton & Tritch, 2014; Otway & Vignoles, 2006; Trumpeter, Watson, O’Leary, & Weathington, 2008; Watson, Little & Biderman, 1992).

Chapter 3 provides the first explicit examination of the relationship between recollections of invalidating behavior and narcissism. The findings of Chapter 3 indicate that recollections of childhood invalidation are associated with the development of both narcissism subtypes. This finding is consistent with previous theorizing of Morf and Rhodewalt (2001a) and Strauman (2001), as well as the observations put forward by Miller (1997), that invalidation may influence an individual’s ability to regulate their sense of self and their interactions with others, leading to higher levels of narcissism. The interaction between maternal and paternal invalidating behaviors significantly predicted both narcissism subtypes such that higher levels of narcissism were associated with invalidating behavior from either or both parents. This finding indicates that the perceived behaviors of parents may influence the development of narcissism, however longitudinal examinations of parenting behaviors and narcissism are required to explore the role of invalidation in the development of narcissism.

Social norms, attitudes, groups and identification. Building on previous findings that grandiose narcissism is associated with individualism (e.g. Foster et al., 2003), the first study in Chapter 4 aimed to examine the association between grandiose and vulnerable narcissism and a range of social norms and attitudes. The examination included individualist and vertical attitudes, individualistic descriptive norms of national and important groups, and participant’s identification with these groups. The findings of Chapter 4 indicate that grandiose and vulnerable narcissism have

overlapping but distinct patterns of association with norms, attitudes, and group identification.

Although both narcissism subtypes were associated with viewing the Australian national group as more individualistic, the effect was small and there was no significant association between narcissism and individualistic norms for self-nominated important groups. Vulnerable and grandiose narcissism had different patterns of association with individualistic and vertical attitudes. Horizontal individualist, vertical individualist, and vertical collectivist attitudes were associated with grandiose narcissism, whereas vulnerable narcissism was only associated with vertical collectivist attitudes. These findings indicate that, grandiose narcissism is associated with self-focused attitudes and positive attitudes regarding personal and group status, whereas vulnerable narcissism is associated with attitudes endorsing group status.

Overall, Individuals higher in narcissism were more likely to hold positive attitudes towards self-focus, hierarchy and competition, although they did not perceive their important groups as individualistic, and perceived the Australian national group as only slightly more individualistic. This pattern of results indicates that the individualistic views held by individuals with higher grandiose narcissism are not necessarily reflected in their social groups. This finding expands on previous research, which has focused on individualism as measured by attitudinal measures, and differences between, rather than within, groups (e.g., Cai et al., 2011; Foster et al. 2003). The findings indicate that vulnerable narcissism is associated with a pattern of social attitudes distinct from grandiose narcissism, and should be examined in future examinations of narcissism and social norms and attitudes. In addition, although previous research and theory has primarily focused on individualistic attitudes and norms, these findings suggest that attitudes regarding status and inequality within social groups is also an important predictor of narcissism.

Narcissism was not significantly associated with national group identification. Individuals with higher narcissism did not identify more strongly with their national group, despite holding more individualistic attitudes, and seeing the group as individualistic. Identification is an important element of gaining group values (e.g., Livingstone, Haslam, Postmes, & Jetten, 2011), and previous research has speculated that the social norms cultivate narcissism in individuals (e.g., Lasch, 1979; Twenge & Foster, 2010). The current findings suggest that individualistic attitudes may be internally driven by narcissistic processes, which aim to maintain a positive sense of self (e.g., Morf & Rhodewalt, 2001a, 2001b; Pincus & Lukowitsky, 2010), rather than cultivated by norms of a group that the individual identifies with. This process is partially culturally driven, as positive attributes are informed by cultural values (e.g., Markus & Kitayama, 2010).

Individuals with higher levels of vulnerable narcissism identified significantly less with the important group they nominated, but there was no significant association between grandiose narcissism and important group identification. The negative association between vulnerable narcissism and important group identification may reflect an aspect of relationship difficulties associated with higher levels of pathological narcissism (e.g., Dickinson & Pincus, 2003; Kernberg, 1975, Kohut, 1966).

Pathological narcissism has been associated with a tendency to expect praise and admiration from others, at the same time as distrusting, devaluing, and remaining independent from others. As a result, highly narcissistic individuals may experience greater difficulty in relating to or building meaningful relationships with others (e.g., Kernberg, 1975). This is recognized as a key element of NPD in the DSM-5 alternate model for personality disorders, which highlights that “mutuality [is] constrained by little genuine interest in other’s experiences...” (APA, 2013, p. 767) in individuals with NPD. Examinations of narcissism and other personality constructs such as

agreeableness show that vulnerable narcissism is strongly associated with low levels of trust, whereas grandiose narcissism has a small association (e.g., Miller, et al., 2010). This relational aspect of vulnerable narcissism may underpin its significant negative association with identification with important groups, such as friends and family. There has been little research into the differences between grandiose and vulnerable narcissism in group identification. Further research examining these relationships would be beneficial for developing targeted approaches to help individuals with high levels of narcissism relate to others more effectively.

Celebrity attitudes. Both grandiose and vulnerable narcissism were associated with higher engagement with, and positive attitudes towards, celebrities. Contrary to previous research, which argued that narcissism was associated with pathological celebrity attitudes but not subclinical levels (Ashe, Maltby, & McCutcheon, 2005), we found that narcissism was associated with individuals' engagement with celebrity culture for entertainment and social reasons. The findings in Chapter 4 build on previous research which has focused on grandiose narcissism in connection with attitudes towards celebrity (e.g., Ashe et al. 2005; Gibson, Hawkins, Redker, & Bushman, 2016; Twenge & Campbell, 2010), but the mechanism behind this association remains unclear. The association may be driven by elements of narcissism such as grandiose fantasies of fame and wealth as suggested by Lasch (1979), and a desire to associate with people seen as special and unique as reflected in the DSM-5 criteria (APA, 2013): however, further research is required to better understand the relationship.

Social Status. Social status was not significantly associated with either narcissism subtype in the study detailed in Chapter 5. This is a different finding from previous research. Previous studies demonstrating an association between socioeconomic status (SES) and narcissism have used samples from vertically oriented

countries such as China (Cai et al., 2003) and the U.S. (e.g., Piff, 2015). A factor that may contribute to this finding is the use of subjective, rather than objective measures of SES. Subjective measures were used in the Chapter 5 study, as traditional objective measures of SES such as income and education level are not as informative in undergraduate samples. However, some studies have shown objective and subjective measures of status differentially relate to some outcomes (e.g., Cohen, Alper, Adler, Treanor, & Turner, 2008). Although both objective and subjective status measures were associated with narcissism in Piff (2015), it is possible that narcissism is associated with objective SES measures in Australian samples and this should be examined in future studies. The lack of significant association between narcissism and social status in the Chapter 5 study may stem from cultural differences. Australia is a horizontal individualist country (e.g., Singelis, Triandis, Bhawuk, & Gelfand, 1995) and cultural differences in perceiving and relating to status may result in different associations between narcissism and socioeconomic status. Further research in horizontally oriented cultures may help to clarify this relationship.

Technology use and anxiety. The role of technology use in the development of narcissism is a subject of ongoing debate. Some have argued that technology promotes increases in narcissism (e.g. Twenge & Campbell, 2010), whereas others argue that it provides avenue platform to display narcissistic tendencies already present in individuals (e.g., Turkle, 2011). Contrary to our hypotheses, in the study detailed in Chapter 4 we found that narcissism subtypes were not associated with greater use of social technologies; however narcissism was associated with greater anxiety if individuals were not able to access social technology. These findings indicate that individuals that report higher narcissism may not significantly differ from others in the frequency of their use of social technologies, such as social networking sites or instant

messaging. However, these tools may have greater meaning or value for them, and as a result, they become more anxious if unable to access them.

The findings in Chapter 4 are consistent with previous theorizing that using social technologies may help highly narcissistic individuals regulate their sense of self and self-esteem (Turkle, 2011). Without this, an individual may lose a key source of self-regulation, and, as such, their anxiety is understandable. Overall, the findings are consistent with previous research indicating that social technologies allow for the expression of pre-existing narcissism, rather than leading to higher levels of it (e.g., Ryan & Xenos, 2011; Turkle, 2011), and narcissism may be associated with distinct patterns of behavior using social technology, rather than frequency or quantity of use (e.g., Bergman, Fearington, Davenport, & Bergman 2011).

Change in Narcissism

To explore the relationship between narcissism and social variables we examined both the associations between variables as well as change in narcissism. Specifically, we investigated whether social norms predicted narcissism over time (Chapter 4), and whether reports of narcissism could be altered using egalitarian priming (Chapter 5). The examination of within-person change builds on previous studies which have primarily used cohort studies (e.g., Trzesniewski & Donnellan, 2010; Twenge, Campbell, & Freeman, 2012) or cross-cultural group comparisons (e.g., Campbell, Miller, & Buffardi, 2010) to examine narcissism and social factors.

In the second study reported in Chapter 4 we examined whether social factors predicted narcissism over approximately six-months, and whether social factors were associated with the degree of change in narcissism. Grandiose and vulnerable narcissism were strongly correlated with one another at Time 1 and six months later at Time 2. They did not predict one another over time, and did not significantly change over time.

Using cross-lagged path models to examine the relationship between narcissism and social factors, the findings described in Chapter 4 indicate that although social factors were associated with narcissism at each time point, they did not significantly predict change in either narcissism subtype: the only predictor of each narcissism at Time 2 was narcissism at Time 1. In addition, narcissism at Time 1 predicted higher vertical collectivist attitudes at Time 2; however, this finding for both subtypes was very small. The mechanism behind this association is unclear and further replication of the finding and exploration of the relationship between narcissism and vertical collectivist attitudes is required.

Although there was no significant mean level change in narcissism, there was significant variance in change, and change score modelling was used to explore whether social factors at Time 1 may be associated with the degree of change within narcissism. As outlined in Chapter 4, social factors at Time 1 did not predict change in narcissism, however a small negative association was found between technology anxiety and change scores in both narcissism subtypes. This finding was unexpected and may be due to a third, unmeasured variable. For example, the finding may be due to participants broader relational functioning and their use of social technology to stay connected with others, however further research is needed to explore this possibility.

Overall, the findings of Chapter 4 are consistent with previous work indicating that personality is often slow to change over time (e.g., Caspi, Roberts, & Shiner, 2005). Future research should aim to examine narcissism over a longer period of time, which may demonstrate greater change. The use of a greater sample size may also be beneficial. The LCS models outlined in Chapter 4 used manifest indicators due to the sample size gathered and complexity of the models generated, however using larger sample sizes with item parceling in future research would allow for stronger modelling approaches to be used. In addition, the use of more time points across the study may

help to better understand how social factors and narcissism influence one another over time using techniques such as growth curve modelling (e.g., Preacher, Wichman, MacCallum, & Briggs, 2008).

Priming egalitarian values did not significantly affect individuals' reports of narcissism or entitlement in the Chapter 5 study. Although null findings are difficult to interpret, there are several possible reasons for the finding. First, the conceptualization of narcissism measured may not be affected by egalitarian priming. The study used the Pathological Narcissism Inventory (PNI; Pincus et al., 2009), whereas previous studies examining narcissism and priming have used the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988). Although there is some conceptual overlap, there are distinct differences between the measures, and it is possible that elements covered by the NPI are more conducive to priming than those covered by the PNI. Second, many published experimental studies have been found not to replicate (e.g., Open Science Collaboration, 2015); a finding influenced by several factors, including low power of small samples (e.g., Kühberger, Fritz, & Scherndl, 2014), which we attempted to control for by having a sample size larger than the initial Piff (2015) study. Last, this outcome may reflect a similar pattern of stability to that found in the second Chapter 4 study. However, further examination is required. It is possible that exposure to egalitarian values does influence reports of narcissism and entitlement, but takes a longer exposure than the priming activity used in Chapter 5.

Although not explicitly examined, cultural differences may have also influenced the findings in Chapter 5. Priming egalitarian norms has previously successfully reduced reported levels of narcissism in samples from vertical individualistic cultures (e.g., Finkel et al., 2009; Piff, 2015); however, participants in Chapter 5 were from a horizontal individualistic society, which promotes equality between individuals and social groups (Triandis & Gelfand, 1998). This contextual difference may contribute to

why egalitarian priming did not work in our sample. As social norms were not explicitly measured in the Chapter 5 study further research is needed to explore this possibility.

Narcissism in Australia

Overall, the studies presented have expanded our understanding of narcissism in Australia, and point to avenues for future study. Prior research on narcissism and social factors has predominantly focused on the impact of individualism on narcissism, and much of the theorizing regarding individualism and narcissism has focused on American culture (e.g., Lasch, 1979; Lundbeck, 2014; Twenge & Campbell, 2010). In addition, research examining narcissism and social factors has primarily focused on North American populations. Like the U.S., Australia is an individualist society (e.g., Triandis, 1995), however the two countries have different cultural norms regarding status. The U.S. is a vertical society, which prioritizes status and hierarchy, whereas Australia is a horizontal society, which prioritizes equality but also distinctiveness between individuals (e.g., Singelis et al., 1995; Triandis & Gelfand, 1998). The studies described in Chapters 4 and 5 expand on previous research by examining how social factors relate to narcissism in Australia. The findings indicate that narcissism is associated with a variety of social attitudes in Australian samples, however there may be differences compared to U.S. samples in the association between narcissism and factors such as celebrity attitudes and social status.

The examination of social norms in Chapters 4 and 5 is limited by several factors. As Oyserman, Coon, and Kimmelmeier (2002) identify, individuals are only able to report on norms they are consciously aware of, and may not perceive cultural influences. In addition, cross-cultural samples were not used to allow for direct comparison. As such, although the results suggest cross-cultural differences, further research using cross-cultural samples would allow for direct comparison of differences between Australian and other cultural samples.

Clinical Implications

The findings outlined in this thesis have several clinical implications. They contribute to our understanding of the relationship between pathological narcissism and social factors, which has implications for the conceptualization and formulation of narcissism. Previous work examining pathological narcissism suggests that it is a stable personality construct, resistant to change (e.g., Kernberg; 1975; Millon, 1981). The results of Chapter 4 and 5 support this finding in Australian samples. Although some studies indicate that aspects of narcissistic behavior can be changed with priming (e.g., Finkel et al., 2009; Piff, 2015; Thomaes, Bushman, Castro, Cohen, & Denissen, 2009), these samples have used the NPI (Raskin & Terry, 1988), which covers a different pattern of narcissistic facets. Our use of the PNI may account for this difference, as the measures capture different aspects of narcissism. The NPI contains items examining leadership and assertiveness in its examination of grandiose narcissism, not covered in the PNI, which covers aspects of narcissism associated with greater regulatory impairment (Pincus & Lukowitsky, 2010). These findings have been mirrored in clinical research. For example, Ronningstam, Gunderson, and Lyons (1995) found that over a three-year period, 60% of participants showed significant improvement in narcissism, and speculated that this improvement may have been due to diagnostic instruments primarily focusing on grandiose aspects of narcissism. Although further research is required, the findings of Chapter 4 and 5 indicate that pathological aspects of narcissism may not change as readily as other aspects of narcissism.

The finding in Chapter 3 that parental invalidation is associated with both grandiose and vulnerable narcissism improves our understanding of the origins of narcissism. Prior research and theory has linked narcissism with a range of extremes in childhood environments, including high levels of indulgence (Millon, 1981) and coldness and rejection (Kernberg, 1984; Otway & Vignoles, 2006). Extremes in

environment are unlikely to meet the developmental needs of a child and, as such, invalidation may be a unifying component of these contexts. Invalidation is a useful framework for understanding the development of narcissism. It is consistent with previous findings regarding parent-child fit (Cramer, 2011), attachment, and a variety of parenting behaviors (e.g., Horton, Bleau, & Drwecki, 2006; Horton & Tritch, 2014; Hui & Bao, 2014; Lyons, Morgan, Thomas, & Al Hashmi, 2013; Mechanic & Barry, 2015; Otway & Vignoles, 2006) and focuses on whether interactions with a parental figure meet the child's needs as they develop. The findings in Chapter 3 also link the development of narcissism, which is characterized by difficulties regulating a positive sense of self, to other disorders associated with issues in regulation and childhood invalidation, including borderline personality disorder (Robertson, Kimbrel, & Nelson-Gray, 2013), and eating disorders (Haslam, Mountford, Meyer, & Waller, 2008). The findings highlight the importance of early relationships in helping individuals to form internal regulation skills, and indicate that accurate and validating feedback about an individual's internal experiences may play an important role in developing a healthy sense of self.

The findings of Chapter 3 indicate that invalidating behavior from either parent can be associated with higher narcissism and that both parents may play an important role in modelling validating behavior. An important next step in understanding the relationship between narcissism and parental behavior is examining whether attachment moderates the association between parental invalidating behavior and narcissism. Previous research indicates that narcissism is associated with anxious and avoidant attachment styles (e.g., Smolewska & Dion, 2005), and this may interact with perceived invalidating behavior to influence the development of narcissism. As parental invalidation was associated with higher levels of narcissism, future research should examine whether interventions designed to help parents display validating responses

towards their children reduce the development of pathological levels of narcissism and other mental health conditions in adulthood. Longitudinal research is needed to further explore the possibility of early intervention.

The findings of Chapters 4 and 5 have implications for considering the role of culture in the presentation of pathological narcissism. As outlined by the dynamic self-regulatory processing model of narcissism (e.g., Morf, Torchetti & Schürch, 2011), narcissism is associated with a wide range of intra- and inter-personal strategies to regulate a positive sense of self such as seeking praise and attention, and status-seeking. As these behaviors rely on external sources they are influenced by the individual's social world and this is likely to lead to differences across cultures. Indicators of status value differ across contexts and cultures. The context-bound nature of status and value may contribute to some of the differences between the findings of Chapters 4 and 5 regarding status and social attitudes, and previous work examining other cultural contexts. It is important to consider these factors in relation to the assessment and identification of narcissism, as differences in behaviors, despite being underpinned by narcissistic processes, may lead to pathological narcissism being overlooked or misidentified.

Limitations of the Project and Suggestions for Future Research

Although our findings expand our understanding of the association between social factors and grandiose and vulnerable narcissism, there are a number of limitations to the studies and opportunities for further research. The examination of associations between narcissism and social variables is limited by its use of one narcissism self-report measure. The PNI was chosen due to its strong and clinically-focused development (Pincus et al., 2009), and because it measures aspects of both grandiose and vulnerable narcissism. There are, however, some indications that the grandiose factor of the PNI does not measure grandiose narcissism as well as measures such as the

NPI (e.g., Fossati et al., 2017; Krizan & Herlache, 2017). In addition, other narcissism scales measure overlapping, but different, aspects of narcissism. For example, the PNI and NPI (Raksin & Terry, 1988) share conceptual overlap in their measurement of certain facets of narcissism, such as exploitativeness; however, the NPI also contains facets that are not examined by the PNI, such as leadership and authoritativeness. Future research should aim to include other measures, such as the NPI, Five Factor Narcissism Inventory (FFNI; Glover, Miller, Lynam, Crego, & Widiger, 2012), or the Narcissistic Admiration and Rivalry Questionnaire (NARQ; Back et al., 2013) as well as the PNI to examine the relationship between different aspects of narcissism and social factors.

An additional consideration is that there is debate regarding the factor structure of the PNI, particularly with regards to which factor entitlement rage should load onto (e.g., Morf et al., 2017; Pincus et al., 2009; Wright et al., 2010). The model put forward by Wright et al. (2010), in which entitlement rage is conceptualized as part of vulnerable narcissism, is used consistently throughout the studies to allow for comparison. However, recent studies have found different configurations (e.g., Karakoula et al., 2013; Morf et al., 2017). Future studies should consider including facet level analyses, or partialling out one factor from another in criterion correlations, to examine the relationship between narcissism and social factors.

Although a variety of methodologies were utilized to examine the relationship between narcissism and social factors, these were all underpinned by self-report measures. The use of a broad range of measurement approaches in future research would expand our understanding of the relationship between narcissism and social factors. For example, using peer or family reports in addition to self-reports to examine social factors such as group norms and perceived social status in relation to narcissism would allow for further examination of the findings in Chapter 4 and 5, and whether narcissism shapes an individual's perception of social status and the social norms of

their groups. The use of quantitative and qualitative methods would facilitate further exploration of the motivations for, and quality of, relationships between narcissism and factors such as celebrity culture or technology use.

The findings of Chapter 3 indicate an association between narcissism and invalidation but further research is required to better understand this relationship. The Invalidating Childhood Environment Scale (ICES; Mountford, Corstorphine, Tomlinson, & Waller, 2007) measure covers a broad range of invalidating factors outlined by Linehan (1993); however, it currently examines invalidation as a single construct. Further development of the scale to examine how distinct aspects of invalidation may lead to increases in narcissism would be beneficial. In addition, the Chapter 3 study was limited to participants who reported parents as a biological mother and father. Future research should aim to examine different types of family systems (such as same sex parent families, single parents, parents who have re-partnered) to examine whether family systems influence the association between narcissism and recollections of parenting. As the Chapter 3 study relied on self-report measures in a cross-sectional design the use of different methodologies, such as longitudinal research designs during childhood, and the use of parent self-report would also facilitate a better understanding of narcissism and invalidation. Finally, childhood invalidation is linked to a range of mental health issues including borderline personality disorder (Robertson, Kimbrel, & Nelson-Gray, 2013), and eating disorders (Haslam, Mountford, Meyer, & Waller, 2008). As previous research indicates that these issues may co-occur (e.g. Simonsen & Simonsen, 2011; Widiger, 2011). Further research should aim to examine the relationship between narcissism, invalidation and mental health issues. This would facilitate a better understanding of how invalidation may lead to the development of these issues and inform clinical formulations of development and treatment planning.

The studies outlined in Chapter 4 measured social factors as broad norms and attitudes but did not examine specific life events such as changes in employment or relationship status. Some research suggests that aspects of narcissism such as grandiose fantasy may be reinforcing and lead to less change over time in the absence of particular life events, as life events shift perceptions of self and other people (e.g., Millon, 1981; Ronningstam et al. 1995). This is seen in clinical samples where, for example, grandiose narcissism is associated with reduced engagement with therapy (Ellison, Levy, Cain, Ansell, & Pincus, 2013) and the relationship between narcissism and distress is mediated by impairment in functioning (Miller, Campbell, & Pilkonis, 2007). Future research should aim to examine both broad social factors as well as specific changes in individual circumstance as both are likely to influence change in narcissism.

The approach taken to measure technology use and anxiety in Chapter 4 is quite broad. Future research should aim to identify specific elements of social technology usage, which may lead to the presence of anxiety, and determine what elements of social technology are most valued by individuals with high levels of narcissism. Further research into the connection between social technology and anxiety may allow for a better understanding of the function of social technology for individuals with high levels of narcissism. This research could then inform the development of interventions to help individuals with high levels of narcissism to develop other means of fulfilling their needs outside of social technology use.

Building on the research presented in Chapter 5, there are several future directions for research examining the relationship between narcissism and social status. As Australia has different cultural values regarding hierarchy and social status, it is possible that narcissism is associated with other types of status, such as cultural capital, rather than socioeconomic status. Further research into whether narcissism is associated with culture-bound patterns of status or status seeking would improve our understanding

of the presentation of narcissism across cultures. Similarly, greater cross-cultural studies of narcissism and social status may help to clarify the relationship between narcissism, social status and perceptions of hierarchy. In addition, greater exposure to priming of egalitarian norms over time may lead to significant change in narcissism. This relationship could also be explored in future research.

Another limitation of the studies presented is that issues such as depression were not controlled for. Depressed mood is associated with narcissism (Kealy, Tsai, & Ogrodniczuk, 2012), and both narcissism and depression appear to share some associated features such as an increased self-focus, lowered self-esteem, and reduced engagement with others (e.g., Anastasopoulos, 2007). Although previous research indicates that narcissism is distinct from depression in its presentation further research should examine social factors and narcissism while controlling for depressed mood. Another related construct is malignant self-regard defined by Huprich and Nelson (2014) as referring to individuals highly sensitive to criticism, perfectionistic, and experiencing ongoing shame. This is somewhat similar to what have previously been termed depressive and self-defeating personality disorders. There is evidence suggesting that malignant self-regard shares some symptom overlap with vulnerable narcissism. Because they appear to be similar but distinct constructs, examining how malignant self-regard is similar to or different from narcissism is important for future research. A better understanding of what may be unique to narcissism in terms of social attitudes and engagement will assist in developing treatment approaches and a better understanding of this complex personality construct.

Conclusion

This project aimed to examine the relationship between grandiose and vulnerable narcissism and social factors in Australia using a range of research methods. The findings of the project indicate that grandiose and vulnerable narcissism are

associated with overlapping but distinct patterns of social factors and attitudes, including parental invalidation, individualistic and vertical attitudes, celebrity attitudes and anxiety regarding access for social technology. Both narcissism subtypes did not significantly change over a six-month period. Although both subtypes were associated with social factors, social factors did not predict narcissism over time. Contrary to prior research, narcissism was not associated with social status, and was not altered by egalitarian priming in our sample. These findings deepen our understanding of how social factors influence the development and expression of narcissism in Australia.

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Appendix A: Measures used in Chapters, 3, 4 and 5

1. Pathological Narcissism Inventory (PNI, Pincus et al., 2009)

The PNI was used as a measure of grandiose and vulnerable pathological narcissism in Chapters 3, 4 and 5. All PNI items were measured using a 6-item Likert scale (0 = *not at all like me* to 5 = *very much like me*).

Item	Subscale
1. I often fantasize about being admired and respected.	GF
2. My self-esteem fluctuates a lot.	CSE
3. I sometimes feel ashamed about my expectations of others when they disappoint me.	DEV
4. I can usually talk my way out of anything.	EXP
5. It's hard to feel good about myself when I'm alone.	CSE
6. I can make myself feel good by caring for others.	SSSE
7. I hate asking for help.	HS
8. When people don't notice me, I start to feel bad about myself.	CSE
9. I often hide my needs for fear that others will see me as needy and dependent.	HS
10. I can make anyone believe anything I want them to.	EXP
11. I get mad when people don't notice all that I do for them.	ER
12. I get annoyed by people who are not interested in what I say or do.	ER

13. I wouldn't disclose all my intimate thoughts and feelings to someone I didn't admire. HS
14. I often fantasize about having a huge impact on the world around me. GF
15. I find it easy to manipulate people. EXP
16. When others don't notice me, I start to feel worthless. CSE
17. Sometimes I avoid people because I'm concerned that they'll disappoint me. DEV
18. I typically get very angry when I'm unable to get what I want from others. ER
19. I sometimes need important others in my life to reassure me of my self worth. CSE
20. When I do things for other people, I expect them to do things for me. ER
21. When others don't meet my expectations, I often feel ashamed about what I wanted. DEV
22. I feel important when others rely on me. SSSE
23. I can read people like a book. EXP
24. When others disappoint me, I often get angry at myself. DEV
25. Sacrificing for others makes me the better person. SSSE
26. I often fantasize about accomplishing things that are probably beyond my means. GF
27. Sometimes I avoid people because I'm afraid they won't do what I want them to. DEV

28. It's hard to show others the weaknesses I feel inside. HS
29. I get angry when criticized. ER
30. It's hard to feel good about myself unless I know other people admire me. CSE
31. I often fantasize about being rewarded for my efforts. GF
32. I am preoccupied with thoughts and concerns that most people are not interested in me. CSE
33. I like to have friends who rely on me because it makes me feel important. SSSE
34. Sometimes I avoid people because I'm concerned they won't acknowledge what I do for them. DEV
35. Everybody likes to hear my stories. EXP
36. It's hard for me to feel good about myself unless I know other people like me. CSE
37. It irritates me when people don't notice how good a person I am. ER
38. I will never be satisfied until I get all that I deserve. ER
39. I try to show what a good person I am through my sacrifices. SSSE
40. I am disappointed when people don't notice me. CSE
41. I often find myself envying others' accomplishments. CSE
42. I often fantasize about performing heroic deeds. GF

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| 43. I help others in order to prove I'm a good person. | SSSE |
| 44. It's important to show people I can do it on my own, even if I have some doubts inside. | HS |
| 45. I often fantasize about being recognized for my accomplishments. | GF |
| 46. I can't stand relying on other people because it makes me feel weak. | HS |
| 47. When others don't respond to me the way that I would like them to, it is hard for me to still feel ok with myself. | CSE |
| 48. I need others to acknowledge me. | CSE |
| 49. I want to amount to something in the eyes of the world. | GF |
| 50. When others get a glimpse of my needs, I feel anxious and ashamed. | HS |
| 51. Sometimes it's easier to be alone than to face not getting everything I want from other people. | DEV |
| 52. I can get pretty angry when others disagree with me. | ER |

Note. GF = Grandiose Fantasies; EXP = Exploitativeness; SSSE = Self-Sacrificing Self-Enhancement; CSE = Contingent Self Esteem; HS = Hiding the Self; DEV = Devaluing Others; ER = Entitlement Rage. For all chapters, grandiose and vulnerable narcissism are calculated using Wright et al.'s (2010) configuration of narcissism where grandiose narcissism is comprised of EXP, GF, and SSSE; and vulnerable narcissism is comprised of CSE, HS, DEV, and ER.

Measures used in Chapter 3

2. Family structure

To assess family structure for Chapter 3, participants were asked to identify parental figures, and select all that applied from the following options: *Biological mother*, *biological father*, *Father's partner*, *Mother's partner*, *Adoptive mother*, *Adoptive father*, *Other (e.g. grandparents, older siblings) - Please specify*.

3. The Invalidating Childhood Environment Scale (ICES; Mountford, Corstorphine, Tomlinson, & Waller, 2007)

The ICES is a 14-item scale measuring invalidating parental behavior. The scale was administered for mothers and fathers and was measured on a 5-point Likert scale (1 = *never*; 5 = *all the time*). The items for maternal invalidation are displayed below.

Item

1. My mother would become angry if I disagreed with her.
2. When I was anxious, my mother ignored this.
3. If I was happy, my mother would be sarcastic and say things like: "What are you smiling at?"
4. If I was upset, my mother said things like: "I'll give you something to really cry about!"
5. My mother made me feel OK if I told her I didn't understand something difficult the first time.
6. If I was pleased because I had done well at school, my mother would say things like: "Don't get too confident".
7. If I said I couldn't do something, my mother would say things like: "You're being difficult on purpose".

8. My mother would understand and help me if I couldn't do something straight away.
 9. My mother used to say things like: "Talking about worries just makes them worse".
 10. If I couldn't do something however hard I tried, my mother told me I was lazy.
 11. My mother would explode with anger if I made decisions without asking her first.
 12. When I was miserable, my mother asked me what was upsetting me, so that they could help me.
 13. If I couldn't solve a problem, my mother would say things like: "Don't be so stupid — even an idiot could do that!"
 14. When I talked about my plans for the future, my mother listened to me and encouraged me.
-

4. The Egna Minnen Beträffande Uppfostran [My Memories of Upbringing]— Short Form (s-EMBU; Arrindell et al., 1999)

The s-EMBU is a 23-item scale consisting of three subscales: rejection, emotional warmth, and overprotection. Each item is measured on a 4-point Likert scale (1 = *No, never* to 4 = *Yes, most of the time*). For the purposes of Chapter 3, the warmth subscale was reverse-scored to measure parental coldness, and items were modified to assess parental behavior as a whole, rather than individual parent behavior.

Item

1. It happened that my parents were sour or angry with me without letting me know the cause.
2. My parents praised me.
3. It happened that I wished my parents would worry less about what I was doing.
4. It happened that my parents gave me more corporal punishment than I deserved.
5. When I came home, I then had to account for what I had been doing, to my parents.
6. I think that my parents tried to make my adolescence stimulating, interesting and instructive (for instance by giving me good books, arranging for me to go on camps, taking me to clubs).
7. My parents criticized me and told me how lazy and useless I was in front of others.
8. It happened that my parents forbade me to do things other children were allowed to do because they were afraid that something might happen to me.
9. My parents tried to spur me to become the best.
10. My parents would look sad or in some other way show that I had behaved badly so that I got real feelings of guilt.
11. I think that my parents' anxiety that something might happen to me was exaggerated.
12. If things went badly for me, I then felt that my parents tried to comfort and encourage me.
13. I was treated as the 'black sheep' or 'scapegoat' of the family.
14. My parents showed with words and gestures that they liked me.

15. I felt that my parents liked my brother(s) and/or sister(s) more than they liked me.
 16. My parents treated me in such a way that I felt ashamed.
 17. I was allowed to go where I liked without my parents caring too much.
 18. I felt that my parents interfered with everything I did.
 19. I felt that warmth and tenderness existed between me and my parents.
 20. My parents put decisive limits for what I was and was not allowed to do, to which they then adhered rigorously.
 21. My parents would punish me hard, even for trifles (small offenses).
 22. My parents wanted to decide how I should be dressed or how I should look.
 23. I felt that my parents were proud when I succeeded in something I had undertaken.
-

4. Normative IC Scale (Fischer et al., 2009)

The Normative IC Scale was used to measure national and important group norms. Each item consists of an individualistic and collectivistic stem, and participants were asked to indicate their perception of group norms on a 7-point Likert scale between the stems. For important group norms, participants were asked to nominate an important group, and this was used as a reference for the questions.

Instructions:

*Below are pairs of phrases describing different values and behaviour. Using the scale below, please indicate to what extent either of the two statements is more typical for **people in your national group**.*

*For example, if you are **Australian**, responses closer to one item indicate that you believe this statement better represents **what Australians do** than the other response.*

Individualistic Stem	Collectivistic Stem
1. Most people see themselves as independent from others.	Most people see themselves as part of their national group.
2. Most people enjoy being different from others.	Most people enjoy being similar to others.
3. Most people stress their personal accomplishments and achievements when meeting new people.	Most people stress accomplishments and achievements of their national group when meeting new people.

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| 4. It is important for most people to act as an independent person. | It is important for most people to act as member of their national group. |
| 5. When people have a need, they rely on themselves. | When people have a need, they turn to others for help. |
| 6. If there is a conflict between personal values and the values of the national group, most people follow their personal values. | If there is a conflict between personal values and the values of the national group, most people follow the values of their national group. |
| 7. Most people do what is enjoyable to them personally. | Most people carry out their national group obligations. |
| 8. Most people pay attention to their personal contracts. | Most people pay attention to their national group duties. |
| 9. Most people obey their personal contracts rather than their national group norms and duties. | Most people obey their national group norms and duties rather than personal contracts. |
| 10. Most people act in line with their rights. | Most people act in line with their national group norms and duties. |
| 11. Most people follow their personal attitudes. | Most people follow their national group norms and rules. |
| 12. Most people do their duties only if they think they will benefit from it. | Most people do their duties, even when they think they will not benefit. |

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| 13. When making decisions, most people are not especially sensitive to feelings of people around them. | Most people take feelings of people around them into account when making decisions. |
| 14. Most people only consider needs of others in their national group, if they expect something from them in return. | Most people consider needs of others in their national group, even if they do not expect something from them in return. |
| 15. Most people carefully calculate costs and benefits of their relationship with other people. | Most people focus on the relationship with other people without caring about associated costs and benefits. |
| 16. Before helping other people, most people consider the costs of helping. | Most people generally help other people without considering costs. |
| 17. Most people do not hesitate to change established relationships if the relationship is not in their best interest anymore. | Most people maintain established relationships, even if this is not in their best interest. |
| 18. Most people are mainly concerned with their own personal goals. | Most people are mainly concerned with the goals of their national group. |
| 19. In situations of conflict between the goals of one's national group and personal goals, people pursue their own goals. | In situations of conflict between the goals of one's national group and personal goals, people sacrifice their own goals to achieve the goals of the group. |
| 20. In cases of conflict, individuals just ignore the goals of their national | In cases of conflict, individuals do what the national group expects and demands |

group and they attempt to reach their personal goals. without opposing the will of the larger group.

21. The goals of individuals within a national group and the goals of the group are often not compatible. The goals of the national group and the goals of individuals within the group are often compatible.

22. It feels natural for most people to pursue their personal goal without considering the goals of their national group. If feels natural for most people to pursue personal goals only if they do not conflict with goals of their national group.

5. Group identification items

In Chapter 4, the following items were used to assess group identification. Each item was measured on a 5-item Likert scale (1= *Strongly disagree*, 5 = *Strongly agree*).

Item

1. I identify with others in my national group
 2. I identify with other members of my **[important group]**
-

6. The Revised Horizontal and Vertical Individualism and Collectivism Scale (Sivadas, Bruvold, & Nelson, 2008).

This scale was used to examine social attitudes in Chapter 4. Items were measured using a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*). The full scale is outlined below.

Item	Sub-scale
1. My happiness depends very much on the happiness of those around me.	Horizontal Collectivism
2. I would do what would please my family, even if I detested that activity.	Vertical Collectivism
3. I usually sacrifice my self interest for the benefit of my group.	Vertical Collectivism
4. I enjoy working in situations involving competition with others.	Vertical Individualism
5. The wellbeing of my co-workers is important to me.	Horizontal Collectivism
6. I enjoy being unique and different from others in many ways.	Horizontal Individualism
7. Children should feel honoured if their parents receive a distinguished award.	Vertical Collectivism
8. I often “do my own thing”.	Horizontal Individualism
9. Competition is the law of nature.	Vertical Individualism
10. If a co worker gets a prize, I would feel proud.	Horizontal Collectivism
11. I am a unique individual.	Horizontal Individualism
12. I would sacrifice an activity that I enjoy very much if my family did not approve of it.	Vertical Collectivism
13. Without competition it is not possible to have a good society.	Vertical Individualism

14. I feel good when I cooperate with others.

Horizontal Collectivism

7. Daily technology usage (Rosen et al., 2013)

Items taken from Rosen et al (2013) were used to examine social technology usage in Chapter 4. Items were measured on an ordinal scale: 0 = *Not at all*, 0.25 = *1-30 minutes*, 0.75 = *31 minutes - 1 hour*, 1.5 = *1-2 hours*, 3 = *3 hours*, 4 = *4 hours*, 5 = *5 or more hours*.

Scale Instructions:

How many hours a day do you spend on the following activities?

1. Going online
2. Emailing
3. IMing/chatting
4. Telephoning
5. Texting
6. Using social networking sites (e.g. Facebook; Twitter).

8. Technology-related anxiety (Rosen et al., 2013)

Five items from Rosen et al. (2013), were used to measure technology related anxiety in Chapter 4. Items were measured on a 4-item Likert scale from 1 = *Not anxious at all*, to 4 = *Highly anxious*.

Instructions:

If you cannot check the following technologies as often as you would like, how anxious do you feel?

1. Text messages
2. Phone calls
3. Social networking sites
4. Personal email
5. Work email

9. Celebrity Attitude Scale (CAS, Maltby, Houran, Lange, Ashe, & McCutcheon, 2002).

The entertainment-social subscale of the CAS was used to examine participant's celebrity attitudes and engagement in Chapter 5. Each item was examined on a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*).

Items

1. My friends and I like to discuss what my favorite celebrity has done.
2. One of the main reasons I maintain an interest in my favorite celebrity is that doing so gives me a temporary escape from life's problems.
3. I enjoy watching, reading, or listening to my favorite celebrity because it means a good time.
4. I love to talk with others who admire my favorite celebrity.
5. When something bad happens to my favorite celebrity I feel like it happened to me
6. Learning the life story of my favorite celebrity is a lot of fun.

7. It is enjoyable just to be with others who like my favorite celebrity.
 8. When my favorite celebrity fails or loses at something I feel like a failure myself
 9. I like watching and hearing about my favorite celebrity when I am in a large group of people.
 10. Keeping up with news about my favorite celebrity is an entertaining pastime.
-

Measures used in Chapter 5**10. The Brief SES Scale (Griskevicius, Tybur, Delton, & Robertson, 2011)**

The Brief SES Scale (Griskevicius, Tybur, Delton, & Robertson, 2011) was included as a subjective SES tool in Chapter 5. It consists of six questions, measured using a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*).

Items

1. My family usually had enough money for things when I was growing up
 2. I grew up in a relatively wealthy neighbourhood
 3. I felt relatively wealthy compared to the other kids in my school
 4. I have enough money to buy things I want
 5. I don't worry too much about paying my bills
 6. I don't think I'll have to worry about money too much in the future
-

11. The MacArthur Scale of Subjective SES—Youth Version (Goodman et al., 2001)

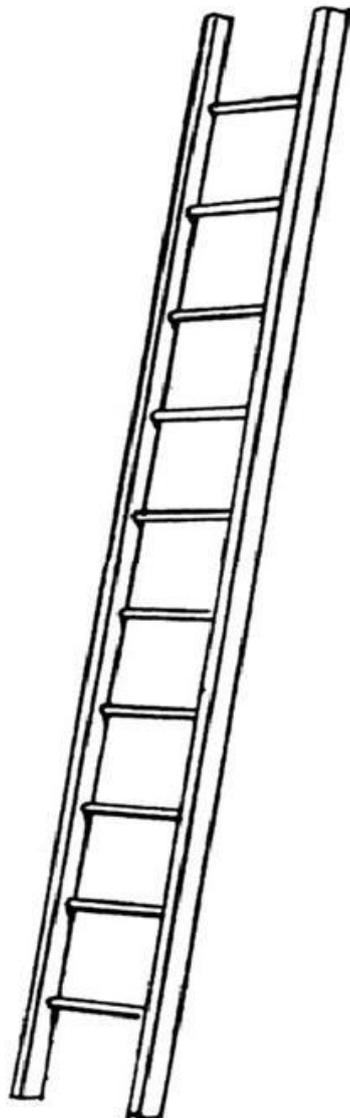
The MacArthur Scale of Subjective SES was used as a 1-item measure of subjective SES. Participants were asked to indicate their response on the ladder below, and were scored between 1 and 10 depending on the position on the ladder they chose.

Item Instructions:

Imagine that this ladder pictures how your society is set up (e.g. if you are Australian, this ladder represents Australian society).

- *At the top of the ladder are the people who are best off – they have the most money, the highest amount of schooling, and the jobs that bring the most respect.*
- *At the bottom are people who are the worst off – they have the least money, little or no education, no jobs, or jobs that no one wants or respects.*

*Now think about **your family**. Please tell us where you think your family would be on this ladder by clicking the ladder below.*



12. Priming items (Piff, 2015)

Priming materials were provided by the author. Each condition consisted of the following priming question, and participants were required to read the question and write three responses.

Control condition

Please take a few minutes to think about the things you do in an average day.

For example, one might go to work or spend time at the gym.

Please think of three things that you do in an average day and write them in the boxes below.

1. Please write something that you do in an average day.
2. Please write something that you do in an average day.
3. Please write something that you do in an average day.

Egalitarian priming condition

Some people have a tendency to think of themselves as more important than other people. Please take a few minutes to think of the benefits of treating others as equals. That is, think about some of the advantages of treating others as if they are just as important as yourself. For example, treating others as equals may allow you to make friends or earn others' respect.

Please think of three additional ways in which treating others as equals can be good and write them in the boxes below.

1. Please write something that can be good about treating others as equals.
2. Please write something that can be good about treating others as equals.
3. Please write something that can be good about treating others as equals.

13. Psychological Entitlement Scale (PES; Campbell et al., 2004)

The PES was used to measure psychological entitlement in Chapter 5. Each item was measured using a 7-point Likert scale (1= *strongly disagree*; 7 = *strongly agree*).

Items

1. I honestly feel I'm just more deserving than others.
 2. Great things should come to me.
 3. If I were on the Titanic, I would deserve to be on the first lifeboat!
 4. I demand the best because I'm worth it.
 5. I do not necessarily deserve special treatment.
 6. I deserve more things in my life.
 7. People like me deserve an extra break now and then.
 8. Things should go my way.
 9. I feel entitled to more of everything.
-

14. Social Dominance Orientation Scale – Shortened (SDO; Sidanius & Pratto, 1999)

A shortened measure of SDO, composed of the six best positive and negative items from the SDO scale (Sidanius & Pratto, 1999), was included as a measure of group-oriented entitlement in Chapter 5. Each item was scored using a 7-point Likert scale (1= *strongly disagree*; 7 = *strongly agree*).

Items

1. It's OK if some groups have more chance in life than others.
 2. Sometimes other groups must be kept in their place.
 3. We should do what we can to equalize conditions for different groups.
 4. Inferior groups should stay in their place.
 5. All groups should be given an equal chance in life.
 6. We would have fewer problems if we treated people equally
-

Appendix B: Supplemental Analyses for Chapter 3

Table B1

Hierarchical Regression Analysis of Age, Gender and Parenting Behaviors Predicting Grandiose Narcissism

Step	Predictor	β	<i>b</i>	95% <i>CI</i>	<i>SE</i>	<i>t</i>	<i>p</i>
1	Age	.39	-.03	(-.03, -.02)	<.01	-8.66	.000
	Gender	.10	.16	(.02, .30)	.07	2.27	.018
2	Age	.35	-.03	(-.03, -.02)	<.01	-7.92	.000
	Gender	.11	.17	(.03, .30)	.07	2.40	.017
	Parental rejection	.17	.23	(.06, .39)	.08	2.72	.007
	Parental Coldness	.11	-.11	(-.22, .01)	.06	-1.83	.069
	Parental Overprotection	.11	.13	(.01, .24)	.06	2.20	.028
3	Age	-.35	-.03	(-.03, -.02)	<.01	-7.85	.000
	Gender	.10	.16	(.02, .29)	.07	2.30	.022
	Parental rejection	.10	.14	(-.05, .32)	.09	1.47	.143
	Parental Coldness	-.20	-.20	(-.34, -.06)	.07	-2.82	.005
	Parental Overprotection	.08	.10	(-.02, .21)	.06	1.62	.106
	Maternal invalidation	.12	.12	(-.02, .26)	.07	1.68	.094
	Paternal invalidation	.10	.10	(-.02, .21)	.06	1.61	.109
4	Age	.34	-.03	(-.03, -.02)	<.01	-7.81	.000
	Gender	.10	.16	(.03, .29)	.07	2.37	.018
	Parental rejection	.19	.24	(.06, .43)	.09	2.62	.009
	Parental Coldness	.23	-.23	(-.36, -.09)	.07	-3.27	.001
	Parental Overprotection	.05	.05	(-.06, .17)	.06	0.88	.380
	Maternal invalidation	.18	.18	(.04, .32)	.07	2.54	.012
	Paternal invalidation	.11	.11	(-.01, .22)	.06	1.82	.069
	Maternal * Paternal Invalidation	-.22	-.23	(-.33, -.13)	.05	-4.52	.000

Table B2

Hierarchical Regression Analysis of Age, Gender and Parenting Behaviors Predicting Vulnerable Narcissism

Step	Predictor	β	<i>b</i>	95% <i>CI</i>	<i>SE</i>	<i>t</i>	<i>p</i>
1	Age	-.26	-.02	(-.03, -.01)	<.01	-5.71	.000
	Gender	-.09	-.15	(-.30, .01)	.08	-1.86	.064
2	Age	-.25	-.02	(-.03, -.01)	<.01	-5.52	.000
	Gender	-.09	-.15	(-.30, .00)	.08	-1.92	.056
	Parental rejection	.08	.11	(-.07, .29)	.09	1.19	.234
	Parental Coldness	.10	.11	(-.02, .23)	.07	1.64	.103
	Parental Overprotection	.10	.12	(.00, .25)	.06	1.95	.052
3	Age	-.25	-.02	(-.03, -.01)	<.01	-5.43	.000
	Gender	-.09	-.16	(-.31, -.01)	.08	-2.08	.038
	Parental rejection	.00	.00	(-.20, .20)	.10	<0.01	.997
	Parental Coldness	-.01	-.01	(-.16, .15)	.08	-0.09	.925
	Parental Overprotection	.07	.09	(-.04, .22)	.07	1.40	.162
	Maternal invalidation	.11	.12	(-.04, .27)	.08	1.48	.141
	Paternal invalidation	.14	.14	(.02, .27)	.07	2.20	.029
4	Age	-.24	-.02	(-.03, -.01)	<.01	-5.35	.000
	Gender	-.09	-.16	(-.30, -.01)	.07	-2.12	.034
	Parental rejection	.10	.14	(-.06, .34)	.10	1.42	.156
	Parental Coldness	-.04	-.04	(-.20, .11)	.08	-0.58	.565
	Parental Overprotection	.03	.03	(-.09, .16)	.06	0.51	.612
	Maternal invalidation	.18	.20	(.04, .35)	.08	2.53	.012
	Paternal invalidation	.15	.16	(.03, .28)	.06	2.50	.013
	Maternal * Paternal Invalidation	-.27	-.31	(-.42, -.20)	.06	-5.49	.000

Appendix C: Supplemental Analyses for Chapter 4

Appendix C.1 - Exploratory factor analysis and parallel analysis for technology use and anxiety

Daily technology use

Six items of daily social technology use were included from Rosen et al. (2013): internet use, social networking site use, IM/ chatting, texting, telephoning, and email. Exploratory factor analysis (EFA) using generalized least squares estimation was conducted to examine whether these items represent a single factor of daily technology use. Zero-order correlations for the items prior to EFA indicated that all items were significantly correlated $r = .11 - .53, p < .05$. The Kaiser-Meyer-Olkin measure of sampling adequacy was .72, and Bartlett's test of sphericity was significant ($\chi^2 (15) = 551.43, p < .001$). Analyses indicated two factors with Eigen values greater than 1.00: Factor 1 Eigen value = 2.49 explained 41.45% of the variance, and Factor 2 Eigen value = 1.09 and explained 18.08% of the variance.

Parallel analysis (O'Connor, 2000) was used to examine whether both of the factors indicated by the EFA are significant at $p < .05$. Principal components analysis was used and 1000 parallel datasets were calculated using permutations of the original dataset. The analysis indicated Factor 1 was significant as its Eigen value of 2.49 was larger than the 95th percentile value, 1.22, for the permutated data. Factor 2, however, was not significant (95th percentile Eigen value for permutated data = 1.12, larger than the raw data score of 1.09). As such, the items were combined into a single measure for analyses. Single measure internal reliability was acceptable, Cronbach's $\alpha = .71$.

Technology Anxiety

EFA and parallel analyses were used to examine the factor structure of technology anxiety items included in the study from Rosen et al. (2013), using the process outlined above. Five items were included measuring participants' anxiety if they were unable to use the following technologies: texting, telephone, social networking, private email, work email. Kaiser-Meyer-Olkin's measure of sampling adequacy was .69, and Bartlett's test of sphericity was significant ($\chi^2(10) = 566.02, p < .001$). Only one factor was produced: Eigen value = 2.46, explaining 49% of the variance. Parallel analysis was run as described above, and indicated the factor was significant (Eigen value = 2.46, greater than the 95th percentile value generated, 1.19). Anxiety items were combined into a single item, Cronbach's $\alpha = .74$.

Appendix C.2 – Study 2 Correlation Tables

Table C2.1

Correlations between Time 1 Variables for Study 2

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	M(SD)	α
1. Grandiose Narcissism														3.55 (0.76)	.88
2. Vulnerable Narcissism	.65***													3.23 (0.81)	.95
3. National Norms	.03	.08												4.51 (0.65)	.81
4. National ID	-.02	.02	-.26***											3.38 (0.86)	-
5. Group norms	-.01	.11	.05	-.06										3.42 (0.80)	.89
6. Group ID	.02	-.11	.05	.07	-.46***									4.39 (0.69)	-
7. VC	.09	.11	-.32***	.29***	-.13	.02								4.22 (1.02)	.62
8. HI	.29***	.09	.19**	-.08	<.01	-.05	-.07							5.45 (0.89)	.64
9. VI	.27***	.14	-.12	.12	.02	.08	.22**	.29***						4.10 (1.15)	.68
10. Celebrity Attitudes	.26***	.38***	-.04	.03	.01	-.08	.01	-.02	.10					2.09 (0.94)	.95
11. Technology Anxiety	.31***	.30***	.01	-.01	.06	.07	-.05	.03	-.04	.15*				1.67 (0.58)	.74
12. Technology Use	.26***	.32***	-.01	-.03	<.01	.03	.07	.04	.08	.22**	.31***			6.02 (4.02)	.65
13. Age	-.36***	-.30***	.01	.05	.06	-.04	.09	-.13	-.02	-.23***	-.33***	-.30***		28.79 (12.28)	-
14. Gender	-.06	-.24***	-.06	.02	-.15*	.06	.12	-.06	.01	-.15*	-.12	-.16*	.26***	0.27 (0.45)	-

Note: VC = Vertical collectivism, HI = Horizontal Individualism, VI = Vertical individualism, ID = Identification. Gender coded 1 = Male, 0 = Female, α = Cronbach's Alpha. National and important group norm variables coded such that higher values indicate more self-focused/individualistic norms. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table C2.2
Correlations between Time 2 Variables for Study 2

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	M(SD)	α
1. Grandiose Narcissism														3.52 (0.72)	.88
2. Vulnerable Narcissism	.69***													3.23 (0.83)	.96
3. National Norms	-.02	<.01												4.52 (0.64)	.82
4. National ID	.04	-.10	-.12											3.26 (0.81)	-
5. Group norms	.03	.08	.09	.09										4.64 (0.96)	.94
6. Group ID	-.02	-.05	.09	.20**	.39***									4.30 (0.79)	-
7. VC	.15*	.20**	-.20**	.12	.33***	.12								4.31 (0.99)	.67
8. HI	.31***	.11	.25***	-.03	.02	.07	-.02							5.45 (0.83)	.66
9. VI	.18**	.15*	.03	.15*	.01	-.03	.20**	.18**						4.02 (1.11)	.70
10. Celebrity Attitudes	.27***	.34***	-.07	.01	.07	-.02	.19**	.05	.12					2.19 (0.89)	.94
11. Technology Anxiety	.13	.21**	.06	.08	.07	.03	-.07	-.05	-.03	.15*				1.66 (0.53)	.61
12. Technology Use	.18**	.28***	.04	.10	.06	.07	.03	.10	.15*	.06	.21**			5.67 (3.39)	.75
13. Age	-.30***	-.27***	-.08	-.13	-.16*	-.09	.08	-.03	.01	-.23**	-.35***	-.26**		28.79 (12.28)	-
14. Gender	-.04	-.18**	-.12	-.04	-.02	-.12	.06	-.08	.01	-.19**	-.21**	-.12	.26***	0.27 (0.45)	-

Note: VC = Vertical collectivism, HI = Horizontal Individualism, VI = Vertical individualism, ID = Identification. Gender coded 1₀ = Male, 0 = Female. National and important group norm variables coded such that higher values indicate more self-focused/individualistic norms. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix C.3 – Invariance Testing for Narcissism and Social Factors

We investigated whether the measures included in Study 2 were invariant over time. Configural and metric models examined whether the factor structure and pattern of factor loadings, respectively, were equivalent across Time 1 and Time 2. Changes (Δ) in the comparative fit index (CFI) $< .10$, indicated invariance across the models (Little, 2013). Item parcels were constructed for each model by examining corrected item-total correlations and pairing stronger and weaker correlating items together into three parcels for each variable (Little, 2013). As seen in Table C4.1, all models demonstrated acceptable fit. Examination of Δ CFI indicates that the models are equivalent, however some vertical collectivistic attitudes displayed some variance. Overall, the findings indicate that the measures can be compared across time points.

Table C3.1

Fit Statistics across Levels of Invariance Testing for Narcissism and Social Factors

Variable	Factorial		χ^2	df	RMSEA	CFI	Δ CFI
	Invariance						
Grandiose	Configural		4.692	5	0.000	1.000	-
Narcissism	Metric		6.740	7	0.000	1.000	.000
Vulnerable	Configural		10.640	5	0.074	0.997	-
Narcissism	Metric		11.690	7	0.057	0.997	.000
Vertical	Configural		5.522	5	0.022	0.999	-
Individualism	Metric		6.009	7	0.000	1.000	.001
Vertical	Configural		8.752	5	0.060	0.992	-
Collectivistic	Metric		16.406	7	0.081	0.979	.013
Horizontal	Configural		4.034	5	0.000	1.000	-
Individualistic	Metric		5.154	7	0.000	1.000	.000
National Norms	Configural		11.567	5	0.080	0.988	-
	Metric		11.868	7	0.058	0.991	.003
Technology	Configural		6.665	5	0.040	0.997	-
Use	Metric		7.252	7	0.013	1.000	.003
Technology	Configural		6.751	5	0.041	0.996	-
Anxiety	Metric		6.843	7	0.000	1.000	.004
Celebrity	Configural		2.905	5	0.000	1.000	-
attitudes	Metric		12.806	7	0.063	0.996	.004

Note. N=207. RMSEA =Root Mean Squared Error of Approximation, CFI = Comparative Fit Index, Δ CFI = change in CFI across models. All χ^2 model fit indices were not significant at $p < .05$.

Appendix C.4 – Path Analysis and Structural Equation Models for Study 2

Path Analysis

To examine whether grandiose and vulnerable narcissism predicted one another over time, a path model was constructed with cross-lagged paths between narcissism subtypes, and age and gender as covariate variables at Time 1. Fit for the model was acceptable (e.g., Little, 2013), $\chi^2(4) = 0.870, p = .929$; CFI = 1.00, TLI = 1.01, RMSEA = .000 (90% CI = .000, .032), SRMR = .008. Time 1 Grandiose and vulnerable narcissism were moderately covaried at Time 1, $\rho = .65$ as were their Time 2 error terms, $\psi = .63$. Grandiose and vulnerable narcissism at Time 1 strongly predicted their values at Time 2 ($\beta = .75, p < .001$ and $\beta = .76, p < .001$ respectively). Neither grandiose ($\beta = .07, p = .207$) nor vulnerable narcissism ($\beta = .06, p = .273$) significantly predicted one another. As such, separate models for grandiose and vulnerable narcissism were examined.

Structural Equation Modelling

Three models were proposed to examine narcissism over time. First, a model of grandiose and vulnerable narcissism was calculated to examine whether grandiose and vulnerable narcissism predicted one another over time. Following this, separate cross-lagged models were calculated to examine the relationship between each narcissism subtype and its strongest predictors from Study 1. For each model item parcels were created for each variable by using corrected item-total correlations, and pairing stronger and weaker correlating items together into three parcels for each latent variable (Little, 2013). For variables with 3 items, each item was used as a manifest variable instead of parceling, and for those with 4-5 items, 1-2 parcels were created so that the latent variable had 3 manifest indicators.

To examine whether grandiose and vulnerable narcissism predicted one another over time, a structural equation model was constructed with cross-lagged paths between

narcissism subtypes, and age and gender as covariate variables (Figure C5.1). Error terms of grandiose

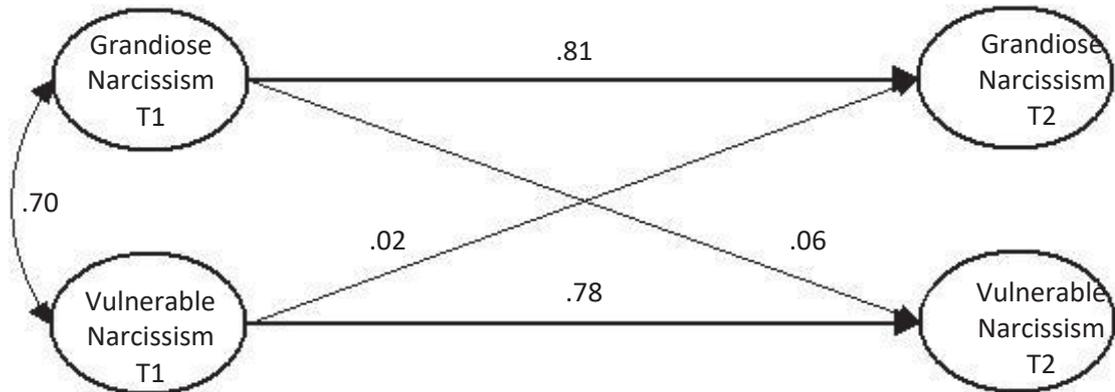


Figure C4.1. Cross-lagged model of vulnerable and grandiose narcissism across Time 1 and Time 2, controlling for age and gender ($N = 207$). T1 = Time 1, T2 = Time 2. All values are standardized, manifest variables and error terms are not depicted. Values $\geq .70$ are significant at $p < .001$.

and vulnerable narcissism were covaried for time 1 and time 2, and found to be strongly covaried (standardized estimates = .70 for Time 1 variables, .75 for Time 2 variables). Fit for the model was acceptable (e.g., Little, 2013), $\chi^2(62) = 110.07, p < .05$; CFI = .99, TLI = .98, RMSEA = .061 (90% CI = .042, .080), SRMR = .03. Grandiose and vulnerable narcissism at Time 1 strongly predicted their values at Time 2, supporting Hypothesis 10, but did not predict one another. As such, the model indicates that although highly related, the subtypes do not predict one another over time, and so separate models for grandiose and vulnerable narcissism were examined.

Grandiose Narcissism model. The model for grandiose narcissism included horizontal individualism, celebrity attitudes, technology anxiety, with age and gender included as covariates of Time 1 variables. Error terms for time 2 latent constructs were covaried and error terms for corresponding item parcels for Time 1 and Time 2 variables were also covaried to account for measurement error. Overall the model

(Figure C5.2) had acceptable fit, $\chi^2(258) = 355.22, p < .001$; CFI = .97, TLI = .97, RMSEA = .043 (90% CI = .031, .053), SRMR = .04. As outlined in Figure C5.2, the only significant predictor of grandiose narcissism at time 2 was grandiose narcissism at Time 1. In addition, grandiose narcissism did not significantly predict celebrity attitudes, horizontal individualism, or anxiety regarding technology at time 2.

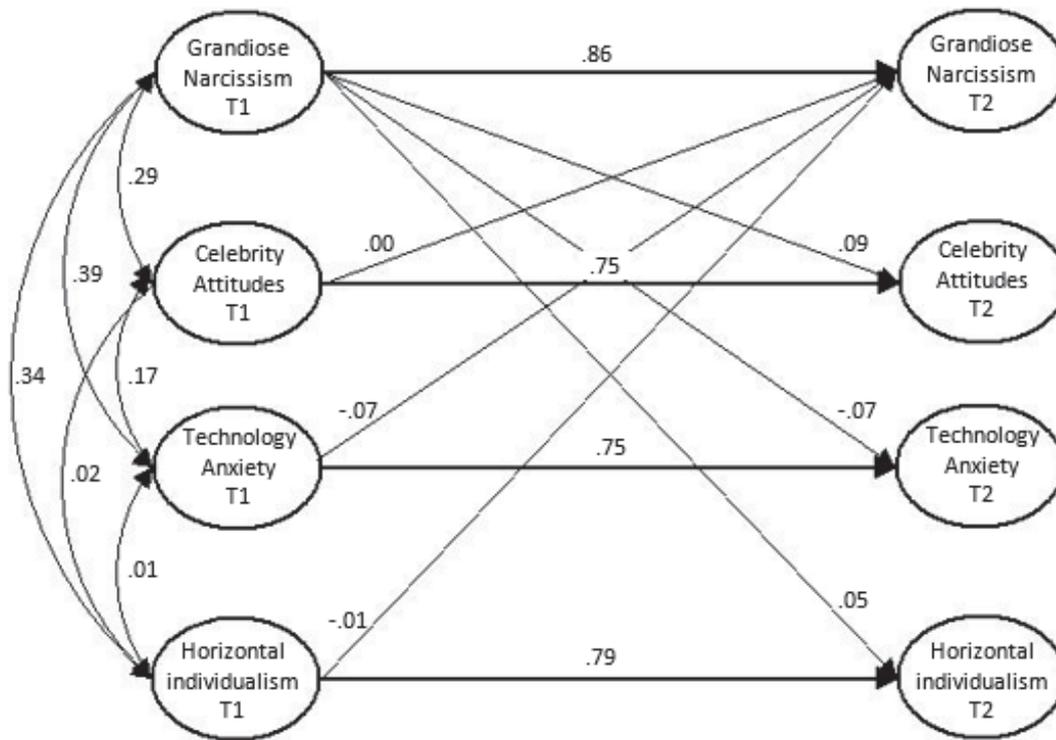


Figure C4.2. Cross-lagged model of grandiose narcissism, celebrity attitudes, horizontal individualism and technology anxiety, controlling for age and gender ($N = 207$). Manifest variables and error terms are not depicted. Values $\geq .17$ are significant at $p < .05$.

Vulnerable Narcissism model. The model for vulnerable narcissism included celebrity attitudes and technology anxiety, as these were most strongly predictive of vulnerable narcissism in Study 1. Age and gender were included as covariates of Time 1 variables. Error terms for Time 2 latent constructs were covaried and error terms for corresponding item parcels for Time 1 and Time 2 variables were also covaried to

account for measurement error. Overall the model (Figure C5.3) had good fit, $\chi^2(143) = 189.49, p = .006$; CFI = .99, TLI = .98, RMSEA = .040 (90% CI = .022, .054), SRMR = .04 Overall this model indicates that although associated with one another at Time 1, vulnerable narcissism was not predicted by celebrity attitudes or anxiety regarding technology use.

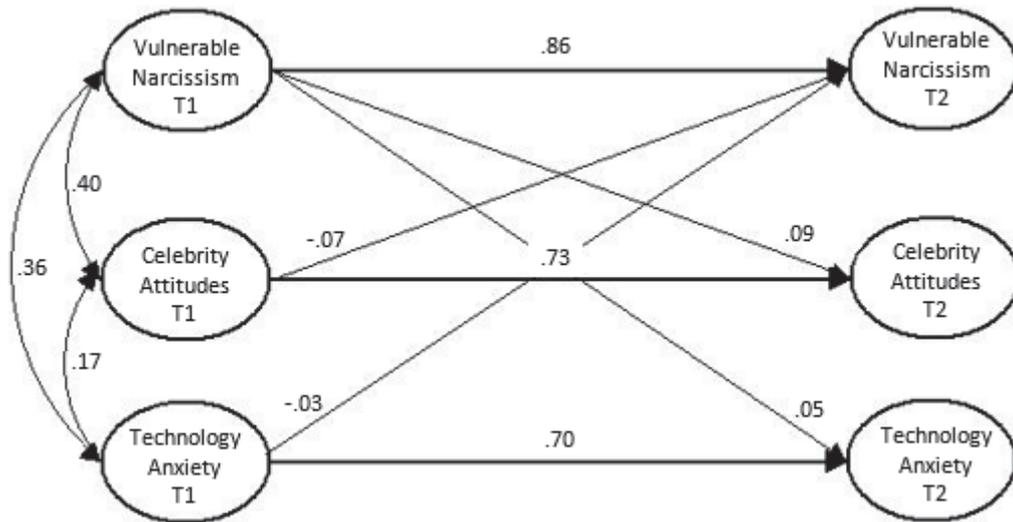


Figure C4.3. Cross-lagged model of vulnerable narcissism, celebrity attitudes, and technology anxiety, controlling for age and gender ($N = 207$). Manifest variables and error terms are not depicted. Values $\geq .17$ are significant at $p < .05$.

Appendix C.5 –Change Score Models

Table C5.1

Change Score Models of Time 1 → Time 2 change for narcissism, social norms and attitudes.

	T1 Grandiose Narcissism	Δ Grandiose Narcissism
Age	-0.023 (0.004)***	0.004(0.003)
Gender	0.043 (0.115)	0.023 (.078)
Intercept	3.540 (0.058)***	-0.038(0.039)
Residual Variance	0.501 (0.49)***	0.229 (0.023)***
T1 Grandiose Narcissism <-> Δ Grandiose Narcissism		-0.131 (0.025)***
	T1 Vulnerable Narcissism	Δ Vulnerable Narcissism
Age	-0.016 (0.004)***	0.000 (0.003)
Gender	-0.340 (0.123)**	0.109 (0.082)
Intercept	3.321 (0.062)***	-0.026 (0.041)
Residual Variance	0.572 (0.056)***	0.254 (0.025)***
T1 Vulnerable Narcissism <-> Δ Vulnerable Narcissism		-0.099 (0.027)***
	T1 Vertical Collectivism	Δ Vertical Collectivism
Age	0.005 (0.006)	0.000 (0.005)
Gender	0.252 (0.164)	-0.138 (0.125)
Intercept	4.155 (0.083)***	0.123 (0.063)^
Residual Variance	1.020 (0.100)***	0.592 (0.058)***
T1 Vertical Collectivism <-> Δ Vertical Collectivism		-0.321 (0.058)***
	T1 Horizontal Individualism	Δ Horizontal Individualism
Age	-0.009 (0.005)	0.008 (0.004)
Gender	-0.065 (0.142)	-0.086 (0.113)
Intercept	5.467 (0.072)***	0.026 (0.060)
Residual Variance	0.771 (0.076)***	0.525 (0.052)***
T1 Horizontal Individualism <-> Δ Horizontal Individualism		-0.308 (0.049)***

	T1 Vertical Individualism	Δ Vertical Individualism
Age	-0.003 (0.007)	0.003 (0.006)
Gender	0.019 (0.186)	-0.004 (0.165)
Intercept	4.090 (0.094)***	-0.071 (0.083)
Residual Variance	1.318 (0.130)***	1.031 (0.101)***
T1 Vertical Individualism \leftrightarrow Δ Vertical Individualism		-0.559 (0.090)***
	T1 National Descriptive Norms	Δ National Descriptive Norms
Age	-0.002 (0.004)	-0.004 (0.003)
Gender	-0.104 (0.105)	-0.048 (0.092)
Intercept	4.540 (0.053)***	0.023 (0.047)
Residual Variance	0.418 (0.041)***	0.322 (0.32)***
T1 National Descriptive Norms \leftrightarrow Δ National Descriptive Norms		-0.169 (0.028)***
	T1 National Identification	Δ National Identification
Age	0.003 (0.005)	-0.011 (0.005)*
Gender	0.019 (0.139)	-0.046 (0.131)
Intercept	3.377 (0.071)***	-0.108 (0.067)
Residual Variance	0.737 (0.072)***	0.655 (0.064)***
T1 National Identification \leftrightarrow Δ National Identification		-0.378 (0.055)***

	T1 Important Group Descriptive Norms ^a	Δ Important Group Descriptive Norms
Age	0.007 (0.006)	-0.021 (0.012)
Gender	-0.244 (0.176)	0.414 (0.354)
Intercept	3.497 (0.086)***	1.120 (0.173)***
Residual Variance	0.616 (0.082)***	2.490 (0.333)***
T1 Important Group Descriptive Norms \leftrightarrow Δ Important Group Descriptive Norms		-1.036 (0.153)***
	T1 Important Group Identification ^a	Δ Important Group Identification
Age	-0.004 (0.005)	0.002 (0.006)
Gender	0.085 (0.140)	-0.314 (0.170)
Intercept	4.434 (0.056)***	-0.016 (0.083)
Residual Variance	0.388 (0.052)***	0.577 (0.077)***
T1 Important Group Identification \leftrightarrow Δ Important Group Identification		-0.217 (0.049)***
	T1 Celebrity Attitudes	Δ Celebrity Attitudes
Age	-0.016 (0.005)**	0.002 (0.004)
Gender	-0.217 (0.147)	-0.082 (0.108)
Intercept	2.149 (0.074)***	0.126 (.055)*
Residual Variance	0.820 (0.081)***	0.441 (0.043)***
T1 Celebrity Attitudes \leftrightarrow Δ Celebrity Attitudes		-0.262 (0.046)***

	T1 Technology Attitudes	Δ Technology Attitudes
Age	-0.015 (0.003)***	0.001 (0.003)
Gender	-0.051 (0.088)	-0.083 (0.077)
Intercept	1.680 (0.045)***	0.017 (.039)
Residual Variance	0.294 (0.029)***	0.227 (0.022)***
T1 Technology Attitudes \leftrightarrow Δ Technology Attitudes		-0.142 (0.020)***
	T1 Technology Use	Δ Technology Use
Age	-0.092 (0.022)***	0.024 (0.017)
Gender	-0.770 (0.617)	0.365 (0.467)
Intercept	6.231 (0.313)***	-0.451 (0.237) ^^
Residual Variance	14.491 (1.424)***	8.298 (0.816)***
T1 Technology Use \leftrightarrow Δ Technology Use		-6.092 (0.872)***

Note. Effects reported are unstandardized, standard errors are reported in parentheses. Δ = average estimated change. ^a important group norms and group identification were calculated with individuals who had identified the same important group at Time 1 and Time 2, $n = 112$, all other variables $N = 207$. ^^ $p = .057$, ^ $p = .052$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix C.6 – Example Mplus Syntax for Change Score Model**Grandiose Narcissism Model****Syntax adapted from approach used by Brandt, Wisneski, and Skitka (2015).**

INPUT INSTRUCTIONS

TITLE: Change Score Model for Grandiose Narcissism.

DATA:

FILE IS " 207MPLUS.dat";

VARIABLE:

NAMES ARE ID12 IDN1 IDG1 IDN2 IDG2 AGE12 GENDER12 GN1M VN1M DNF1M
 DNS1M DNA1M DNR1M DNG1M VC1M HI1M VI1M DIF1M DIS1M DIA1M
 DIR1M DIG1M CEL1M TA1M TH1M GN2M VN2M DNF2M DNS2M DNA2M
 DNR2M DNG2M VC2M HI2M VI2M DIF2M DIS2M DIA2M DIR2M DIG2M
 CEL2M TA2M TH2M IMPG12;

USEVARIABLES ARE GN1M GN2M HI1M VI1M CEL1M TA1M

GENDER12 AGE12;

useobservations = AGE12 > 17;

MISSING ARE ALL (-999);

DEFINE: CENTER AGE12 (GRANDMEAN); !Estimate change at mean age

ANALYSIS: !default meanstructure analysis

MODEL:

!create change between T1 and T2 narcissism.

!Grandiose Narcissism change

gncs BY GN2M@1; !define latent narcissism change by T2

GN2M ON GN1M@1; !autoregression of T2 T1

GN2M@0 GN1M gncs; !var at T2=0, estimate var for T1 & narcissism change

[GN2M@0 gncs GN1M]; !mean at T2=0, estimate mean T1 & narcissism change

gncs with GN1M ; !estimate covariance between T1 and narcissism change

!adjust for T1 social factors, age and gender

gncs on HI1M VI1M CEL1M TA1M GENDER12 AGE12;

!adjust for T1 social factors, age and gender

GN1M on HI1M VI1M TA1M CEL1M GENDER12 AGE12;

Appendix D: Supplemental Analyses for Chapter 5

The MacArthur SES Scale (Goodman et al., 2001) did not significantly differ between the control and experimental condition: Control $M = 7.04$, Experimental $M = 7.02$, $t(192) = .110$, $p = .913$. As with the Brief SES Scale (Griskevicius, Tybur, Delton, & Robertson, 2011) outlined in Chapter 5, the MacArthur SES Scale was not correlated with either narcissism subtype in the control condition, however a small association was found between the SES Scale and grandiose narcissism in the experimental condition. We conducted the moderated mediation analyses outlined in Chapter 5 with the MacArthur Scale. As depicted in Table D.1 The MacArthur SES Scale was not associated with grandiose or vulnerable narcissism and was not associated with PES or SDO.

Table D.1
Model Coefficients for the Moderated Mediation Models of MacArthur SES Scale Predicting Grandiose and Vulnerable Narcissism, with SDO and PES as Mediators and Moderated by Experimental Condition

Predictor	Dependent Variable											
	PES			SDO			Grandiose Narcissism			Vulnerable Narcissism		
	<i>b</i>	(<i>SE</i>)	<i>p</i>	<i>b</i>	(<i>SE</i>)	<i>p</i>	<i>b</i>	(<i>SE</i>)	<i>p</i>	<i>b</i>	(<i>SE</i>)	<i>p</i>
SES	.01	(.04)	.762	.03	(.04)	.407	.05	(.03)	.114	.04	(.03)	.180
PES	-	-	-	-	-	-	.30	(.06)	<.001	.23	(.06)	<.001
SDO	-	-	-	-	-	-	-.06	(.07)	.375	-.04	(.07)	.505
Condition	.21	(.13)	.121	.18	(.12)	.137	<.01	(.10)	.967	.04	(.10)	.662
Condition *SES	-.01	(.09)	.877	-.06	(.08)	.446	.07	(.07)	.275	-.01	(.11)	.935
Gender	-.03	(.14)	.856	.44	(.12)	<.001	.20	(.11)	.071	-.10	(.11)	.338
Age	<.01	(.02)	.833	<.01	(.01)	.521	-.03	(.01)	.017	-.02	(.01)	.112
			<i>R</i> ² = .02			<i>R</i> ² = .08			<i>R</i> ² = .17			<i>R</i> ² = .11
			<i>F</i> (5, 188) = 0.57, <i>p</i> = .725			<i>F</i> (5, 188) = 3.18, <i>p</i> = .009			<i>F</i> (7, 186) = 5.33, <i>p</i> < .001			<i>F</i> (7, 186) = 3.37, <i>p</i> = .002

Note. *N* = 194. Condition and SES were mean centred for analyses. Coefficients are unstandardized. Gender coded 0 = Female, 1 = Male, Condition coded 0 = Control, 1 = Prime. SES = MacArthur SES Scale, PES = Psychological Entitlement Scale, SDO = Social Dominance Orientation. Grandiose and vulnerable narcissism run as separate models.

