PERCEIVED SELF-IN-GROUP PROTOTYPICALITY AND PSYCHOLOGICAL WELL-BEING

Peta Hoffmann

A thesis submitted for the degree of Doctor of Philosophy (Clinical Psychology) of The Australian National University
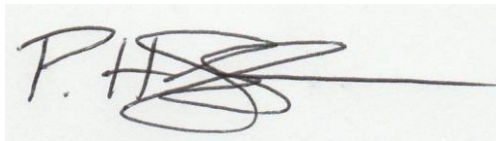
April 2018

DECLARATION

The research described in this thesis represents original work undertaken in the Department of Psychology, at the Australian National University. The writing and work outlined in the thesis chapters are solely my own.

_____

Peta Hoffmann

Word Count: 76,355

ACKNOWLEDGEMENTS

ABSTRACT

Recent work examining health and well-being has identified people's group memberships as important contributors to positive life outcomes. Social identification with these groups, in particular, has been identified as a powerful positive predictor of psychological well-being. In the current thesis I present five studies, two correlational, two experimental and one overarching study which combined the data from the preceding studies. Each of these studies expands upon this earlier work from within the social identity approach to understanding psychological well-being by examining not only people's relative levels of social identification with their groups, but their perceptions of their own *relative in-group prototypicality* within these groups. Building explicitly upon self-categorization theory principles, the results of these five studies demonstrate that: (1) perceived self-in-group prototypicality can be measured separately from social identification with a group, and that (2) these two combine multiplicatively, so that people who have both high social identification *and* high perceptions of self-in-group prototypicality also have the highest level of psychological well-being on several psychological well-being outcome measures. This latter effect occurs even after controlling for known factors related to these outcomes, including age, gender and major life stressors. Overall, this thesis provides evidence for the first time that perceived self-in-group prototypicality contributes to predicting whether a social group may be beneficial to an individual's psychological well-being. The theoretical and clinical implications of the findings of this thesis are then discussed in relation to the social factors in the biopsychosocial model of psychological well-being.

TABLE OF CONTENTS

TABLE OF FIGURES

Figures

TABLES

CHAPTER 1

Overview

Aims and Objectives of the Thesis

Psychologists have approached psychological well-being from a variety of perspectives. The most dominant model is referred to as the biopsychosocial model (Engel, 1960), in which all three factors - Biological, Psychological and Social – are considered to impact upon peoples' psychological well-being. Biological factors (genetic, biochemical, etc.) and psychological factors (mood, personality, behaviour, etc.) in this model have received comparatively high levels of theoretical and empirical attention. In contrast, the social factors (cultural, familial, socioeconomic, etc.) have been relatively less well theoretically integrated. In order to fill this observed gap in the conceptual and empirical work, this thesis focuses on the social factors which influence psychological well-being. I specifically employ the social identity approach (SIA) (Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher & Wetherell, 1987) to examine how social psychological processes - seeing oneself in terms of a social identity and embodying the characteristics of the identity - may be related to psychological well-being. I suggest that, it is only through the psychological representation of social group memberships within individuals, that social factors at all levels of analysis, come to influence their psychological well-being. I demonstrate that employing this conceptual framework to examine the influence of social factors in the biopsychosocial model of psychological well-being enables us to more fully integrate 'the social' in clinical psychology.

In the first three chapters, I provide a broad review of the extensive literature that has examined psychological well-being, the social factors important to psychological well-being, and highlight the insufficiently nuanced approach to examining these constructs. Reviewing literature in this domain will, of course, involve drawing upon research that touches on the biological or psychological factors, but the key focus will remain predominantly on the social factors. I then present the key concepts from within the SIA that have recently been employed to examine these

concepts and review the literature which, using this approach, has revealed its value in explaining how social factors influence psychological well-being. I then present the empirical predictions derived from this review that are employed in the current thesis to examine the underlying psychological processes by which social factors come to influence psychological well-being.

In Chapter 2, I provide an analysis of how psychological well-being is conceptualised, the forms it takes, how it is experienced and how it is measured. This informs the definition of psychological well-being I employ in the current thesis. I also briefly explain what are thought to be the causes of psychological well-being or psychological ill-health and how this knowledge has been applied to the work of clinical psychologists in the treatment and prevention of psychological ill-health.

Then, in Chapter 3, I review the research, covering a broad range of topics that explores the social factors that influence psychological well-being. This research suggests that social factors are important to psychological well-being and highlight the value of considering the social component in the bio-psychosocial model of psychological well-being. In doing this, I highlight the effects of social processes on psychological well-being and demonstrate there is limited integration of the evidence from various levels of analysis.

Chapter 4 then introduces a specific model of social processes, the social identity approach (SIA), which was originally used to explain intergroup relations but has recently been expanded into the area of health and well-being. I explain the value of employing this framework to examine the social component of psychological well-being. I introduce concepts explained by this theoretical perspective that are essential for the current analysis and review some literature on the association between social identity concepts and psychological well-being, before making a series of new predictions to be examined in the current thesis.

In this targeted review of the social identity approach, I provide a rationale for examining prototypicality as a moderating variable in the relationship between social identification and psychological well-being. I outline the evidence that social identification has a positive relationship with psychological well-being, but also the evidence that indicates possible exceptions to this. I then explore how the concept of

prototypicality, particularly how it relates to determining one's representativeness as a group member or 'fit' within a social group, relates to psychological well-being and the theoretical implications of this.

In Chapter 5, I outline the specific conceptual and empirical hypotheses that I examine in the following empirical work of this thesis. I briefly summarise the rationale for exploring these concepts to explain the effects of social factors on psychological well-being previously outlined. I surmise that social identification will positively predict psychological well-being and perceived self-in-group prototypically will moderate its impact.

In Chapter 6, I then present the first of six empirical studies in which I describe and examine the psychometric properties of a scale developed specifically for this thesis. This new measure of self-perceived in-group prototypicality, the Perceived Self-In-group Prototypicality Scale (PSIPS), measures perceptions of one's own relative in-group prototypicality as a group member. Using data combined from four unique datasets, I demonstrate that this scale successfully measures this construct separately from social identification. Based on data obtained in the four data sets described in the following chapters, I illustrate that this new scale is a sound basis of measurement of perceived self-in-group prototypicality for use in the empirical studies contained in the current thesis.

In Chapter 7, I present the results from two correlational studies (Studies 2 and 3), examining two different university student identities (student residential hall and Australian National University student). In both studies, I measure social identification, relative levels of self-in-group prototypicality and examine the relationship between these variables and a number of measures of psychological well-being. I find a strong positive relationship between social identification and psychological well-being, and that prototypicality does moderate the positive effects of social identification for a range of psychological well-being measures, in a number of ways. Because this was tested in two separate studies, with the second including a slightly different measure of depression, I was able to examine if, indeed, the nature of the moderation was different across salient identities and for different measures of psychological well-being. To further examine if there was any causal relationship between prototypicality levels and psychological well-being, the nature of the effects shown in Studies 2 and 3 were then

examined in two experimental studies (Studies 4 and 5), reported in the following chapter.

In Chapter 8, I then present the results of these two experimental studies (Studies 4 and 5). These studies examined the effects of the same two independent variables: social identification (high/low) and perceived self-in-group prototypically (high/low), on six dependent measures of psychological well-being (including Satisfaction with life, Social Support, Social Connectedness, Depression, Anxiety and Stress). In both Studies 4 and 5, a manipulation of perceived self-in-group prototypicality was employed to examine the causal role of this variable and determine if its impact on psychological well-being was independent of social identification. The manipulation of prototypicality occurred via the provision of feedback on the results participants obtained on bogus psychological tests. In both cases the bogus psychological test feigned measuring participants' degree of 'typicality'. The bogus 'psychological test' used in Study 4 was an Implicit Attitudes Test (adapted from Greenwald, McGhee, & Schwartz, 1998), while in Study 5 it was a Personal Attributes Test (developed for this thesis). In both cases the bogus feedback was presented in the same format, with participants being informed that they were either high or low in prototypicality compared to other ANU Students. This was a particularly difficult manipulation to instantiate effectively as it essentially attempts to tell individuals that what they may consciously think of themselves may be different to what their actual perceptions may be. The measure of perceived self-in-group prototypicality (PSIPS), developed for this thesis, was also included in both studies and served as a manipulation check. Unfortunately there was no significant effect on the PSIPS as a function of the prototypicality manipulation. Hence an analysis of measured prototypicality (PSIPS) was then conducted to examine patterns consistent with those examined in Studies 2 and 3. This analysis revealed that perceived self-in-group prototypicality did again moderate the positive effects of social identification on a number of measures of psychological well-being.

In both Studies 4 and 5, the ANU student identity was the constant salient social identity employed. However, the specified comparison out-group in the PSIPS items differed between these two studies. In Study 4, the out-group specified was students from a lower status vocational educational institution ('TAFE students'), while in Study 5 it was broadly defined as 'students from another institution'. This enabled me to

examine the influence of comparative fit processes (defined more fully later in this thesis) on one's own relative in-group prototypicality for a valued social identity and its impact on psychological well-being.

Chapter 9 then presents the results of Study 6. In this study the data from Studies 2, 3, 4 and 5 (presented in the previous two chapters of this thesis) were compiled and analysed. This final study, therefore, provided a larger sample size and the ability to clarify any inconsistency in patterns of significant moderation effects of relative in-group prototypicality on social identification's relationship with psychological well-being. After accounting for the effects of being in the correlational studies (2 and 3) or the experimental studies (4 and 5), and covariates of age, gender, English as a second language and experience of a major life stressor in the last six months, the combination of higher identification and higher prototypicality consistently predicted higher levels of psychological well-being. Combined, these results therefore provided evidence for the first time that there is value to one's psychological well-being from seeing oneself in terms of a social group identity *and* embodying the attributes of a social identity.

In Chapter 10, I summarise the findings of all five studies and their contribution to the overall research program. In doing so I demonstrate that the social identity approach provides an important and, as yet, not fully recognised conceptual framework from which to examine social processes in psychological well-being. I show how the extent to which one sees oneself in terms of a social identity and as embodying the attributes of that identity constructs one's sense of psychological well-being. For the first time, through measuring perceived self-in-group prototypicality and social identification separately and examining how these two concepts interact, I demonstrate that social identity processes are able to explain and successfully predict psychological well-being. I then discuss the implications of these empirical findings for social identity theory and how they may relate, and could be applied to, clinical psychology's conceptualisation of social factors in the biopsychosocial model and to applied prevention and intervention programs that seek to enhance psychological well-being. Some limitations of the current research program are also outlined and addressed in this final chapter.

CHAPTER 2

Psychological Well-being

Chapter Overview

Psychological well-being is a concept used regularly in the psychological literature and practice of clinical psychologists, but eludes precise definition. For example, some define it abstractly (e.g., Waterman, 2008), others define it operationally (e.g., Diener, 1984), and yet others define it in terms of a specific measure (e.g., Ryff & Singer, 1996) and of course it is also defined, by clinicians, in terms of symptomatology and clinical presentation (American Psychiatric Association, 2013). The term 'psychological well-being', can therefore describe a range of experience from complete well-being to ill-health (i.e. the presence of symptoms of psychopathology or mental illness). In this chapter, I review the different conceptualisations of psychological well-being in the literature, before I propose a definition of psychological well-being for the current work.

The biopsychosocial model of psychological well-being states that biological, psychological and social factors, and their interactions, contribute to psychological well-being (Engel, 1980). A review of the extensive and broad based theoretical and empirical literature reveals that the biological and psychological factors have received considerable attention (Borrell-Carrió, Suchman, & Epstein, 2004; Deiner, Suh, Lucas, Smith, 1999; Engel, 1960; Hankin, & Abela, 2005; Huppert, 2009), whereas, the social components to psychological well-being have been less well integrated (Kessler, Price & Wortman, 1985; Coyne & Downey, 1991; Cruwys, 2014). For this reason, the focus of this thesis is on the social contributors to psychological well-being. Therefore, the current chapter's review of the psychological well-being literature focuses primarily on psychological well-being in terms of individuals subjective judgments of their own well-being as these are most likely to be impacted by social processes. The focus of this review will also remain on psychological well-being at more sub-clinical levels,

because clinical levels of severe psychopathology are shown to have a strong biological component (Zuckerman, 1999). This in no way negates the growing evidence of the importance of social processes in the aetiology, prevention and treatment of serious psychopathology (Cruwys, Haslam, Dingle, Haslam, & Jetten, 2014), but instead emphasises the effects of social factors on subjective experience, which may not necessarily always constitute the presence of symptoms of severe mental illness (Burns & Machin, 2013). However, while the focus of this thesis is on the sub-clinical end of the psychological well-being continuum, the processes examined may in fact contribute to our understanding of social processes' effects on psychological well-being across this whole continuum. Considering psychological well-being in this way facilitates my review of the broadest possible extant literature on psychological well-being and its social contributors within this thesis.

Defining Psychological Well-being

Historically, psychological research and practice concerned with human psychological well-being has focused on psychopathology and reducing mental illness (Berrios, 1996). The dominant models within this tradition are currently the stress-diathesis (Zubin, Stuart & Condray, 1992) and biopsychosocial models (Engel, 1979), which explain psychological ill health as resulting from the interaction of vulnerabilities (biological or psychological) and exposure to stressors upon the stress response of an individual (Ingram & Luxton, 2005). However, there is another perspective that suggests being 'well' psychologically requires more than being free of distress or other mental problems. Researchers who have used this understanding of psychological well-being have attempted to examine factors that contribute to positive mental states as well. Research in this second area has largely been derived from two general perspectives: the hedonic approach, which focuses on happiness and defines psychological well-being in terms of pleasure attainment and pain avoidance; and the eudaimonic approach which focuses on meaning and self-realisation (Waterman, 2008). The eudaimonic perspective defines psychological well-being in terms of the degree to which a person experiences a purposeful and meaningful functioning life (Ryan & Deci, 2001) and interestingly recognises the importance of social relationships in this domain.

Despite considerable differences between the definitions of psychological well-being from within the three approaches (disorder, hedonic and eudaimonic), each have uniquely contributed to our overall understanding of the construct. All three approaches have also equally contributed to the development of prevention and treatment strategies to address psychological ill health but also how to enhance positive psychological well-being. Each approach has given rise to different research foci and bodies of knowledge that appear divergent, however, more recently these views are coming to be seen by some as complementary (Dodge, Daly, Huyton, & Sanders, 2012). Hence, recently developed measures of psychological well-being now generally reflect all three aspects of psychological well-being. Despite this recent move toward integration, there is ongoing debate about the best way to define psychological well-being (Dodge et al., 2012). In this section I will describe each of these perspectives in more detail, describing how each contributes to our understanding of psychological well-being before examining the commonly used measures to examine this construct.

Developed from the hedonic perspective, and arguably the most broadly understood and rigorously defined model of psychological well-being, is the subjective well-being model (Waterman, 2008). This consists of an affective component of the balance between positive and negative affect, together with a cognitive component of judgments about one's life satisfaction. In this way, subjective well-being is conceived as the maximization of life satisfaction and positive affect and the minimization of negative affect (Deiner, 1984; Kahneman, Diener, & Schwarz, 1999). The ability to be happy or contented has been one central criterion of mental health and psychological well-being adopted by a variety of researchers and theorists (e.g., Menninger, 1930; see Diener, 1984, and Jahoda, 1958 for reviews). Indeed, when the perceptions of happy people are compared with those who are relatively more distressed, the former are more likely to have positive self-concept or self-esteem (Beck, 1967; Kuiper & Derry, 1982), feel in control and more optimistic, and higher self-efficacy (Alloy & Ahrens, 1987; Abramson & Alloy, 1981). While the latter are more likely to have symptoms of depression and anxiety (Bech, Olsen, Kjoller, & Rasmussen, 2003). While each of these factors are known to be related to happiness, all are also similarly indicators of psychological well-being, suggesting some overlap between the two constructs. Overall the hedonic approach assumes that having more positive affect than negative affect

contributes to a perception that one's life is 'good'. The strength and stability of the association between subjective well-being and a whole range of health and well-being outcomes demonstrates that it is a powerful predictor of psychological well-being across the continuum. However, some theorists have argued that any one of these factors do not necessarily directly *cause* psychological well-being (Waterman, 2008).

For instance, the eudaimonic perspective equates psychological well-being with an ability to self-actualise and live in accordance with one's 'true self' (Waterman, 2008). This perspective sits within the humanistic tradition; although the theorists Rogers and Maslow define self-actualisation slightly differently, both equally emphasise the role of 'the self' in its manifestation. Carl Rogers (1951/2015, p. 149) defined self-actualisation as 'the process of maintaining a coherent sense of self', while Maslow (1943/1962) defined it as 'the growth of an individual toward fulfilment of the highest needs; those for meaning in life'. From the eudaimonic perspective, subjective happiness alone cannot be equated with well-being but, instead, requires achievement of the basic drive towards self-actualisation or self-determination (Ryan, Kuhl & Deci, 1997). More recently, within this perspective, self-determination theory (SDT) further specified the components of psychological well-being to include factors such as meaning in life, autonomy, competence, and inter-relatedness (Ryan & Deci, 2001). The inclusion and importance of the quality of an individual's social connections (interrelatedness) to their psychological well-being in this approach is particularly relevant to the current thesis.

More broadly, other theorists have argued that self-esteem (Rosenberg, 1965), the reflection a person's overall subjective emotional evaluation of his or her own worth (judgment of oneself as well as an attitude toward the self), is a sufficient indicator of the presence of psychological well-being. Ryff and Singer (1998) also proposed that psychological well-being should include more specified eudemonic components such as self-acceptance, purpose in life and personal growth. Finally, in the emerging *positive psychology* literature, which examines "the conditions and processes that contribute to the flourishing or optimal functioning of people, groups, and institutions" (Gable & Haidt, 2005, p.104), psychological well-being has been defined in terms of achieving "a life of fulfilment, happiness, and meaning" (Seligman, 2011, p.12). Within the resulting PERMA model, psychological well-being is considered to be comprised of five core

components: positive emotions (feeling good); engagement (being completely absorbed in activities); relationships (being authentically connected to others); meaning (purposeful existence) and achievement (a sense of accomplishment and success). This approach integrates both the hedonic and eudaimonic perspectives, includes a social component, broadens positive emotions to include more than simple happiness, and recognises psychological well-being as multifactorial.

To summarise, while we see a lack of consensus in the literature about how psychological well-being should be conceptualised and measured, an emerging consensus is that psychological well-being consists of cognitive, emotional and social components. Also, it is recognised that psychological well-being is not simply the presence or absence of these factors, but a product of the extent of the presence of all of these components and how they combine (Dodge et al., 2012). Combined with evidence from the psychopathology literature, we see that both an individual's psychological resources (i.e., cognitive and coping style, self-esteem) *and* exposure to external factors (i.e., stressors) are important predictors psychological well-being. In the following section, I briefly describe the literature that has examined the causes of psychological well-being. Based on the review of the definitions of psychological well-being provided above, I employ the broadest possible definition of psychological well-being, as a *relatively positive subjective judgement of one's life and own cognitive, emotional and social state* to enable inclusion of the largest possible extant literature in this review.

What Causes Psychological Well-being?

The causes of psychological well-being, like the definition, are complex, highly individualistic, and multi-factorial. Necessarily, basic and applied research has approached this subject from numerous theoretical viewpoints. A substantive amount of this work has affirmed the value of the biopsychosocial perspective for our understanding of the causes of psychological well-being. Empirical evidence now demonstrates biological, psychological and social processes interact with each other to affect psychological well-being. Combined with knowledge from behavioural (Jones, 1924; Skinner, 1953; Watson, 1924), cognitive (Beck, 1963) and attachment (Bowlby, 1969) theories (to name a few) we can now successfully predict psychological ill-health and understand many of the complex underlying processes from its results. It is now well accepted that psychological well-being is a product of the interaction between prior

experiences, current experiences and a cognitive, emotional and behavioural response to these experiences. As articulated in the stress-diathesis model (Coyne & Downey, 1991) there is a strong relationship between internal and external forces combining to influence psychological well-being. In this section, I will provide a brief overview of the biological, psychological and social factors that are demonstrated to predict psychological well-being and the explanations provided by the dominant theories to explain these processes.

It is important to recognise, however, that this review is by no means exhaustive, as I focus on the most significant and illustrative factors. In addition, I recognise that, of the factors described here, any one factor or combinations of these factors may be important for either negative or positive mental states, for different people and at different times. This reflects the complex interplay between environmental and person-centred factors that contribute to psychological well-being. It is also important to note that in some cases it is difficult to categorise factors neatly into either the biological, psychological or social categories. This is sometimes the product of a lack of clear definition of the categories and sometimes because the meaning attributed to the specific factors can be conceptually different depending on the causal sequence of their effect on psychological well-being (i.e., if the factor is predisposing, precipitating or perpetuating psychological well-being). It is also a product of an overlap or interdependence of certain factors within each category, represented schematically in Figure 1. Indeed, it is because the three categories overlap that, together, they are integral to our understanding of psychological well-being. With these caveats in mind, I will now explain each category in more detail before briefly summarising the evidence that identifies the biological, psychological and social factors that predict psychological well-being.
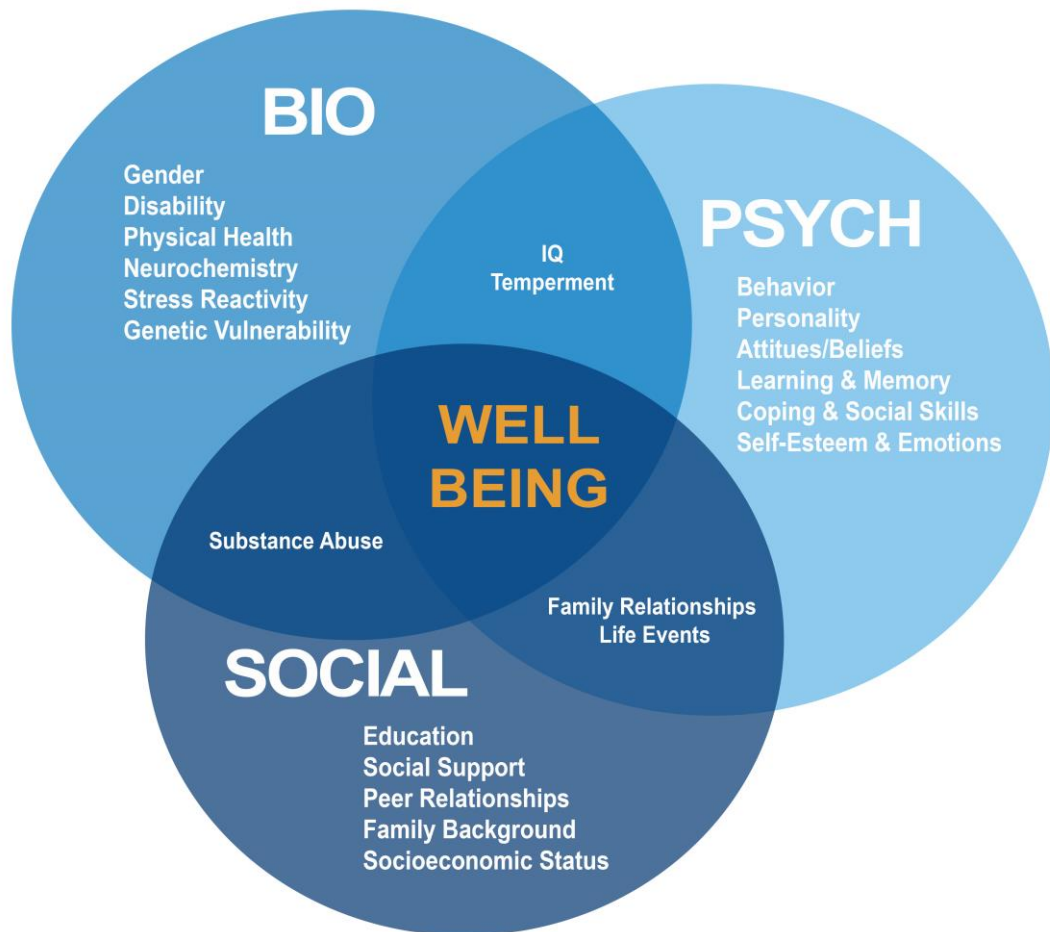
Figure 1. The Biopsychosocial Model of Psychological Well-being

Biological factors in Psychological Well-being

Biological factors in the biopsychosocial model refer to the aspects of human biology that influence general well-being. The biological factors most implicated in psychological well-being include brain structure and chemistry (neurotransmitters, hormones), genetics, and biological function (sleep, exercise, nutrition, health, immune response). Indeed, the effects of brain damage as a result of Traumatic Brain Injury (by way of damage inflicted by external forces) on psychological well-being is well documented (Bombardier, Fann, Temkin, Esselman, Barber, & Dikmen, 2010; Anderson, Krogstad, & Finset, 1999). Low serotonin and dopamine levels are strongly implicated in mood disorders (Nutt, 2008). The hormone cortisol has been shown to be essential to the regulation of the stress response in the body (Burke, Davis, Otte, &

Mohr, 2005) and has been linked to many physical and psychological effects, with implications for an individual's well-being (McEwen, 2008). More recent evidence suggests specific genes may be related to certain mental illnesses (Sullivan, Neale, & Kendler, 2000). This highlights the reciprocal relationship between psychological well-being and physical health or biological factors. Finally, we also know that sleep, exercise and nutrition play an important role in psychological well-being (Strohle, 2009; Pemberton, & Tyszkiewicz, 2016). Combined, this knowledge shows clearly that biological factors are fundamental to psychological well-being. Recent technological advances, such as Magnetic Resonance Imaging (MRI), continue to rapidly expand our understanding of the structures and functions of the brain and the biological underpinnings of psychological well-being. Most recently, the finding that the brain has the ability to change itself (i.e. neuroplasticity) (Doidge, 2010) and psychiatric medications are increasingly effective in treating Depression (Rush, Warden, Wisniewski, Fava, Trivedi, et al., 2009), has provided considerable hope that biological treatments can be employed to influence brain function, with direct and secondary effects on psychological well-being.

Psychological factors in Psychological Well-being

Psychological factors in the biopsychosocial model refer to people's internal cognitive and emotional factors, which inform their responses to and engagement with the external environment, and ultimately their psychological well-being. The psychological factors shown to be important to psychological well-being can be grouped into four categories: behavioural factors (i.e., conscious and un-conscious behaviour, coping skills and social skills); cognitive factors (i.e., perception, attitudes, beliefs, thinking, learning, memory); emotional factors (i.e., attachment, anxiety, depression), and self concept factors (i.e., personality, self-esteem). Many of these factors interact, alter across the lifespan and are shaped by environmental factors. As a result, researchers have found it difficult to show the exclusivity of each in the causation of psychological well-being (McLaren, 1998). Instead, the experience of psychological states, derived from the presence or absence of the above factors, are largely shown to mediate the impact between negative social factors and psychological well-being. By

way of example, of the complex relationship between psychological factors and psychological well-being, we find that the formation of a quality 'attachment' or emotional bond with a care giver has profound implications for the development of coping, cognitive, emotional and self-concept factors that predict psychological well-being later in life. There are many theories, most notably, attachment (Bowlby, 1969; Ainsworth, 1978), cognitive (Ellis, 1962; Beck, 1963), behavioural (Watson, 1924; Skinner, 1953) and social learning theory (Bandura, 1969; 1977b), that contribute to our understanding of the processes by which psychological factors impact on psychological well-being. Combined, this large body of work has contributed substantially to our current understanding of the psychological factors that contribute most to psychological well-being. While it is beyond the scope of this thesis to explain the central tenants of all the major psychological theories that describe how specific psychological processes impact psychological well-being, I focus here on those most relevant to the current work.

The psychological concept of *identity* is considered central to how individuals perceive themselves and hence is a psychological process involved in psychological well-being (Kyrios, Nelson, Ahern, Fuchs & Parnas, 2015). It is also strongly implicated in the conceptual framework employed in the current thesis, the social *identity* approach. Current conceptualisations of identity suggest it is a dynamic cognitive system that changes and responds to contextually situated, external and internal experiences, to provide a response to the question "who are you?" (McConnell, 2011; Vignoles, Schwartz & Luyckx, 2011). Identity is shown to be implicated in an array of cognitive processes associated with trauma (i.e. autobiographical memory, affect, appraisals, schema and other systems of meaning - for review see Brewin & Holmes, 2003; Dalgleish, 2004) which are significant predictors of psychological ill-health (Beck, 1967). However, the cognitive developmental, personality and social psychological literatures that examine the relationship between identity and trauma have been limited in focus to personality disorders and childhood trauma, and is insufficiently nuanced in terms of the various aspects of self or identity. This means there still exists limited understanding about the aspects of identity which universally influence psychological well-being. Recent investigations of the social or group related aspects of identity and their relationship to psychological well-being suggests the social

aspects of identity are important to consider. The conceptualisation of 'social identities' employed in this thesis will be more fully explained later, but first, let us review what is known about social factors more generally in the biopsychosocial model of psychological well-being.

Social factors in Psychological Well-being

Social factors in the biopsychosocial model of psychological well-being are generally considered all of the aspects in an individual's external environment that are relational or social. As such, 'social' factors are broadly defined to include, interpersonal relationships (e.g., relationships with family, spouse, friendships), group level factors (e.g., social networks) and even macro-cultural factors (e.g., culture, poverty, education). Environmental stressors, particularly those interpersonal (e.g., conflict, violence) or intergroup in nature (e.g., prejudice, ostracism), are demonstrated to be extremely deleterious to psychological well-being (Bolger, DeLongis, Kessler & Schilling, 1989; Cohen & Wills, 1985; Leary, 1990). This suggests 'social' factors are very important to psychological well-being. This is most clearly evidenced by work that shows early childhood trauma (via abuse or neglect by carers) (Herman, Perry, & van De Kolk, 1989) and exposure to major stressful life events (i.e. those which are predominantly relational) are the highest contributors to stress (Bolger, DeLongis, Kessler & Schilling, 1989), later development of psychopathology (Dube, Anda, Felitti, Edwards, Croft, 2002; Lacey, Kumari & Bartley, 2014; Johnson, Cohen, Brown, Smailes, & Bernstein, 1999; Wingenfeld et al., 2011), and even mortality (Holt-Lunstad, Smith, & Layton, 2010). Other societally determined factors, such as poverty or low socioeconomic status, also contribute significantly to the stressful events an individual is exposed to with serious implications for thier physical and emotional health, including mortality (WHO, 1977). Finally we also know that membership in certain social groups that experience prejudice (Cox, Abramson, Devine, & Hollon, 2012), discrimination (Schmitt, Branscombe, Postmes, & Garcia, 2014), or exclusion can also increase the risk of individuals developing psychopathology (Leary, 1990).

Importantly, however, work that has examined the impact of social factors on psychological well-being have also shown that a number of factors, including social

support, mediates this relationship. This shows that social factors can be beneficial to psychological well-being, and it is not the presence of stress or support alone that predicts psychological well-being. The emotional and cognitive (psychological) response a person has to social experiences appears to moderate the impact of social stressors on an individual's psychological well-being (DeLongis, Folkman, & Lazarus, 1988). People have also been shown to adapt emotionally post exposure to stressful major life events, so we also know that negative impacts are not inevitably (Lucas, 2007). Therefore, the independent contribution of social factors to psychological well-being above or beyond the biological or psychological remains unclear. Indeed, this view is reflected in the commonly used term 'psycho-social factors', which in its combination of these two aspects of the biopsychosocial model, suggests social and psychological factors are not independent. Despite this, the literature clearly demonstrates that 'social' factors *are* important within the biopsychosocial model of psychological well-being, and *they do* provide independent predictive power to predispose or protect an individual's psychological well-being. However, there may still be a need to employ a conceptual model which enables the examination of social factors in psychological well-being more effectively.

Overall, the review provided here shows there is a large body of research, from within a variety of perspectives and theoretical approaches, which has contributed to our understanding of the causes of psychological well-being. However, despite the value the biopsychosocial perspective has brought to our understanding of the causes of psychological well-being, the challenge still remains to understand the processes that connect the biological, psychological and social factors in the manifestation of psychological well-being (Suls & Rothman, 2004). While we now know the predictors of psychological well-being, there still exists a lack of clarity about how to conceptualise psychological well-being, and how the biological, psychological and social factors combine and influence each other to determine it. As a consequence, the measurement of psychological well-being, and hence the predictive utility of the empirical work, and the conceptual progress within the literature, appears disjointed and incomplete, particularly in relation to the work that has sought to understand the social factors and processes related to psychological well-being. This I will demonstrate in an in-depth review of the literature that has examined the role of social factors in

psychological well-being, in Chapter 3. But first, it is necessary to explain the most common measures of psychological well-being. The analysis contained in my review of the psychological well-being literature provided in the preceding sections, combined with the evaluation below, will then inform the choice of measures used in the current work.

Measuring Psychological Well-being

There are a wide range of measures used in the empirical research to examine psychological well-being. Some have been commonly adopted, others less so. The different conceptualisations of psychological well-being (described earlier in this chapter), are clearly reflected in how it has been operationalised. I will now describe briefly the most common scales used to measure psychological well-being that are derived from each of the perspectives (disorder, hedonic and eudaimonic). I will highlight the respective benefits and weaknesses of each of the measures and then explain the rationale for the choice of measures used in this thesis.

There are a large number of measures of psychological well-being that derive from the disorder perspective (considering psychological well-being to be another term for mental health). The majority of these are measures designed for utilisation with clinical populations and are too numerous to mention here. The Depression, Anxiety and Stress Scale (DASS-21) (Lovibond & Lovibond, 1995) and Kessler Psychological Distress Scale (K-10) (Kessler, Andrews, Colpe, Hiripi, Mroczek, et al., 2002) are two commonly used, brief, self-report screening measures of symptomatology of psychological ill health (specifically, Depression, Anxiety and Stress). Both have been extensively used in both clinical settings and large epidemiological studies (Kessler et al., 2002; Kessler, Green, Gruber, Sampson, Bromet, et al, 2010). These measures typically ask patients to rate the degree to which they have felt symptoms across a recent period (e.g., " I felt down and blue" never, sometimes, often or always) and hence are highly subjective. They are easy to administer, and are shown to be reliable predictors of psychological disorder or distress, or poor psychological well-being (Groth-Marnat, 2009; Kessler, et al., 2002; Lovibond & Lovibond, 1995).

Other methods of assessment of psychological well-being employed by clinicians include structured or semi-structured clinical interviews and clinical observation (Groth-Marnat, 2009). Each of these methods are less subjective as they require the employment of clinical judgment, typically by psychiatrists or clinical psychologists, to ensure diagnostic integrity. Hence, a significant limitation of the clinical measurement of psychopathology (psychological ill-health) is that it is often heavily resource contingent. Other measures of depression within the general population (non-clinical populations), and for use in large epidemiological studies, include: The General Health Questionnaire (GHQ-12) (Goldberg 1992), the Patient Health Questionnaire (PHQ-9) (Kroenke, Spitzer, & Williams, 2001), the Mental Health Index (MHI-5) (Ware & Sherbourne, 1992), World Health Organization Well-Being Index (WHO-5) (Bech, 2004) and the Centre for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977). One advantage of each of these measures is their ease of administration due to their short form. The ability of these measures to cover the entire dimension of psychological well-being - from the complete absence of well-being to the highest level of psychological well-being – is also particularly advantageous. Yet some measures assess depression alone, while others include factors with a particular social emphasis like 'emotional ties', which is a dimension of well-being measured in the MHI (Viet & Ware, 1983). The result of this is that it is particularly difficult to compare the results of studies that use different measures, and employ different operationalisations of the construct of psychological well-being.

The most commonly used measure of psychological well-being from the hedonic perspective is based on the concept of subjective wellbeing (Lucas, Diener & Suh, 1996), which is comprised of two components: affect (as measured by the Positive and Negative Affect Scale (PANAS) (Watson, Clark, & Tellegen, 1988) and satisfaction with life (measured by the scale of the same name (SWL) (Diener, Emmons, Larsen, & Griffin, 1985). Questions in these measures include: "To what degree to you currently feel happy? (or sad or frustrated)" or; "Overall, I am satisfied with my life"). Both these scales have been extensively validated (Andrews & Withey, 1976) and shown to measure the construct reliably and predict most indicators of health and well-being (Deiner & Chan, 2011) with minimal differences across cultures (Diener, Diener, & Diener, 2009).

The Psychological Well-being Scale (PWBS) (Ryff & Keyes, 1995) is another measure of positive well-being, but derived from the eudaimonic perspective. This scale includes six subscales to measure the six factors of this model, which include: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. The full version consists of 84 questions, the medium form, 54 questions, and while the short version is only 42 questions, it is far less statistically reliable than the longer version. In addition, some authors argue that more needs to be done to ascertain the predictive advantage of measuring each factor, above and beyond the value of shorter scales (Seifert, 2005). One other difficulty with this measure is that it does not include a measure of affect, a significant predictor/component of psychological well-being across the literature. The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) has recently been developed to address some of these concerns. Using positively worded items such as "I've been feeling optimistic about the future" and "I've been feeling loved", this measure focuses on positive thoughts and feelings and, as such, incorporates both the hedonic and eudaimonic aspects of psychological well-being. Both the PWBS and WEMWBS measure people's experience of social relationships, with a focus on positive emotions derived from connection with others. These scales therefore measure a limited range of what could be considered a 'social factor' and, beyond recognising social relationships are important to psychological well-being, there is limited theoretical rationale for the inclusion of these items. Finally, the PERMA profiler (Butler & Kern, 2015), a measure of psychological well-being adopted within the sub-discipline of 'positive psychology', measures five dimensions of well-being: positive emotion, engagement, relationships, meaning and accomplishment, along with negative emotion and health. Of particular relevance to the current thesis is the inclusion of social or relational aspects as essential components of psychological well-being in these later measures and the models they are derived from. However, as we can see there are numerous measures developed and each operationalise psychological well-being slightly differently. This is a limitation within the literature, as the large variety of ways in which psychological well-being is measured in the literature, limits comparability and cohesion. It is also important to note that in the measurement of psychological well-being, positive interpersonal *relationships* appear to be the only socially orientated factor considered and the full

range of social factors known to be related to psychological well-being (i.e. group or societal level factors) are not considered.

As we can see from the above review, a lack of consensus about how psychological well-being should be defined has had a number of implications for how it has been operationalised. As noted above, the dominant measures of psychological well-being are very different depending on the conceptual view from which they are developed. This arguably has made cohesion of the literature's findings difficult. As noted above, the more recently developed measures and approaches have attempted to incorporate the conceptual features of each of the disorder, eudaimonic and hedonic approaches. This supports the premise that all three perspectives may be important and psychological well-being should be measured as a multidimensional construct (Huppert and So, 2013). The current analysis of how psychological well-being has been operationalised to date has been used to inform the choice of measures employed in the current research. It is important to note that this led to the choice of a number of specific scales designed to assess multiple components of psychological well-being from all three perspectives.

In the following section I will briefly explain how the empirical findings of the large body of literature that has examined psychological well-being has been applied to the work of clinical psychologists. The treatment and prevention of psychological ill health and enhancement of human flourishing (psychological well-being) represents the application of the work reviewed above. The clinical psychology perspective and literature additionally provides some unique insights into the importance of social factors to psychological well-being, namely, the role of the therapeutic alliance as a significant relationship involved in improving psychological well-being. However, the following review of this literature also demonstrates that social factors have not been effectively conceptualised nor well integrated into current therapeutic clinical approaches to the assessment and treatment of psychopathology. This is important in terms of the current thesis, in which I will pose a conceptual model to address the gaps in our current understanding of the 'social' in psychological well-being and its treatment by clinical psychologists.

Application of the biopsychosocial model to the treatment of psychopathology

The knowledge that biological, psychological and social factors contribute to psychological distress and psychopathology has been applied in clinical psychological practice in many ways. Here I will provide a brief overview of how the biological, psychological and social factors have been generally considered in clinical assessment and treatment, largely from the Cognitive Behavioural Therapy (CBT) perspective. In doing so, I highlight the importance of considering each of these aspects in the assessment and treatment of psychological ill-health/psychopathology, and the strengths and deficits in how social factors have been conceptualised at each stage.

All three factors (biological, psychological and social) are considered essential to examine in the clinical assessment (Andrasik, Goodie, & Peterson, 2015). Psychiatrists and clinical psychologists obtain a thorough medical and psychiatric history of patients, including their developmental and family medical histories, to determine the influence of biological factors in the patient's presentation. The assessment also always includes a history of, or current experience of, social stressors and supports (Melchert, 2011). Often, from within the CBT framework, particular emphasis is placed on ascertaining the 'meaning' the patient has made about stressful events and the impact of these on the patient's feelings, thoughts and behaviours. Combined, such an assessment informs the clinician about the social and psychological factors most likely related to the patient's psychopathology or distress. As we can see, the patient's subjective reports are typically combined with the clinician's observations and, where possible, information from other sources (police, family members etc.), to determine which factors are most important (Groth-Marnat, 2009). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (2013) also contributes to this assessment through provision of current knowledge on prevalence, development, risk and prognostic factors, gender and cultural issues and comorbidities. Clinicians then match a patient's symptoms with criteria in the DSM-5 to form a diagnosis and, combined with their clinical judgement/experience, determine the social factors most likely to have or be contributing to the patient's symptoms. Both a strength and deficit of the assessment is its reliance on the subjective experience of the patient and the clinician's judgment to determine which of the multiple factors and their complex interplay may be manifestly impacting a patient's psychological well-being.

Following assessment, the biological, psychological and social factors implicated in the patient's diagnosis are targeted in treatment. Therapists develop a formulation about the biological, psychological and social factors that precipitated or are perpetuating the psychological distress or disorder. Once again, this is done by drawing upon knowledge of the disorder and prognostic factors derived from the literature and clinical experience. Depending on which biological, psychological and social factors are most commonly related to the distress or disorder (as determined by evidence and clinical judgement), these are targeted in therapy with the most appropriate evidence-based intervention (Australian Psychological Society, 2010).

Depending on the assessment and formulation, a variety and combination of interventions can be used in treatment. For example, treatment can often include medication, cognitive/behavioural therapy (Beck, et al., 1979), or other specific types of therapies or specific skills training. There are many interventions that can be employed to address the social factors implicated in the patient's presentation. I briefly explain the most important here. First, the clinical relationship itself could be considered a social intervention, by virtue of it being an important interpersonal relationship that influences treatment. The therapeutic alliance (the relationship between patient and therapist) is an aspect of treatment strongly associated with treatment response and outcomes (Martin, Garske, & Davis, 2000). The therapeutic alliance is often considered an essential component of establishing emotional safety for the patient (McWilliams, 2004) and it is this that is suggested to be most valuable to reducing symptomatology. The mechanisms underlying therapeutic alliances that provide benefits to patients have been examined in detail (Henry & Strupp, 1994) and appear to be important in most treatment approaches. Secondly, we find that specific therapy modalities incorporate interventions to address the social deficits or distress a patient may be experiencing. For example, Cognitive Behaviour Therapy (CBT) (Beck et al, 1979) commonly includes exposure and behavioural activation to address social factors such as social conflict, isolation or avoidance. Interpersonal Therapy (IPT) (Klerman & Weissman, 1994) addresses dysfunction in interpersonal relationships that are having a direct effect on psychological well-being through teaching social skills/ assertiveness. In both these examples the aim of the social intervention employed is to alter the psychological pathology/processes that mediate the effect of social stressors on psychological well-

being, or build skills that reduce the likelihood of social stressors occurring. However, we still do not know whether these psychological treatments are effective as a result of directly enhancing the social elements of patients' presentation or some other factor.

Finally, social factors are also considered in the prevention of remission and relapse. Social withdrawal is a common sign of the onset of psychopathology and assisting patients to recognise this and instead engage socially is shown to be effective in preventing deterioration in psychological well-being (Klerman & Weissman, 1994). Overall, we can see that at each stage of treatment, clinical psychologists consider social factors in the work they do to address psychological ill health. However, I have touched on the limitations in our knowledge that still exist in relation to assessment and treatment of social factors in clinical psychological practice. Finally, it is important to note that it is beyond the scope of this thesis to describe all the ways in which social factors are considered in relation to the opposite end of the psychological well-being continuum (i.e. to maintain or further enhance psychological well-being or human flourishing), however I contend that social factors are important to consider across the full range of psychological well-being, from psychological ill-health to flourishing.

Conclusion

In summary, despite some inconsistencies in how psychological well-being is defined and operationalised in the literature, a substantial amount is known about the biological (genetic, biochemical, etc.), psychological (mood, personality, behaviour, etc.), and social factors (cultural, familial, socioeconomic, etc.), which contribute to its enhancement or deficiency. We also know these three factors combine in an intricate, variable interaction to predict psychological well-being. Clinical psychologists consider all three aspects in the treatment of psychological ill-health and fostering of psychological well-being. Various measures of psychological well-being generally include items that measure the biological and psychological aspects, but few include items that measure the social aspects of psychological well-being. When they do, they do not account for the full range of social factors that are known to be related to psychological well-being. In addition, there appears to be considerable overlap between each of the three factors, so that each is not clearly differentiated or defined. In the

following chapter I will be looking more closely at the full range of social factors which have been shown to relate to psychological well-being and demonstrate how the absence of a clear theoretical framework that can be used to explain the full range of what is considered 'social' has limited the integration of this aspect of the biopsychosocial model of psychological well-being. The aim of the current thesis is to employ a new conceptual framework to assist realisation of the underlying processes by which social factors come to influence psychological well-being, in its most broadest sense.

In the following Chapter, I review in more depth how social factors have been defined in the literature and the evidence that demonstrates the relationship between social factors and psychological well-being. Because this review draws on literature from largely disparate and unintegrated conceptual approaches, I have imposed a structure with which to assist its integration. To this end, I first examine the evidence that demonstrates that interpersonal factors (such as the mere presence of others, significant relationships and the stress/support they represent) are important to psychological well-being. I then outline the major conceptual models that have been used to explain these effects, demonstrating their lack of integration. I then go on to review the work that has examined the social group or macro-societal level factors that predict psychological well-being, and demonstrate the need for a conceptual model that can integrate the knowledge from these disparate areas of the literature.

CHAPTER 3

Social component to psychological well-being

Chapter Overview

While the biological (genetic, biochemical, etc.) and psychological factors (mood, personality, behaviour, etc.) in the biopsychosocial model of psychological well-being have received considerable attention, the social factors (cultural, familial, socioeconomic, etc.) have been relatively less well integrated. Close examination of the literature reveals social factors are important to psychological well-being. However, the definition of what a 'social' factor is variable, and numerous terms are used to define it in the literature. This has meant the conceptualisation and operationalisation of social factors appears ad hoc and not fully integrated, which has limited our full understanding of their impact. Some work conceives social factors as simply an environmental stressor (Bolger, et al. 1989), others as a fundamental human need (Baumeister & Leary, 1995), others postulate social concepts associated with childhood development (Bowlby, 1969), and other's work simply recognises empirically that the presence of others can have a positive or negative impact on psychological well-being (e.g., Berscheid & Walster, 1969). While all of this work has successfully described which social factors are important to psychological well-being, the empirical literature has largely examined them in terms of *interpersonal* processes or sociological groups. This dichotomy, however, does not cover the full range of what could be considered 'social factors'. For example, it has not furthered our understanding of how the social is represented in the self and hence has not elucidated why social processes influence psychological well-being, particularly when other people are not physically present or are not well known to the individual.

In this chapter, I will firstly describe how social factors have traditionally been defined and conceptualised in the literature and the plethora of terms used to describe the different ways social factors have been operationalised. I will then briefly discuss

how this has led to difficulties integrating the findings, from the various approaches that have been employed, to examine social factors in psychological well-being. In doing so, I impose some structure to the literature in order to facilitate description by presenting the empirical evidence that exists within what I consider to be interpersonal, societal and group levels of analysis. Namely, the evidence that demonstrates the mere presence of another, interpersonal relationships, broad macro-cultural processes, and membership in sociological groups all influence psychological well-being. In my analysis of this literature, I highlight gaps in our knowledge that still exist, largely as a result of the lack of integration of the evidence from multiple levels of analysis that use disparate conceptual approaches. I then contend that a comprehensive conceptualisation of how social factors come to influence psychological well-being is required. I suggest further empirical work to assist our understanding of how social group membership comes to be psychologically represented by individuals, and hence become meaningful to the individual, would be beneficial. I also highlight how social factors can both be a mechanism for psychological ill health, but also a mechanism for psychological well-being. Finally, I posit the value of a new approach to examining the role of social factors on psychological well-being, that can address the issues I outline. Specifically, seeing oneself in terms of a *social group identity* and embodying the characteristics of that identity may affect psychological well-being.

Defining Social Factors

Social factors have been defined very broadly in the literature as anything external to the individual or in the 'social' environment (Engel, 1960). In his seminal paper "The Contribution of the Social Environment to Host Resistance", Cassel (1976) outlined the important social factors to health, which broadly included: interpersonal interactions with people known to the person (i.e. interpersonal relationships with a spouse, friends or one's doctor) or not known to the individual (i.e. community members); roles in life and social networks, or marginal status in society (i.e. social isolation, marginalised groups or positions within groups); and cultural norms and dominance hierarchies, social disorganization or rapid social change (Cassel, 1976). We thus find social factors have been examined broadly, at three different levels: interpersonal, group and societal level processes.

Some researchers have been concerned primarily with the impact of interpersonal stressors (Bolger, et al. 1989) and/or interpersonal social support (Cohen & Wills, 1985), or have simply reported differences in psychopathologies between groups (King, 1978; Strauss, 1989; Dohrenwend, Dohrenwend, Dodson & Shrout, 1984; Eron & Peterson, 1982). In all cases, the focus has been either on interpersonal processes, sociological level processes or related to sociological groups (i.e. people individuals actually have contact with or are demographically identified as, such as race, gender and socioeconomic status) (Kessler & McLeod, 1985). As a result, the literature reveals an abundance of terms that define and describe social factors and their processes. For example, social exclusion, social isolation, social networks (Fowler & Christakis, 2008), social stressors, social support (Cohen & Wills, 1985), belonging and connectedness (Baumeister & Leary, 1995), loneliness (Cacioppo, Hughes, Waite, Hawkley & Thisted, 2006), social capital (Putnam, 2001), and social engagement (Rook, 1990) have all been used when examining 'social factors' and their effects on psychological well-being.

There are also considerable differences in the operationalisation of the construct across the literature. For example, tools used to measure exposure to social stressors have ranged from life events checklists to clinical interviews (Brantley, Waggoner, Jones, & Rappaport, 1987; Cohen, Kessler, & Gordon, 1997; Brown & Harris, 1975). The work examining social capital (Putnam, 2001) and social connectedness have measured predictors as broad as access to phone and internet, actual contact with others and feelings of trust and loneliness. A variety of outcome measures are also employed including: feelings of social cohesion (sharing values); social support (perceived access to help) (Harpham, Grant & Thomas, 2002; Heitzmann & Kaplan, 1988) and emotional connections (social bonds and networks) (Kingley, 2006). This lack of consistency and cohesion in how social factors are examined in the literature creates some difficulty when it comes to integrating the literature.

Given that the original conceptualisation of the biopsychosocial model and that definition of social factors within it was particularly broad, the difficulties within the literature outlined here is not unsurprising. As Engel (1960, p.459), who first proposed the biopsychosocial model, stated:

"As the name suggests, its (the biopsychosocial models) intent is to provide a framework within which can be conceptualized and related as natural systems all the levels of organization pertinent to health and disease, from subatomic particles through molecules, cells, tissues, organs, organ systems, *the person, the family, the community, the culture, and ultimately the biosphere." . . .* with "processes at the cellular level subordinate to those at the tissue or organ level*, which in turn are subordinate to those at the person or community level"* (Italics added for emphasis).

In addition, Cassel (1976), stated "the most commonly accepted candidates (to negatively impact health and well-being) in the 'social environment'" are the "'psychosocial' factors generated by human interaction" (Cassel, 1976, p.108).

Certainly, the inclusion of the 'social' in the biopsychoosical model represents an important step forward in our understanding of health and well-being. As a consequence we also now have considerably more knowledge about the role of social factors in health and well-being (Carr, Umberson, DeLamater, & Ward, 2013). We also see strong recognition of the need to address social factors to enhance people's health and well-being in both public policy and clinical practice today (WHO, 2015). However, while employing the broadest definition of what is 'social' has possibly enabled inclusiveness, it appears to have limited our conceptual understanding of the underlying processes involved. If we consider social factors can include interactions between individuals and within groups, it could be that the underlying mechanisms in each situation may also be different. Perhaps then, considering the evidence from each level (i.e. familiar, family, community and culture/interpersonal, group and societal) as distinct may provide insights. For this reason I impose this structure in this review to examine possible conceptual differences that occur at each level. In doing so, I demonstrate that the middle level, community or group, is perhaps the most vaguely defined of each of the levels. I will also illustrate that while the literature recognises interpersonal relationships and networks, groups or society level factors are all important to psychological well-being, current models fail to fully account for the effects of social groups people belong to. More specifically, the affinity people feel towards social groups they are a member of, and the degree to which they embody the attributes of group members, which occur at this group level are particularly

noteworthy. Especially given the considerable evidence that feelings of *belonging* to social groups, are very important to well-being and may even be considered a fundamental human need (Baumeister & Leary, 1995). Indeed, the aim of the current thesis, was to employ a new conceptual model to address this theoretical and empirical gap, so we may better understand the processes by which social factors influence psychological well-being.

To deal with issues arising from the different conceptualisation of social factors across the literature (which appear to have arisen from the nature of its definition), and facilitate some structure to the following review, I have organised the literature presented here into three levels, the interpersonal, group or societal levels of analysis. However, it should be noted that the majority of the literature does focus on the interpersonal or is derived from sociological definitions of social factors (such as face to face interactions) and fails to capture group level elements to the same extent. I will now review this literature in the following sections, beginning first with describing the interpersonal level social factors and what is known about their relationship to psychological well-being.

Social factors and psychological wellbeing at different levels of analysis

Interpersonal level processes in psychological well-being

Mere Presence of Others

The social psychological literature clearly demonstrates that people's attitudes and behaviour (including those about the self) are shaped by external social forces and people adapt to social contexts (Marcus, 2005). Seminal social psychological studies identify specific social processes that influence people's attitudes (Sherif, 1935, 1937; Asch, 1956) and behaviours (Allport, 1920; Zajonc, 1965). Most of this early work recognised empirically that the mere presence of others (Allport, 1920), including groups of others (Ingham, Levinger, Graves, & Peckham, 1974; Mann, 1981; Widmeyer, Brawley, & Carron, 1985), had both positive and negative implications for human functioning. Overall, this work contributed to the understanding that social cognition (Frith & Blakemore, 2006) is important, that it often occur beyond conscious awareness (implicitly) (Greenwald & Banaji, 1995; Wyer, 2014) and has profound

implications for human function (Baron-Cohen, 2008; Couture, 2006), including psychological well-being (Bolger et al., 1989).

Evidence that social processes were directly related to psychological well-being was perhaps best illustrated by the observation that the mere presence of another directly influenced people's emotions. A number of studies show that experimentally manipulated anxiety may be eased by the mere presence of others (e.g., Schacter 1959; Wrightsman, 1960), and the presence of others increased laughter (Chapman, 1973). Indeed, theorists such as Berscheid and Walster (1969, p.20) postulated that "when people feel anxious, afraid, lonely or unsure of themselves they will find the mere presence of others rewarding". However, while it appeared people recognised the benefits of the presence of others, and choose to spend time with others when experiencing stress (Schachter, 1959), or anxiety (Wrightsman, 1960), whether this was because they were motivated to affiliate with others due to a desire to learn (about themselves, their skills, abilities, perceptions and attitudes) (Festinger, 1954), to reduce anxiety (Stroebe & Stroebe, 1997) or obtain information (Shaver & Klinnert, 1982) was still not clear. In addition, it was demonstrated that the presence of others could also be aversive or have negative implications for mood. For example, Yapko (2009) and Benazon and Coyne (2000) identified that living with someone with depression increases the likelihood of someone becoming depressed, suggesting negative mood could also be 'contagious'.

Further work that attempted to identify the mechanisms by which the presence of others impacted mood posited physiological arousal (Zajonc, 1965) and evaluative-cognitive mechanisms, such as evaluation apprehension and attention (Cottrell, Wack, Sekerak & Rittle, 1968), were responsible for the impact of the presence of others on mood. Evidence of the automacy of humans to engage in social comparison (whereby we compare our abilities and opinions to that of others) (Gilbert, Price, & Allan, 1995; Stapel & Suls, 2004) certainly revealed implicit social cognitive processes underlie peoples mutual influence of each other's emotions. Some theorists explained the arousal effects of the presence of others in terms of sociobiological processes, which are "the result of the survival benefit of social relationships and collective action, which promoted genetic selection of organisms who find social contact and relationships rewarding and the lack of such contact and relatedness aversive." (Bovard, 1985, p.

103). A meta-analysis of over 65 studies comparing the ability of social stress appraisal or manipulated emotional state to explain cortisol or immune responses, found social cognitive processes (i.e. appraisals, rumination, worry and social threat) were more important than global mood states in predicting physiological stress responses (Denson, Spanovic & Miller, 2009). This suggests that social cognitive processes, as opposed to arousal alone, better explains how social factors impact psychological well-being.

Despite the evidence provided by this early work, the explanations arising from them provided little clarity around the underlying processes by which psychological well-being is influenced by social factors across multiple levels of analysis (i.e., interpersonal, group and societal levels). It simply showed that interpersonal factors can either represent a stressor or support, and recognised that interpersonal interactions and relationships were important to psychological well-being. Specifically, close interpersonal relationships are a significant stressor, above and beyond other types of life stressors, and interpersonal social support is a significant mediator of the stress - psychological well-being relationship (Bolger et al., 1989). In the following section, I will review the social stressor and support literatures and demonstrate that, while this work has shown a strong causal link between the type, quality and closeness of the interpersonal relationship and psychological well-being, the theoretical explanations of how and why affiliation with others or interpersonal bonds impact psychological well-being have been limited.

Social Stressors

Research which has explored the relationship between social factors and psychological well-being has revealed 'social stressors' and, specifically, interpersonal stressors, are important predictors of an individual's psychological well-being (Bolger et al., 1989). Evidence of a direct relationship between the absence of interpersonal interactions and poor psychological well-being led researchers to suggest interpersonal contact was essential to human development (Lilly, 1956; Spitz, 1945; Grassian, 1983). Observations that people who experience long periods of being alone or isolated were more likely to experience symptoms of mental illness (Lilly, 1956); infants raised in institutions (who had received food and shelter but little to no social contact) were more likely to die or experience lifelong mental disability (Spitz, 1945); and prisoners kept in solitary confinement experienced delirious effects on their psychological well-being (for

review see Grassian, 1983) certainly indicated just this. Together, these findings led theorists to posit that interpersonal contact was essential to psychological well-being (for review see Baumiester, 1991). However, there also appeared to be something special about significant relationships and/or interpersonal bonds, and those formed early in life (Bowlby, 1969). Many forms of interpersonal relationships, including parent/carer-child relationships (Bowlby, 1969), spousal relationships (Rothberg & Jones, 1987; Bloom, White & Asher, 1979), friendships (Lowenthal & Haven, 1969), and even the therapeutic alliance (Rogers, 1959), were also examined. Overall, this work demonstrated a strong causal link between the type, quality and closeness of interpersonal relationships and psychological well-being (Durkheim, 1897/1951; Lepore, 1992). Close bonds with another individual seemed to afford individuals with emotional, cognitive and material resources that buffered them from the negative effects of stress.

The parent/carer-child relationship, as a person's first experience of an interpersonal relationship, appeared to be particularly important in terms of an individual's long-term psychological well-being outcomes. Certainly, studies that showed childhood exposure to mistreatment by others can result in serious physical and psychological ill health later in life (Dube et al., 2002; Lacey et al., 2014; Johnson et al., 1999) demonstrated this link. However, as far back as Freud (1924) the importance of the parent/carer-child relationship to lifelong psychological well-being was theorised. Empirical work testing the processes associated with childhood development outlined in Bowlby's (1969) Attachment Theory, demonstrated that the parent/carer-child relationship was instrumental in the development of internal working models of interpersonal relationships that formed the basis of the quality of relationships experienced later in life. A large body of work has since shown that attachment insecurity predicts poorer psychological well-being or psychopathology later in life (for review see Mikulincer & Shaver, 2007), including psychological disorders associated with disintegrated self (i.e. personality disorders) (Johnson et al., 1999). Indeed, evidence that early disruption of the parent/carer-child attachment can both cause immediate and intense distress (Bowlby, 1980; Gilbert, 1992) and lasting neurological changes (Teicher, 2000) reveals the lasting impact this relationship can have on an individual's psychological well-being. Thus, Attachment Theory (Bowlby, 1969)

represents one conceptual model that has successfully explained how interpersonal relationships, if only parent/carer-child relationships, can come to influence and psychological well-being.

The stress process 'hypothesis' (Coyne & Downey, 1991) or model, while more commonly used to explain the relationship between interpersonal relationships and psychological well-being, is less conceptually robust. The empirical work derived from this approach despite being largely descriptive, clearly demonstrated that a range of *stressful* interpersonal relationships (beyond the parent/carer-child relationship), and/or mere interpersonal interactions, could also be detrimental to psychological well-being. For instance, interpersonal conflict was identified to be one of the most common forms of stress in people's lives, predicting up to 80% of daily fluctuation in mood (Bolger et al., 1989). While chronic stress appeared to have a stronger relationship to psychological ill-health than single episodes (Ilfeld, 1977; Birley & Brown, 1970; Brown and Birley, 1968; Paykel, 1985), conflict with individuals with whom individuals spend considerable amounts of time, such as parent/carer or one's spouse, were more likely to be strongly related to psychological ill-health than other relationships (Bolger et al. 1989). Indeed, episodes of depression were found to be most often triggered by a specific negative event in the social sphere (Tennant, 2002) and most commonly these related to spousal conflict and serious threat to or loss of a relationship (death of a loved one or divorce) (Weissman, 1987; Coyne, 1987). This suggests, in general, interpersonal 'bonds' are important to psychological well-being. Indeed, psychological ill health is shown to increase substantially following exposure to interpersonal stressors (Andrews, Tennant, Hewson, & Vaillant, 1978; Shrout, 1989) and people are more prone to being depressed if living with someone (often a spouse) who has previously also been depressed (Coyne, Kessler, Tal, Turnbull, Wortman, & Greden, 1987). The pervasive and profound impact of spousal conflict on health and well-being more broadly is perhaps best demonstrated in a study where laboratory induced conflict between married couples was found to have a strong association with lowered immune functioning (Kiecolt-Glaser, Malarkey, Chee, Newton, et al., 1993).

However, spousal and parental relationships are clearly not the only domain in which interpersonal conflicts occur. In fact, stress resulting from school or workplace bullying (Bizumic, Reynolds, Turner & Bromhead, 2009; Turner, Reynolds, Lee,

Subasic & Bromhead, 2014; van Dick & Haslam, 2012; Paykel, 1994), rape or physical assault (Koss, 1990; Elder, Caspi & Downey, 1986), for instance, can occur between complete strangers and can have equally negative effects on an individual's psychological well-being (Acierno et al., 2002). This suggests that it may not simply be social stressors with people with whom we have a close bond or relationship that are important to psychological well-being, but that proximity and regularity of contact of the other person, or perceptions of importance are not the only mechanisms for influence. Other work suggested that relationships with others, more broadly, were just as important, and the work that examined this provided greater insight into why social factors are important to psychological well-being.

In his seminal work examining the social causes of suicide, Durkheim (1897/1952) identified that rates of suicide were greater, not only for individuals without close relationships, but also for individuals who were members of specific types of social groups (religious) or forms of society (i.e. those in social, economic or political upheaval). This led him to postulate that a sense of social disconnection, or feeling as if one does not belong, may be just as important to psychological well-being as close relationships. The relationship between an individual's internal judgements in the social factors-psychological well-being relationship is further supported by evidence that the actual size of one's social networks (number of interpersonal relationships) matters less to psychological well-being outcomes than the individual's subjective experience of aloneness (Cacioppo, Hawkley & Thisted, 2010). Obviously, these perspectives do not negate the value of the tangible social support social networks provide, or suggest that meaningful close interpersonal relationships are not important. They simply suggest moderating factors in the relationship between social stressors and psychological well-being which have not yet been fully elucidated.

Further support for the importance of psychological representations to the social factors - psychological well-being relationship comes from evidence that 'perceived social isolation' is a good longitudinal predictor of depression symptoms, even after controlling for key candidate variables (demographic characteristics, personality, physical health, stress and a number of indicators of social-relationship quality) (Cacioppo et al., 2010). In addition, subjective loneliness is shown to be associated with personality disorders and psychoses (DeNiro, 1995; Neeleman, Power, 1994; Richman,

Sokolove, 1992), suicide (Goldsmith, Pellmar, Kleinman & Bunney, 2002) and increased depressive symptoms (Cacioppo et al., 2006; Segrin, 1999; Wei, Russell, Zakalik, 2005; Heikkinen & Kauppinen, 2004). This would suggest the psychological representation of 'others' is at least as equally important as face-to-face contact or meaningful bonds with others. In fact, some theorists suggest that the extent to which interpersonal relationships and social networks satisfy a person's subjective need for social connection (Victor, Scambler & Bond, 2009) has a substantial role in their impact on psychological well-being (Cruwys et al., 2016).

We also find social isolation and loneliness are associated with *perceived* deficits in access to social support. This is another 'social factor' which has been shown to predict psychological well-being (Broadhead et al., 1983; Leavy, 1983; Mitchell, Billings & Moos, 1982). In the following section, I will describe the literature that has examined the relationship between social support and psychological well-being, before touching on explanations of how social support is thought to mediate the stress-psychological well-being relationship. This evidence suggests that psychological representations of the social world are just as important to psychological well-being as actual contact/interaction.

Social Support

Numerous studies have shown that interpersonal relationships with spouses, friends, and family members who comprise people's social networks afford individuals with emotional (self-esteem, ventilation) (Cobb, 1976; Weiss & Willis, 1985), informational (advice, appraisal, cognitive guidance), and instrumental (material or tangible resource provision) *support* and this is highly beneficial to their physical health and well-being (Broadhead et al., 1983; Leavy, 1983; Mitchell, Billings & Moos, 1982). Several prospective epidemiological studies have shown that individuals who have limited social support (perceived or actual) have higher mortality rates (Berkman & Syme, 1979; Blazer, 1982; House, Robbins & Metzner, 1982). Similarly, numerous prospective studies using mental health outcome measures have shown a positive relationship between social support and mental health (Aneshensel & Frerichs, 1982; Billings & Moos, 1981; Henderson, Byrne & Duncan-Jones, 1981; Holahan & Moos, 1981; Turner, 1981/1983; Williams, Ware, & Donald, 1981).

Cohen and Wills (1985) suggest the direct beneficial effect of social support occurs through large social networks providing regular positive experiences, stable, socially rewarded roles in the community and meaningful existence. In so far as these factors provide the individual with positive feelings, a sense of predictability and stability in one's life situation and recognition of self-worth, there will be psychological well-being benefits. Social support or integration into social networks can also help individuals to avoid negative experiences (e.g., economic or legal problems) that otherwise would increase stress and hence a higher probability of psychological or physical disorder (Aslund, Larm, Starrin, & Nilsson, 2014). In addition, social support can buffer individuals from the effects of stress via either intervening between the stressful event (or expectation of that event) and a stress reaction or by attenuating or preventing a stress appraisal response (Cohen & Wills, 1985). The perception that others can, or likely will, provide necessary material support appears to assist the individual to alter perceptions of the threat itself and their ability to cope with its effects. This in turn appears to ameliorate the impact of the stressor (Cohen & Wills, 1985) and foster positive well-being.

Evidence that certain types of support that interpersonal relationships and groups provide are more beneficial depending on the stressor and whether the support is actually provided or simply perceived to be available (i.e. social support/social networks) (Billings & Moos, 1981), suggests that psychological processes also mediate the relationship between social support and psychological well-being. However, as the design and measurement of social support and social networks often fails to account for specific attributes of the social environments or group related factors, this is a significant limitation to this work. For example, a study into depression in immigrant Mexican women found income predicted depression more than social network and emotional support (Vega, Kolody, Valle, & Weir, 1991). However, the majority of work in this area does not include broader social demographic indicators in their study designs. There-fore we have limited understanding overall about the importance of some social factors to psychological well-being over others. So, while this literature has increased our understanding of the ways social support benefits psychological well-being, we still do not understand the full nature of their effects. In addition, some researchers stress the importance of sociological variables (e.g., demographic factors

such as a person's age, gender and social class; see Thoits, 1995, for a review), while others emphasise the psychological or individual-level variables (e.g., the personality of support recipients; Delongis & Holtzman, 2005). This has meant that, beyond identifying social support as important to psychological well-being, the ability of this work to comprehensively explain how and why social factors are implicated in psychological well-being is limited. In the following section, I will review the literature which has identified that more broad societal level social factors also have a role in psychological well-being.

<p style="text-align:center">Societal level processes in psychological well-being</p>

There is considerable work that demonstrates broader societal level processes can also be important for people's psychological well-being. Drawing upon a range of work, from a variety of perspectives, this literature reveals that social structures that limit social integration and connections, or the size and diversity of an individual's social network, can have negative implications for psychological well-being (Barnett & Gotlib, 1988; Berkman & Glass, 2000; Cohen & Wills, 1995; Helliwell & Barrington-Leigh, 2012; Kawachi & Berkman, 2001; Pinquart & Sorenson, 2000). In addition, other features of a society, such as culture (i.e. individualistic/collective) (Kitayama, Markus & Matsumoto, 1995), and social dynamics (i.e. cohesion, economic or political change) (Durkheim, 1897/1952) affect cognition (i.e. sense of self, attitudes and perceptions) and behaviours (i.e. suicide, help seeking, employment) directly related to psychological well-being. In this section I will review the literature that has examined the societal level processes and their relationship to psychological well-being. I will consider how some theorists have attempted to explain why these effects occur and demonstrate the lack of clarity these explanations have afforded the attempts of the current thesis to examine the role of social factors in psychological well-being.

Social structures are clearly stratified by age, race, sex and socioeconomic status, and organised in terms of residential, communication, work organisations and larger political and economic structures. The social inequalities afforded by the structures within societies have been extensively demonstrated and are strongly related to physical and psychological well-being (WHO, 2007). The relationship between social

structures and psychological well-being has also been demonstrated to be related to the prevention of an individual's ability to integrate in or be connected to society (Hughes & Demo, 1989; Hall & Wellman, 1985), rather than limitation of access to material resources alone. This view is consistent with the literature reviewed in the previous section, that demonstrated social affiliation, relationships and connection to others is very important to people's psychological well-being, and when people experience social exclusion this can be aversive (Baumeister & Tice, 1990). When we consider the same processes occur at the societal level, we also find that being included in social life and being able to develop or maintain large and diverse social networks is also important to psychological well-being (Berkman & Glass, 2000).

Durkheim's (1897/1952) examination of the societal level processes related to suicide, is perhaps the most comprehensive explanation of *how* societal level process influence psychological well-being. In this seminal work, Durkheim (1897/1952) proposes that through social controls and norms weakening, or deregulation of societal values, beliefs and norms (Turner & Noh, 1983), a society's capacity for integration is weakened and this results in poorer psychological well-being of the population. Certainly, we find considerable evidence that whether people are employed, married, attend church, belong to organisations or have frequent contact with friends and relatives are all determined, in part, by social structural conditions (Berkman, Glass, Brisette, & Seeman, 2000). We also know that individuals who are particularly prone to not being able to access and engage in society, for physical, health or financial reasons (i.e. older people, unemployed, low socio-economic) are also generally less socially integrated (Hughes & Gove, 1981) and have poorer psychological well-being as a consequence (Kawachi & Berkman, 2001). However, most of the studies that examine these effects simply identify those people and situations that increase vulnerability to poorer psychological outcomes (Cherlin, 1981; House, 1987; House, Landis, & Umberson, 1988; Sidani et al., 2016; Weitzmann, 1985) and provide limited conceptual explanation of how and why societal level processes influence psychological well-being.

The social networks literature examines the structure and composition of social networks, at the individual level, and the level of networks of networks. The studies in this area have also demonstrated that the structure of the network determines an

individual's behaviour, attitudes and emotional responses (Berkman et al., 2000). This is further evidence that societal level processes, particularly those related to social connection and integration, are important for psychological well-being. However, while a large number of studies consistently demonstrate that a lack of social ties or social networks predicts mortality (Cohen, 1988; House, Landis & Umberson, 1988; Berkman, 1985), because these studies include everything from close interpersonal relationships, to membership in community associations in their measures of social networks, the results from this empirical work fails to elucidate the underlying process responsible. As previously mentioned, one way in which social networks may influence psychological well-being is through the provision of social support, but in fact, this account fails to consider the fact that social networks exist within larger social and cultural contexts, which also shape them.

Despite the strength of the evidence that certain demographic factors (i.e. gender, age, marital status and socioeconomic status) can predict psychological well-being outcomes (Diener, Sandvik & Larsen, 1985) (i.e. being obtained from large prospective and longitudinal study designs), once again we find this work is purely descriptive. While socioeconomic status is shown to be strongly associated with biopsychosocial functioning (Anderson & Armstead, 1995; Williams, Yu, Jackson & Anderson, 1997), the underlying mechanism responsible is still unexplained. For example, socioeconomic status is strongly associated with unemployment and poverty. These factors also limit an individual's ability to engage in social life and social networks, but are also demonstrated to increase stress (Kopp, Szedmak, & Skrabski, 1998; O'Brien, 1986). Therefore, whether the negative impacts of low socio-economic status on psychological well-being occur as a result of features of societal structures, social support, social integration, social networks, or interpersonal stressors is still not clear. Of course, this does not negate the fact that economic or social inequalities inherent in the cultural and political structures of society may create, enforce and perpetuate disadvantage, which can negatively impact psychological well-being (SEKN, 2008). Certainly, these factors do directly influence people's ability to access health care and dietary requirements for good health (Marmot, 2005). They also influence psychological well-being through increasing stress as a result of limiting social support, including access to resources (i.e. money, food) or as a result of exposure to negative

intergroup interactions, such as prejudice and discrimination (Williams, Yu, Jackson & Anderson, 1997). This simply demonstrates the complexity of the interactions between the many variables involved and this work still does not provide one cohesive theoretical framework to explain how societal level processes influence psychological well-being.

Culture, broadly defined as the characteristics, activities and interests of a people (Elliot, 2010), is another societal level process that has a demonstrated relationship to psychological well-being. Studies that have identified differences between the psychological well-being of individualistic and collectivist cultures, have provided some clues about the mechanisms by which societal factors impact psychological well-being. This derives from evidence that differences between cultures, in terms of how the self is viewed, is related to psychological well-being (Collins, 1998). For instance, the independent view of self (dominant in western cultures), which acknowledges relationships with others, but the self as independent, was shown to be less beneficial to psychological well-being compared to the interdependent view of self (dominant in collectivist cultures) where the self is dependent on and deeply embedded with others (Markus & Kitayama, 1991; Scott, Ciarrochi, & Deane, 2004; Kitayama, Markus, & Matsumoto, 1995; Matsumoto, 1999). Theorists have suggested that the collectivist view of the self impacts thinking styles and self-esteem by shifting attention to relationships and context (i.e. away from the self), and this results in enhancement or protection of psychological well-being when connections with culture and family are maintained (Collins, 1998) and by engendering a 'sense of belonging' (Nisbett & Maduda, 2003). While this work by no means suggests that the psychological well-being of individuals within collectivists cultures will always better than those within individualist cultures, it does highlight the importance of social norms, transmitted via culture, to psychological well-being.

As we can see from this review, there is considerable evidence that societal level processes, such as societal structures, social networks, socio-political and cultural factors are related to psychological well-being. However, what is also evident is that there is no one cohesive theoretical framework provided by this literature to explain how all these very diverse social processes come to influence psychological well-being.

Social group processes in psychological well-being

The broad social psychological literature has also demonstrated a relationship between social group memberships and psychological well-being. The focus of this work has largely centered on the effects that being a member of a stigmatised group (e.g., defined on the basis of race, gender, religion, mental health etc.), and being exposed to negative treatment by another group (i.e. discrimination), has on psychological well-being. Considerable empirical work demonstrates that individuals who are members of these groups are at higher risk of developing psychological ill-health (Eccleston, 2008), while other work suggest this is not always the case (Bachman et al., 2011). This demonstrates that while social group membership is an important predictor of psychological well-being, there may be other moderating variables that determine when group membership leads to psychological ill-health. Elucidating the underlying processes that lead to social group memberships becoming either beneficial or detrimental to psychological well-being is what I want to build upon and understand further in this thesis.

Being a member of a stigmatised group (Major & Eccleston, 2005; Eccleston, 2008) is demonstrated to have deleterious impacts on an individual's psychological well-being. Many stigmatised group members report having lower self-esteem than their non-stigmatised counterparts (Major, Quinton & McCoy, 2002), and members of these groups are also much more likely to experience discrimination, which produces high levels of stress (Meyer, 2013; Williams, Spenser & Jackson, 1999). However, once again it is unclear what the mechanisms underlying these effects are. For example, we also know that exposure to discrimination or stigmatisation alone does not result in poorer psychological well-being, nor does simply being a member of these groups mean that psychological well-being is always negatively impacted. This suggests that the individual's interpretation of the event (as stressful) also mediates this relationship (Branscombe, Schmitt & Harvey, 1999). Other mediating factors include the adequacy of an individual's coping strategies, the chronicity of the social stressor, or if it results in material in-equalities (Schmitt & Jackson, 1996; Williams, et al., 1999).

Prejudice and discrimination, as a consequence of membership in a certain social group, has also been demonstrated to be a unique form of stress that produces *chronic* feelings of helplessness, hopelessness and frustration, depression, resentment,

distrust or paranoia (Fernando, 1999; Peterson, Maier, & Seligman, 1993; Seligman, 1975; Tew, 2005). It is thought this is due to the chronic nature of this form of stress; however, beyond identifying that stress occurs as a result of individuals being part of a specific social group, this work does not consider the 'group' as a special concept in itself. For instance, discrimination or prejudice could be considered to be an interpersonal process, just one uniquely derived from membership in a certain group (Poteat, Mereish, Birkett, 2015). As a result, the literature that has examined the negative implications of stigmatisation and discrimination to psychological well-being has, in itself, not contributed to explaining how groups come to be psychologically represented and hence matter to an individual and their psychological well-being. Indeed, understanding the social cognitive processes underlying group membership is likely to provide greater clarity about when and how social group memberships will impact psychological well-being.

There is also evidence that other social processes that result from being a member of a specific group (i.e. stereotyping, ostracism and intergroup conflict) can cause negative outcomes for an individuals psychological well-being (Branscombe, et al., 1999, Schmitt & Jackson, 1996; Williams, et al., 1999). This indicates that considering what is unique about group level processes may be important. Of course, it is also important to note there is evidence that group membership can have both positive and negative implications for psychological well-being. In fact, we know social group membership may for instance furnish many *benefits* to psychological well-being (see previous review on social support). We know that people like to 'belong' to groups, and when they feel as if they 'belong' they feel better (Baumeister & Leary, 1995; Sherif & Cantril, 1947). Indeed, evidence that a sense of belonging has the strongest relationship with physical and mental health (Berry & Welsh, 2010), compared to other aspects of social group membership, such as access to social support and the material resources groups provide, has led researchers to ask, what it is about 'groups' that is special. As the review provided here demonstrates, how others treat an individual, based on group membership, can have important implications for psychological well-being. However two important caveats to this are relevant to the current thesis. First, when individuals belong to groups that are perceived positively by themselves or others, their psychological well-being may not be as adversely effected, or actually enhanced.

Secondly, the impact of social group membership on psychological well-being could differ depending on broader social contextual factors. This leads me to the central argument of this thesis - that coming to see oneself in terms of a social group identity and embodying the attributes of group members will be positively related to psychological well-being. It is only when the social becomes psychologically represented that it becomes meaningful to the individual and it is this process that leads to social factors becoming important to psychological well-being. I will consider these processes more fully in the subsequent chapters.

Conclusion

As I have established in this review, a considerable body of empirical work has demonstrated social factors are important to psychological well-being. Some work demonstrates, 1) the primacy of social factors in psychological well-being, 2) social interactions and networks can be a source of stress or support, 3) societal political and structural advantage can afford benefits to individuals' psychological well-being, and 4) membership in certain social groups can have direct implications for psychological well-being. While our understanding of the social factors in the biopsychosocial model of psychological well-being has been derived from multiple levels of analysis (interpersonal, societal and groups), it is apparent that this literature is not well integrated. Considerable gaps in our conceptualisation of social factors in the biopsychosocial model of psychological well-being still exist. For example, societal level factors could also be considered in terms of group membership, exposure to discrimination could be considered an interpersonal factor, and cultural factors can directly relate to individual processes. This emphasises the point, that while I have imposed a structure (interpersonal, societal and group level processes) to provide some order to this examination of the literature, there is no clear distinction or rationale by which we are able to differentiate the processes occurring at these different levels of analysis. As a result, the literature appears ad hoc, often overlaps, and ultimately it is difficult to discern the influencing factors.

Indeed, it may be that individual level processes (meaning making about the events and self concept), interpersonal processes (i.e. conflict or unjust exclusion by another person) and society wide processes (i.e. systems which prevent social mobility and engagement) operate similarly and require integration to fully explain how social

factors influence psychological well-being. As I have demonstrated in this review, the social processes at the interpersonal, societal and group levels of analysis each contribute to psychological well-being and there is benefit that could be obtained from integrating them in one cohesive framework. While the separate description of each level of processes provided in this review was necessary to provide some structure to the analysis, we can now see that a cohesive conceptual theoretical approach, which integrates all three levels of the analysis of social factors in psychological well-being, is required.

There are a number of broad lessons derived from the literature that has examined the role of social factors in the biopsychosocial model of psychological well-being. The first is that the 'social' is important, but this extends beyond face-to-face interactions and interpersonal relationships and, therefore, there is a need to examine the social component as a mental representation. Second, social factors can be both a stressor or support for psychological well-being. Third, social group membership influences psychological well-being, but the underlying mechanisms are unclear.

The question for psychologists thus remains: What are the psychological processes involved in the relationship between social factors and psychological well-being? To address the observed gaps in the literature this review reveals, we require a cohesive theoretical account, which focuses on subjective representation of self with others beyond simply the interpersonal. This is something within which researchers working in the social identity approach, which comprises social identity theory (Tajfel & Turner, 1979) and self-categorisation theory (Turner et al., 1987), have been making headway. Although these theories were originally developed to explain intergroup relations, they have recently been applied to the health and well-being sphere. The aim of the current thesis is to work within this burgeoning area of the literature to examine the social aspects of the biopsychosocial model and their role in psychological well-being. In the following chapter I will describe this current social psychological theory, which focuses on people's subjective representations of self with others. I will focus primarily on two key concepts within this theory that are likely to be valuable in understanding how an individual's place within the social world is related to psychological well-being.

CHAPTER 4

Social Model to explain Social Processes in Psychological Well-being

Chapter Overview

This chapter introduces a specific model of social processes that is applied in the current thesis to examine the role of social factors in psychological well-being. The social identity approach (SIA) (Tajfel & Turner, 1979; Turner et al, 1987) is a conceptual approach, comprised of social identity theory (SIT) (Tajfel & Turner, 1979) and self-categorisation theory (SCT) (Turner et al., 1987) that is broadly a theory of psychological group membership and seeks to describe the affinity of self with others. This approach has recently been applied to the examination of social factors in health and well-being, in the Social Cure literature (see Jetten, Haslam, & Haslam, 2012). In this chapter I will review key concepts from within the the SIA, and empirical findings derived from within it, that demonstrate this theoretical framework can be used to explain how social factors influence, more specifically, psychological well-being. I will focus precisely on two key concepts, social identification and prototypicality, and how they relate to psychological well-being. This will inform the key predictions I make in the current thesis. I will then review the literature that has demonstrated social identity processes can be used to predict psychological well-being.

First, it is necessary to elucidate the underpinnings of the SIA. To this end, I will begin by providing a background on the social psychological analysis of groups from which social identity theory was derived. I will then introduce the relevant concepts of the SIA, which are essential for the current analysis, specifically the two social identity concepts of social identification and prototypicality. I review how these concepts have been measured in the past and what we know about their relationship to psychological well-being. This will then assist me to make a series of new predictions, which I will examine in this thesis.

The social psychological analysis of groups

Social psychology has historically been interested in the effect that social groups and memberships in social groups have on human psychology and behaviour. Originally, the focus of this literature considered the effects of sociological groups (the actual collections of individuals who have contact with each other, know each other or who are materially dependent on each other) (for review see Hogg, 1993). This work focused on interdependence between individuals and has explored interpersonal attraction/liking, interpersonal similarities and group relations (Lewin, 1948). Among other work, Sherif and Sherif's (1953; 1964) seminal 'boys' camp' studies recognised that face to face groups have a material reality, which involves interdependence and role status relationships, and that these processes can vary dynamically. These studies also recognised that groups have psychological validity, with group members 'identifying' with the group, and adopting group goals as personal goals, with profound implications for intergroup relations. However, because these studies were conducted in situ, the results were necessarily complex or confounded by many other variables, hence the generalisability of the conclusions were limited. Thus, concepts identified in these early social psychological studies were brought into the lab in the 1970's to examine them under greater control and with more precision. Tajfel (1972) in particular, starting with base line categorisation, found group based behaviours occurred in the absence of prior contact or any form of interdependency. This began the idea more formally that groups could be psychological represented in the minds of individuals and people's subjective representations of groups were very important. From this work, social identity theory (Tajfel and Turner, 1979) and then self-categorisation theory (Turner et al., 1987) were developed and formed what is now considered the Social Identity Approach (SIA). This approach considered groups in terms of psychological representations and assumed that these representations are a normal part of cognitive functioning. It also considered that people have self-representations of themselves as both unique individuals, but also as group members.

While social identity theory (Tajfel & Turner, 1979) was originally used to explore intergroup relations and prejudice (Tajfel, 1969), this was expanded in the late 1980's by self-categorisation theory (Turner et al., 1987; Turner, Oakes, Haslam, & McGarty, 1994) to include an analysis of the self-concept as defined by social context.

As foreshadowed, this allowed researchers to examine a variety of phenomena beyond just prejudice and discrimination (Tajfel, 1969), including topics as diverse as leadership, communication, motivation and collective action (e.g., see Haslam, Ellemers, Reicher, Reynolds, & Schmitt, 2010; van Knippenberg & Hogg, 2003) and more recently, health and well-being (Haslam, Jetten, Postmes, & Haslam, 2009; Jetten, Haslam & Haslam, 2012). This unique theoretical framework afforded researchers the ability to examine, (1) the impact of large social groups (such as nations and communities) where individuals do not necessarily have contact or interdependence with fellow group members, (2) how social factors are psychologically represented in individuals' minds, and (3) perhaps most important to the current thesis, how these processes impact self-concept. I will now review some of the key tenants of this approach that are specifically related to how and why social factors contribute to psychological well-being. I will specifically focus on the concepts of social identification and prototypicality, which are two SIA processes, which I propose, could be used to explain the differential effects of social factors on psychological well-being. Social identification is related to the social affinity people feel towards groups they are a member of and prototypicality is the individual's subjective judgment of the degree to which they embody, or are representative of, the characteristics of the group. In the following section, I will first outline the key concepts of the SIA before reviewing the literature from this approach which suggests these processes could be used to explain how social factors influence psychological well-being.

Key tenants of the social identity approach

The SIA is social-psychological in origin, and is first and foremost a theory of social relationships grounded in a social model of the self (Turner et al., 1987). A key theoretical premise of the SIA is that people's sense of self is comprised of both personal and social identities. On the one hand, this means that people define and understand themselves in terms of their *personal* identity (i.e. understanding of themselves as unique individuals) – seeing themselves in terms of interests, attitudes and behaviours that differ in important ways from those of other individuals. On the other hand, people also define and understand themselves in terms of one or more *social* identities (i.e. understanding of themselves as members of one social category or

another, Tajfel & Turner, 1986) – seeing themselves in terms of interests, attitudes and behaviours aligned with those of other members of the groups to which they belong (i.e. in-groups) but as different from those of groups to which they do not belong (out-groups; Turner & Oakes, 1986).

This distinction between personal and social identities was explicated more formally in self-categorization theory (Turner et al., 1987). Here, people's self-concepts are assumed to take the form of *self-categorizations*, cognitive representations of the self as the same, identical, or interchangeable with some other class of stimuli (typically, other people) (Turner et al., 1987). When self is categorized with no one else, then people are said to be adopting a personal self-categorization, akin to a personal identity; when self is categorized with others, however, people are said to be adopting social self-categorizations, akin to social identities. In this way, self-categorisation represents then the *psychological* basis for people's actual group memberships, psychological connection to others, and how individuals see themselves (Turner et al. 1987).

A key idea of this perspective is that, to the extent that a given group membership is contextually salient or provides an ongoing basis for social identification, then it will provide a basis for social *self-categorisation* whereby, the group becomes "self". In this way, social group membership forms a *social identity*, originally defined as "the individual's knowledge that he [or she] belongs to certain social groups together with some emotional and value significance to him [or her] of this group membership'' (Tajfel, 1972, p. 31). Within this perspective self-categorisation processes are the means by which groups come to have a fundamental bearing on a person's understanding of who they are and as a result, how they think, feel and behave. Social identities therefore come to restructure a person's self-concept, affecting the way individuals perceive themselves and their place in the world. A fundamental assumption of self-categorisation theory is that:

"self-perception or self-definition is not simply the activation of preformed, already stored self-concepts (whose meaning is defined prior to their activation), but are derived by a flexible, constructive process of judgment and meaningful inference in which varying self-categories are created to fit the perceiver's relationship to social reality. In this way self-concepts represent the individual in terms of his or her changing

social contextual properties" (Turner, Oakes, Haslam & McGarty, 1994, p. 13).

Content of social categories

When people's psychological representations of themselves as a psychological group member take the form of social self-categorisations, it is because they are similar to the social category content. Social category content defines who is a group member and who is not, based on consensually shared understandings of the physical attributes and attitudes, beliefs, ideologies and norms of behaviour of group members. The category content then also becomes important to how the individual perceives himself or herself. As an individual self-categorises, based on the category content, this then colours their social perceptions and evaluations of themselves and others in line with *content* of the current self-categorisation (Turner et al, 1987, 1994). I do not focus on social category *content* in the empirical work of this thesis, we know it is essential to self-categorisation (Turner, et al. 1987, 1994) and is highly influential to group members' attitudes and behaviour (Oakes, Turner & Haslam, 1991; Turner et al. 1987). However, I will here review the evidence that demonstrates social category content is consensually and actively psychologically construed. In doing so, I highlight the unique perspective of the SIA and the value this brings to the current thesis.

The SIA acknowledges that people bring views about others and views about group members to their understandings of what the group identity is (Hogg, 2001). It then argues that individual's make social categorisation judgements about who is a group member, or not, based upon both prior expectations and on-line active interpretation of the actual reality confronting them (Turner et al. 1987, 1994). These processes are thought to allow people to extract information and understanding about their own and others' places in the social world from both the expected and perceived content of a social category (Ellemers, Spears & Doosje, 2000). Importantly for the current thesis, this shared understanding about the social category is shown to determine judgments of oneself, feelings of connection to others (Cruwys, et al., 2015) and experiences of stress or support (Haslam, Reicher & Levine, 2012), which are all related to psychological well-being.

Evidence that the content of a social category is consensually and actively psychologically construed was demonstrated by work from the SIA on stereotypes

(Haslam, Oakes, Reynolds & Turner, 1999), schisms (Sani & Reicher, 1998), in-group projection (Wenzel, Mummendey, Weber & Waldzus, 2003), and more recently work examining high identifiers' deviation from group norms (Crane & Platow, 2010; Packer, 2008). Indeed, Oakes, Turner and Haslam (1991) demonstrated that the degree to which individuals match stereotypical traits is used as a basis for categorisation. However from the SIA stereotypes are considered not simply as negative biases held about out-group members (Katz & Braly, 1933), but instead stereotypes are more broadly the understanding or impression an individual holds of a social group (Tajfel, 1969). Therefore, from the SIA, self-stereotypes (Haslam et al., 1999) and in-group stereotypes (Turner, 1982) are simply the *content* of the social category. Haslam et al. (1995) demonstrated that in-group stereotype content was also dependent on comparative context. This showed that the formation of category content, also occurs through active construal by individuals in the moment. The social identity view of category content in this way was also demonstrated by Sani and Reicher's (1998) study examining schisms. This study demonstrated that as group members' ideologies changed, the content or meaning of the group also changed. Wenzel, Mummendy and Waldzus's (2008) work on in-group projection also demonstrated that social category content was projected onto broader categories re-defining what it is to be a group member. Sibley & Barlow's (2009) examination of implicit associations of race with national identities also demonstrated that inclusion of individual targets in the group is determined by the perceiver's definition of the category. Finally, recent work by Crane and Platow (2010) and Packer (2008) on deviation from group norms demonstrated that high and low identifying group members differed in their understanding of what it means to be 'us' and, when these definitions differ in terms of norms of behaviour, it influenced behaviour accordingly. Combined, this work demonstrated that social category content defines the features, attitudes, beliefs and behaviours of a group member (i.e. what it means to be a group member) and is consensually and actively psychologically construed and influences one's view of oneself and others (Tajfel, 1969).

Self-categorisation theory (SCT) (Turner et al., 1987) articulates precisely how social category content determines individuals' perceptions of self and others and categorisation of oneself as a member of a social group. We see that considerable work

now supports this understanding, demonstrating that the *content* of a social group is consensually and actively psychologically construed and defines group membership (Crane & Platow, 2010; Oakes, Turner, Haslam, 1991; Packer, 2008; Sani & Reicher, 1998; Sibley & Barlow, 2009; Wenzel, Mummendey, Weber & Waldzus, 2003). SCT also describes how the interaction of perceiver readiness (an individual's motives, goals, and needs) and fit (categorisation judgement) determines categorisation of self and others into social categories. I will now briefly describe these two self-categorisation processes to elucidate how they may be related to the central thesis of the current work - that the psychological representation of social group membership is implicated in psychological well-being outcomes. Specifically, that the largely beneficial effects of social identification on psychological well-being is also influenced by the degree to which one sees themselves as embodying the attributes of a social group member, as defined by the category content.

Self-categorisation

Self-categorisation theory describes the process of self categorisation as a function of an interaction between the "readiness" of a perceiver to use a particular self-category (sometimes referred to as relative accessibility) and the "fit" between category specifications and the stimulus reality to be represented (Oakes, 1987; Turner et al., 1987). These self-categorisation processes can be used to explain how the content of a social category determines judgements of who is 'in' and who is 'out' of the group (including oneself), based on the category content.

Relative accessibility reflects a person's past experience, present expectations and current motives, values, goals and needs (Oakes, 1987; Turner et al., 1987). It reflects the active selectivity of the perceiver in being ready to use categories that are central, relevant, useful or likely to be confirmed by the evidence of reality (i.e., Gurin & Markus, 1988). It has further been suggested that categorisations with high chronic accessibility (i.e. sex, race) are more likely to become salient in a person's perception compared to categorisations with low chronic accessibility (i.e., Blanz, 1999; van Knippenberg, van Twuyver & Pepels, 1994). Therefore, perceiver readiness refers to how an individual's past experiences, present expectations, motives, goals and needs affect the relevance of social stimuli within a particular situation. It affects the degree to which the perceiver will entertain certain possibilities, invoke certain knowledge, or

value certain traits and characteristics (Turner, 1985; Turner et al., 1987). Perceiver readiness directs self-categorisation based on the degree to which the individual perceives their own characteristics 'fit' with the category specifications determined by experience and context combined.

The second aspect that determines self-categorisation is 'fit', which comprises two components: comparative fit and normative fit. Comparative fit is based on the principle of meta-contrast (Turner, 1985; Turner et al., 1987), which states that:

"a collection of stimuli is more likely to be categorized as an entity to the degree that the average differences perceived between them are less than the average differences perceived between them and the remaining stimuli which comprise the frame of reference" (Turner et al., 1987, p. 47).

Stated in terms of the meta-contrast ratio, the meta-contrast principle defines 'fit' in terms of the emergence of a focal category against a contrasting background. For example, apples and oranges were shown to be perceived as 'fitting-in' the 'fruit' category to differing degrees in a situation where meat and vegetables were present, suggesting the contrasting background influenced the perceived fit of the target in the with category (Turner et al., 1994). Comparative fit in this way shapes the salience of a dichotomous classification. For example, any collection of people will tend to be categorized into distinct groups to the degree that intragroup differences are perceived as smaller on average than intergroup differences within the relevant comparative context (meta-contrast ratio).

On the other hand, normative fit refers to the content aspect of the match between category specifications and the instances being represented. In order to categorize a group of people as old as opposed to young, they must not only differ (in attitudes, actions, etc.) from young people more than from each other (comparative fit), but must also do so in a direction consistent with the content dimensions of comparison and the normative beliefs (e.g., old people should prefer bowls to snowboarding). In this way normative fit becomes highly influential to the substantive social meaning of the social category.

The concepts of comparative and normative fit in the social categorisation process have been empirically tested in some studies (Oakes, Turner, & Haslam, 1991; van

Knippenberg et al., 1994). Oakes et al. (1991), for example, demonstrated that the categorisation of others and self was more pronounced when comparative fit was coupled with normative fit. Van Knippenberg et al. (1994) also found categorisation, based on values and attitudes (normative fit), only occurred when differences between groups (comparative fit) were highlighted (but also only when in terms of important values and attitudes).

Overall, the systematic interaction between perceiver readiness and fit is understood to be a key component of the categorisation process (Blanz, 1999; Oakes, 1987). Importantly, this implies that social categorisation is inherently comparative and intrinsically variable, fluid and context dependent (Turner et al., 1987; Turner et al., 1994). Thus, while social categorisation is often based upon pre-existing assumptions, beliefs and values about a group, it is also reliant on the fit process of matching targets' attributes to these aspects and so also is contextually dependent. This is a perspective that dovetails with other recent theorising about the structure of the self (McConnell, 2011), which proposes that a person's self-concept is formed from the context-dependent activation of self-aspects derived from the nature of the attributes made salient in any given context.

As a result, the SIA contends social and self-categorisation is a product of accessibly and fit judgements. This process of cognitive categorisation provides the basis for prototypical representation of the social category. The prototype of a social category is defined as the *cognitive representation of the best and most typical or representative social group member* in contrast to other groups (Turner et al., 1987). The prototype, therefore, informs us about what is typical of group membership (see Turner, 1991) not only in terms of attitude or behaviour, but also <u>who</u> is a typical group member. Prototypicality judgements (of self or others) are determined by the meta-contrast ratio and are a reflection of comparative fit processes, where meaningfully related similarities within a group and differences between one group and other groups (meta-contrast principle), determine the prototype. In this way, social group prototypes characterise a group and its members, not simply in terms of typicality (e.g., an average), but also in relation to differences with other groups. This then forms the basis of individuals' perceptions of their own degree of *prototypicality,* the centrality of their

position within the group, or the degree to which they are 'in' the group, relative to other individuals (Hogg, 2001).

Another important product of the categorisation process is that individuals come to see themselves in terms of social self-categorisations (i.e. social identities). *Social identification* with a group represents the degree to which a salient social self-category is contextually valued, important and central to one's current understanding of oneself (e.g., Cameron, 2004; Kawasawa, 1991; Leach et al., 2008; Postmes, Haslam & Lise, 2013). As a direct derivation from Tajfel's (1972) original definition of social identity, social identification represents the degree of psychological connection, both cognitively and emotionally, with a salient social self-category. As such, the degree to which one socially identifies as a group member indicates the degree to which the group is important to the individual (Tajfel & Turner, 1979).

I will now examine these two specific social identity constructs, social identification and prototypicality, and their relationship to psychological well-being in more depth in the remaining sections of this chapter. In doing so, I reveal how using the integrated conceptual framework the SIA provides may assist us to explain how social factors come to influence psychological well-being. Specifically, I will seek to provide an explanation of how social factors may come to be psychologically represented within individuals. In the following section I review the literature which has already demonstrated the relationship between social identification and psychological well-being. I then consider prototypicality and how this concept may assist us to explain when social identification may come to influence psychological well-being in a range of ways. In doing so, I demonstrate that the SIA provides a parsimonious theoretical perspective from which we may better explain the social cognitive processes that determine how social factors influence psychological well-being.

<center>Social Identification and Psychological Well-being</center>

Recent evidence using the Social Identity Approach (SIA) to examining health and well-being (see Jetten, et al., 2012 for review), has shown social group membership is an important contributor to an individual's psychological well-being. The total number of groups an individual belongs to (Brook, Garcia & Fleming, 2008; Iyer,

Jetten, Tsivrikos, Postmes & Haslam, 2009; Cruwys, Dingle, Haslam, Haslam, Jetten & Morton, 2013), the degree to which an individual *identifies as a group member* (Gleibs Haslam, Haslam & Jones, 2011), and compatibility of groups during life transitions (Iyer, Jetten, & Tsivrikos, 2008), have all been shown to positively predict higher levels of psychological well-being and less psychological distress. For instance, possessing multiple group memberships has been shown to protect against the development of depression, improve the likelihood of recovery from depression, and prevent depression relapse by 24% (Cruwys et. al., 2013). These effects have been shown across contexts and the lifespan, in high school (Turner et al., 2014), university (Cameron, 1999; Iyer et al. 2008) or aged care populations (Gleibs et al, 2011). In two separate studies, Gleibs et al. (2011) and Haslam, Haslam and Jetten, et al. (2010) found that aged care residents' depression levels (as measured by the Hospital Anxiety and Depression Scale; Zigmond & Snaith, 1983) reduced as their *identification* as a member of their social clubs increased. Employees with higher levels of identification with their profession or organization report feeling: socially supported and experiencing less stress than those with lower levels of identification (Haslam, Jetten, O'Brien & Jacobs, 2004; Haslam, O'Brien, Jetten, Vormedal, & Penna, 2005); more comfortable, satisfied, engaged and productive at work (Knight, Haslam & Haslam, 2010); less depressed (Cruwys, 2013; Sani, Herrera, Wakefield, Boroch & Gulyas, 2012); and experience reduced physiological strain (Platow et al., 2007). Social identification is also shown to have positive implications for self-esteem (Bettencourt & Dorr, 1997; Haslam & Reicher, 2006; Ellemers, Kortekaas, & Ouwerkerk, 1999; Phinney, Cantu, & Kurtz, 1997; Wann & Branscombe, 1990) and self-efficacy (Dingle, Brander, Ballantyne & Baker, 2013). In a large representative community sample, social identification predicted life satisfaction and general well-being (Helliwell & Barrington-Leigh, 2010). Taken together we can see considerable evidence that social identification directly enhances psychological well-being across a wide range of indicators. We also see that this includes both reducing the likelihood of developing psychological ill health, but also protecting or enhancing positive psychological well-being. This work has informed the 'Social Cure' approach to understanding the processes by which social factors come to influence health and well-being (Jetten et al., 2012).

Social identification has additionally been shown to increase factors known to

foster psychological well-being including perceptions of social support (Haslam et al., 2012; Gleibs et al., 2011; Morton, Wright, Peters, Reynolds & Haslam, 2012), resilience (Jones & Jetten, 2011), and is an important moderator of the impact of stress on well-being (Haslam, et al., 2005). It also appears to buffer individuals from the negative impact of a range of stressors, including illness (Haslam, Jetten, & Waghorn, 2009), memory loss (Jetten, Haslam, Pugliese, Tonks & Haslam, 2010), confrontations (Haslam & Reicher, 2006), and discrimination (Brandscombe, Schmitt, & Harvey, 1999) and prejudice (McCoy & Mavor, 2003) with enduring effects. For example, the number of social identities that people have prior to stroke is a good predictor of their recovery and well-being six months following the event (Halsam et al., 2008); and acquiring new group memberships protects individuals from developing PTSD following trauma (Jones, Williams, Jetten, Haslam, et al., 2012).

Life satisfaction has even been shown to increase as social identification as a member of a mental health support or therapy groups increases (Camp, Finlay & Lyons, 2002; Ruble, Willis & McLaughlin Crabtree, 2008; Hall & Cheston, 2002; Jacoby, Snape & Baker, 2005; Shadden & Agan, 2004), despite the stigma often associated with inclusion in these groups. In addition, increased identification with therapy groups has been found to reduce symptoms associated with mental illness itself including: maladaptive thinking styles (Cruwys, Haslam, Dingle, Haslam & Jetten, 2014), and negative cognitive processes associated with chronic mental health conditions (Haslam, Jetten, O'Brien and Jacobs, 2004; Branscombe & Miron, 2004; Haslam, 2004; Reicher & Haslam, 2006; McGarty, Yzerbyt & Spears, 2002). Social identification has also been shown to modify certain personality traits (Reynolds et al., 2012) and interpersonal attitudes (Jetten & Iyer, 2010) which are sometimes associated with increased vulnerability to mental illness. The positive effect of social identification on psychological well-being (with stigmatised groups and in terms of clinical indicators) also appears to occur above and beyond social contact afforded by membership in such groups. For example, Sani et al. (2012) found a strong negative relationship between social identification and depression, but only a weak-moderate relationship between social contact (frequency of contact) and depression.

There is, however, also evidence that social identification can in some instances have negative implications for psychological well-being. For instance, if the normative

content of groups that individuals identify with is considered negatively (i.e. 'bad' or undesirable), the groups relative position in the larger social context is considered negatively (i.e. peripheral or low status groups) (Branscombe et al., 1999), or an individual's status within the group itself is considered undesirable, the social identification with the social group may, in fact, be detrimental to psychological well-being (Haslam et al., 2012). Indeed, the evidence presented in the previous chapter demonstrates that being a member of a stigmatised group can clearly have profound negatively impact psychological well-being (Eccleston, 2008). Many stigmatised group members report having lower self esteem than their non-stigmatised counterparts (Major et al., 2002). Some treatment groups for psychological disorders have also been shown to be harmful and impede recovery (Crabtree, Haslam, Postmes & Haslam, 2010; Finfgeld, 2000; Helgeson, Cohen, Schultz & Yasko, 2000). Certainly identification with a social group that incorporates damaging norms and practices (i.e. anti-social behaviour) has the potential to increase the vulnerability of members of those groups to develop poorer psychological well-being. One example would be being part of a peer group that engages in drug taking or self harm. In this instance, the shared normative behaviour on which the group is based is itself deleterious to psychological well-being (Schofield, Pattison, Hill & Borland, 2003). But we also find that when simply a negative aspect of the social identity is salient, group membership can have negative implications for well-being. This is perhaps best demonstrated by a study in which St Claire and He (2009) who found that when participants (all over 60) were simply made to think of themselves as "elderly" they were more likely to describe themselves as having hearing problems and needing a hearing aid, compared to those who were asked to think of themselves as "young". This suggests the normative content of the group identity directly influences thoughts, feelings and perception (including perception of physical symptoms) and when the group is seen as negative, this results in negative perceptions of the self for individuals who identify as a member of that group. This relationship between the nature of the salient group membership and psychological well-being was also demonstrated empirically in a study conducted by Levine and Reicher (1996). In this study, female sports science students were found to be more likely to be distressed by a facial rash than a knee injury when defining themselves as a women, rather than sports student, but the inverse was true when defining themselves as sports science student. While these studies demonstrate the power of negative social

group content in perceptions of physical symptoms rather than psychological well-being, the strong relationship between physical health and psychological health suggest negative social category content is also related to negative well-being outcomes.

As I illustrate above, there is a strong relationship between social identification and psychological well-being and it seems it is not always the case that social identification will afford psychological benefits. This is most clearly highlighted in the Social Curse literature, which has demonstrated that identification as a member of some groups can result in poorer well-being outcomes (Kellezi & Reicher, 2012; Stevenson, McNamara & Muldoon, 2014). Indeed, we find the relationship between social identification and well-being is complex. For instance, identifying with a stigmatised group appears to buffer individuals from the stress associated with discrimination in some instances (Branscombe, Ellemers, Spears & Doosje, 1999; Molero, Fuster, Jetten & Moriano, 2011; Outten, Schmitt, Garcia & Branscombe, 2009; Schmit, Spears & Branscombe, 2003; Mossakowski, 2003) and in others decreases psychological well-being (Eccleston, 2008; Major & Eccleston, 2005; Major, Quinton & McCoy, 2002). When it is difficult for individuals to leave the group (i.e. social mobility), or if the group represents a source of meaning or support to group members (Link, 1987) then the impact of identification as a group member appears to be particularly deleterious to psychological well-being. However, it has also been demonstrated that one strategy individuals may use to maintain a positive sense of well-being in the face of negative implications of group membership (Jackson, Sullivan, Harnish, & Hodge, 1996) is increased identification. It appears that one way individuals actively enhance their psychological well-being is increasing their identification with the stigmatised group (Branscombe et al, 1999). Taken together, this literature suggests that if we consider social identification alone, it does not assist us to predict when group membership will be more beneficial, less beneficial or even detrimental to psychological well-being. Clearly there still exists a significant gap in our knowledge about the social identification – psychological well-being relationship. It is the aim of this thesis to address, in part, this gap in the literature, particularly in relation to the positive end of the psychology well-being continuum. In the next section of this chapter I will briefly consider how social identification is operationalised in the literature before considering

another social identity concept, prototypicality, and the role it might play in the relationship between social identification and psychological well-being.

Measuring Social Identification

Since the conception of the SIA, researchers working within this approach have developed numerous scales to measure social identification (Cameron, 2004; Doosje, Ellemers & Spears, 1995; Ellemers et al., 1999; Leach et al., 2008). Typically, these measures have employed items such as, *"I see myself as a member of (group name)";* or when measured as a single item: *"I identify as a member of (group name)"* (Postmes, Haslam, & Jans, 2013). These items measure the core conceptual component of social identification - the degree to which individuals *see themselves* as a member of a social group.. More recently developed scales have attempted to address concerns that some have articulated about treating social identification solely in terms of a "general connection to an in-group" as lacking specificity. These scales have instead operationalised social identification in terms of multiple components (for reviews, see Ashmore, Deaux, & McLaughlin-Volpe, 2004; Sellers, Smith, Shelton, Rowley & Chavous, 1998). Some distinguish specific components of in-group identification in terms of distinctive cognitive, affective and self-stereotyping components (Cameron, 2004; Ellemers et al., 1999; Jackson, 2002; Luhtanen & Crocker, 1992; Sellers, Rowley, Chavous, Shelton & Smith, 1997). Work examining these separate aspects of social identification suggest, each may operate in different ways, to differentially effect a range of outcomes derived from group membership. This is pertinent to the work of the current thesis in which I examine the independent contribution of another self-categorisation concept, prototypicality. In the following sections I will review how prototypicality has been conceptualised in the literature and how it has been operationalised in the past. I will then examine the ways in which it may be related to psychological well-being and make a case for its consideration in explaining the observed relationship between social group memberships and psychological well-being. In the end, I propose that it may not simply be whether people identify or not with a social group that impacts psychological well-being, but the position of people within the group may also matter. It is this later view that is captured in the concept of prototypicality.

Prototypicality

In this section I will consider the concept of prototypicality, how it has been defined, examined and operationalised in the literature, and how it might be related to the current examination of social factors relationships with psychological well-being. First, it is important to note that within the literature there still appears to be a lack of clarity around the definition of this concept, even within the self-categorisation/social identity framework. In light of this, I begin here with an analysis of the original conceptualisation of prototypicality and then review the empirical work that has examined this social identity concept. I will then review other ways prototypicality has been measured and studied, before I end this section with my own conceptualisation of prototypicality that I employ in the current thesis. Finally, I review a small number of studies that demonstrate prototypicality is related to psychological well-being before providing explanation of its relevance to the current thesis's examination of social factors relationship with psychological well-being.

Originally, Turner et al. (1987) defined *prototypicality* as the degree to which an individual group member *embodies* contextually relevant attributes of a salient self-category *relative to* a salient out-group social category (which includes attitudes or behaviours) (see also McGarty, 1999). This definition built upon Campbell's (1958) work on 'entitativity' which suggested psychological group formation is based on individuals perceiving themselves as *similar* to other in-group members. Within the SIA, prototypicality judgements (of self or others) are determined by the *meta-contrast ratio* and derived from calculation of the difference between a target's position in a social category, relative to the position of other targets in the same category and the most relevant out-group social category (Hogg, 2001). The relative position of the target in a social category (prototypicality) is thus a calculation of the mean difference between a target's typicality compared to a typical in-group member, divided by the mean difference between a targets typicality compared to a typical out-group member. The degree to which an individual is considered prototypical exists on a gradient, where some group members are more prototypical than others (Hogg, 2001). Prototypicality therefore represents a specific position of the individual in the group, on the basis of their similarity to the other in-group members, and difference from out-group members. However, because a 'prototypical' position in a group varies as a function of the

comparative context it can thus shift away from a typical or average position (e.g., Haslam & Turner, 1995; Hopkins, Regan & Abell, 1997). Hence, being prototypical of an in-group is not simply synonymous with being an average or typical member of a group. Indeed, van Knippenberg (2011) makes the point that in most cases, prototypicality does not capture the average or typical, but rather the perceived *ideal* position in a group (see also van Knippenberg & van Knippenberg, 2005). Similar to social identification, prototypicality, is also shown to be context dependent (Haslam, Oakes, McGarty, Turner & Onorato, 1995) and can be represented on a gradient, from fully prototypical to not at all prototypical. However, while the two concepts of prototypicality and social identification are clearly related they differ considerably in their conceptualisation, with social identification representing the degree to which an individual feels an *affiliation* towards a social group, while prototypicality, represents the degree to which an individual *represents* or *embodies* the characteristics of the group members.

Prototypicality has been shown to be consensually shared by group members and forms the basis for a range of group behaviours such as liking (Hogg & Hardie, 1992), norm conformity and group polarisation (McGarty, Turner, Hogg, David, Wetherell, 1992), and commitment to the group (Moreland, Levine & Cini, 1993). The construct of prototypicality has largely been examined in relation to social influence, where the focus of this work was on examining the influence of those who conform to the cognitive representation of the group prototype (Hogg & Turner, 1987; Mackie 1986). This work revealed that people are more likely to attend to communication from prototypical group members than from non-prototypical members and people were more likely to align their attitudes with the attitudes of prototypical group members (van Knippenberg, 2011, van Knippenberg, Lossie, & Wilke, 1994; van Knippenberg, & Wilke, 1992). Prototypical in-group members were found to be more likely to emerge as leaders, be endorsed as leader (Steffens et al., 2015) and be more effective (i.e. be influential and be able to motivate and satisfy followers) (Moreland, Hogg, & Hains, 1994). Most importantly, these effects were also shown to increasingly gain importance as group membership became salient, and social identification increased (Fielding & Hogg, 1997; Hogg, 2001). Necessarily, the focus of this work was largely on judgments of other's degree of prototypicality, rather than self-judgments of one's own degree of

prototypicality. While clearly this work elucidates the importance of the construct of prototypicality in social group processes, including leadership and social influence, it has been largely overlooked in other domains and hence the value of considering its effects, particularly in relation to self-judgements, has not fully been realised. This is evident in the absence of empirically developed measures of perceived self-in-group prototypicality in the literature. In the following section, I review how prototypicality has been measured in the past and how this has informed the development of a measure of perceived self-in-group prototypicality in the current thesis, to examine the relationship between this construct and psychological well-being.

Measuring Prototypicality

Certainly, evidence of the importance of prototypicality to social influence and leadership has established this concept as an important component of self-categorisation. However, some authors have argued that the conceptualisation of prototypicality remains unclear and its measurement has been inconsistent (Steffens et al., 2014). There are three factors related to the conceptualisation of prototypicality that appear to contribute to some difficulties with its operationalisation. These relate to 1) whether prototypicality is conceptualised in terms of a self-judgment or judgement of others, 2) whether prototypicality should be considered a component of social identification or as a separate construct, and 3) whether it is conceptualised in terms of the degree to which one is a typical group member or embodies the characteristics of the group as a whole. I will now consider each one in turn.

In the main, prototypicality has been measured in terms of the judgments of others as opposed to a self-judgement. This appears to be a result of the focus of interest of researchers on leader prototypicality and its effects. This has meant that within the leadership literature researchers have largely conceptualised prototypicality in terms of other's judgements of a leader's prototypicality. Of course, this has also been reflected in the operationalisation of prototypicality. For instance, Hogg and Hardie (1991) measured participants' judgements of who they thought was the most prototypical member of a football team (in terms of valued dimensions of a team member) in a direct single item question of a realistic group. Haslam, Oakes, McGarty and Onorato (1995) asked participants whether the person delivering a video message was representative of the group, or expressed views representative of other people in the group, and used this

to determine the targets prototypicality. In another example, Steffens, Haslam, Reicher, Platow, et al. (2014) asked participants to respond to questions like whether "*This leader embodies what (the group) stands for*" to determine leader prototypicality. In each case, the judgments of another's degree of prototypicality was measured, rather than self-judgements of one's own prototypicality.

When prototypicality has been measured in terms of a self-judgement (e.g., Easterbrook & Vignoles, 2013; Geissner, van Knippenberg, van Ginkel & Sleebos, 2013; Hogg & Hardie, 1991; Peters, Ryan, Haslam & Fernandes, 2012), this has been done in diverse ways, limiting comparability of the findings across studies. For instance, Hogg and Hardie (1991) asked participants to judge their own prototypicality as a member of a football team. Once again, these authors sought to capture perceptions of prototypicality, this time self-in-group prototypicality, using a single item whereby participants rated how typical they felt they were in terms of the group prototype of "team spirit". In another form, Peters et al. (2012) measured 'prototype fit', by asking women surgeons to respond to four statements which included, "*Generally, I really 'fit in' with surgical consultants*". Easterbrook and Vignoles (2013) measured prototypicality, once again with a single item, asking "*How similar do you feel to the average member of each group?*". In addition, Giessner, van Knippenberg, Ginkel and Sleebos (2013) measured leader self-perceived prototypicality through manipulation, via the provision of false feedback on a perception task either indicating they were highly prototypical or non-prototypical leaders. This was similar to the manipulation used by van Knippenberg and van Knippenberg (2005). They also employed the manipulation check item: "*I represent what is characteristic about my (group name)*". Overall, we can see there have been very different ways of measuring self-perceptions of prototypicality employed across the literature. This, I suggest, results in a lack of consistency in how prototypicality is operationalised, which has limited the comparability and integration of the results from this work.

Secondly, we often find prototypicality is measured as part of social identification, and this causes some difficulties, first in examining the unique contribution of prototypicality to the outcome variable, but also in terms of how it is operationalised. Indeed, the work of some researchers (i.e. Leach et al., 2008; Cameron, 2004) suggests that prototypicality is measured within common social identification

scale items. These authors argue that items such as "*I have a lot in common with the average (in-group) person*" (Cameron, 2004; Jackson, 2002; Spears, Doosje & Ellemers, 1997); "*I am similar to the average (in-group) person*" (Spears et al. 1997); "*I am like other members*" (Ellemers, Kortekas & Ouwerkerk, 1999); "*I am a typical (group member)*" (Jackson, 2002) measure a particular aspect of self-categorisation. Leach et al., (2008) provide empirical evidence to support a conceptual model in which these items all fall under a separate component of social identification. This understanding led Cameron (2004) and Karasawa (1991) to argue that prototypicality should be measured separately from the emotional ties components of social identification, to ensure the unique effects of this concept on outcome variables are examined more closely (Ellemers & Jetten, 2013).

    We also find some confusion in relation to how prototypicality is conceptualised being reflected in its operationalisation. For instance, researchers may emphasise different aspects of prototypicality, in terms of either typicality or representativeness, in their conceptualisation of this construct. This has clear implications for how the concept is measured, as reflected in the wording of the scale items themselves. For instance, some measures emphasise prototypicality in terms of similarity with the average (Easterbrook & Vignoles, 2013) or 'typical' group member with a single item, "*How similar do you feel to the average member of the group?*" Others focus on embodiment of the characteristics or representativeness as a group member with measures of representativeness of the attitudes of the group (Haslam, Oakes, McGarty, Turner & Onorato, 1995), or in terms of leader prototypicality with items such as: "*This leader embodies what (the group) stands for*" and "*This leader is representative of members of (the group)*" (Steffens et al., 2014). Then again, other authors have included scale items, within the same scale, which appear to measure both aspects of prototypicality. For example, both these items, "*Represents what is characteristic about (group name)*" and "*Is very similar to most people in (group name)*" are included in the same scale developed by Platow and van Knippenberg (2001), despite reflecting both the similarity and embodiment aspects of the conceptualisation of prototypicality.

    Each of the above mentioned issues have clearly impacted the way in which prototypicality has been operationalised in the literature. This could have a number of implications for the comparability of the results between studies, and the ability of this

work to further theoretical understandings of the concept of prototypicality. Overall, the operationalisation of prototypicality appears ad hoc. For example, Hogg (1998), in some studies, employed a proxy measure of prototypicality (via a manipulation of prototypicality), but in other work just asked direct questions to measure perceptions of prototypicality (Hogg & Hardie, 1991). Platow and van Knippenberg (2001), in their work examining leader prototypicality, manipulated leader prototypicality experimentally and created a manipulation check to measure perceptions. This included items such as: "*Represents what is characteristic about (group name)*"; "*Is representative of (group name)*"; "*Is a good example of the kinds of people in (group name)*"; "*Stands for what people in (group name) stand for*" and "*Is very similar to most people in (group name)*". The items in this manipulation check were subsequently adopted by other authors to measure leader prototypicality (e.g., Steffens, Haslam, Reicher, Platow, et al., 2014). The Social Identity in Leadership scale (SIL), included items such as: "*This leader embodies what (the group) stands for*"; "*This leader is representative of members of (the group)*"; "*This leader is a model member of (the group)*" and; "*This leader exemplifies what it means to be a member of (the group)*".

In conclusion there have been a number of disparate ways in which prototypicality has been conceptualised and measured across the small area of work that has examined this construct. Recently, Steffens et al. (2014) acknowledge that there appears to have been some confusion about the precise meaning of prototypicality in the literature, resulting in measurement inconsistencies (see also Bartel & Weisenfeld, 2013, Hogg, van Knippenberg & Rast, 2012; van Knippenberg, 2011). It has also been identified that some social identity measures also include items which measure the concept of prototypicality (Leach et al., 2008; Cameron, 2004). This has led some authors to suggest that prototypicality should be measured separately from social identification (Ellemers & Jetten, 2013). It has also been identified that there may be value in measuring self-perception of one's own prototypicality as opposed to simply others judgments of one's prototypicality (Steffens et al., 2014). By considering each of these points in the development and employment of a measure of prototypicality, the current thesis seeks to contribute to clarifying how prototypicality should be conceptualised and operationalised in future work.

Prototypicality and Psychological Well-being

From the SIA, prototypicality judgements are associated with self-categorisation. However, while we know social identification is important to psychological well-being, we do not know how prototypicality might relate to psychological well-being. As noted by Jetten, Hogg and Mullin (2000, p. 186), "category prototypes of self-inclusive categories prescribe behaviour, locate us in the social world, regulate our expectations and perceptions of self and others, and furnish consensual validation for who we are, what we believe, and what we do". People in salient groups, thus, pay close attention to the prototype, to information that delineates the prototype and to people who provide information about the prototype (e.g., Hogg, 2001; van Kleef, Steinel & Homan, 2013). People care how well they, themselves, match the prototype (e.g., Schmitt, Branscombe, Silvia, Garcia, & Spears, 2006; see also Jetten, Spears & Manstead, 1997), how well others match the prototype (e.g., Haslam, Oakes, McGarty, Turner & Onorato, 1995; Koivisto & Lipponen, 2015), and how prototypical others think they are (e.g., Schmitt & Branscombe, 2001; Spears, Doosje, & Ellemers, 1997). We know then that prototypicality is important to how individuals see themselves and their place in the world, so when a social group one is a member of is important to an individual then it is also likely that prototypicality will be important. More specifically, self-judgements of one's own prototypicality may be particularly important. In so far as prototypicality defines the individual positively then it is also likely to result in positive psychological well-being. Indeed, this was stated most clearly by Sheeran, Abrams and Orbel (1995, p. 77), who observed "those seeing themselves as more prototypical can be expected to have higher self-esteem." This claim received some support in a study by Jetten, Branscombe and Spears (2002) in which expectations of becoming more in-group prototypical enhanced group members' collective self-esteem. In terms of the inverse, Turner (1982) originally stated, learning that one is not prototypical of a valued social group is likely to result in a negative self-evaluation.

Numerous studies show the degree to which individual group members match the defining features of a group (i.e. are highly prototypicality) is related to intragroup and intergroup behaviour and the way people experience their group membership (e.g., Jetten et al., 2002; Jetten, Branscombe, Spears & McKimmie, 2003; Jetten et al., 1997;

Noel, Wann & Branscombe, 1995; Oakes, Haslam & Turner, 1994; Schmitt & Branscombe, 2001; Simon & Sturmer, 2003; Turner, 1985). Prototypical group members, compared with more peripheral group members, are evaluated more positively (Hogg, Cooper-Shaw & Holzworth, 1993; Hogg & Hardie, 1992), are more likely to be group leaders (Eagly, Karau & Makhijani, 1995) and define the norms of the group (Oakes, 1997; Turner et al., 1987). However, as mentioned in the previous section, very little work has measured self-perceptions of prototypicality and in particular its relationship to psychological well-being. Given this, we simply do not know much about how self-perceptions of prototypicality may influence psychological well-being.

Drawing from other work within the SIA however, we do find some evidence to support the possibility that perceived self-in-group prototypicality is related to psychological well-being. First, we know that self-categorisation often leads to increased positive feelings towards oneself (i.e. self-enhancement) and increased positivity towards other in-group members (i.e. liking). Hogg and Hardie (1992) found 'liking' fellow in-group members is positively related to the degree to which they match the prototype (prototypicality). Inversely, we also find, being 'different' from fellow in-group members, increases self-consciousness (Kramer, 1998) and anxiety about acceptance in the group (Baumeister & Leary, 1995; Louis, 1980; Moreland, 1985; Van Maanen, 1977) and, as stated above, learning that one is not prototypical of a valued social group is likely to result in a negative self-evaluation (Turner et al., 1987).

Taken together, the evidence suggests that self-judgments of one's own prototypicality may in and of itself enhance positive feelings and 'liking' towards oneself. We know that the position one holds within a social group also matters to psychological well-being (Lewin, 1948). Marginal or peripheral position within a social group has been found to be an undesirable state and can increase negative emotions including increased insecurity (Lewin, 1948), self-consciousness (Kramer, 1998), anxiety (Baumeister & Leary, 1995) and reduced personal and collective self-esteem (Jetten, Branscombe & Spears, 2002). Thus, in so far as higher self-in-group prototypicality represents to individuals that their position in the group is central, and/or secure, rather than peripheral, and/or less secure (Ellemers & Jetten, 2013), this could also enhance psychological well-being. Indeed, this supports the position of Ellemers

and Jetten (2013) who posit that higher prototypicality signifies security of one's place within the group, or at least reduces the threat of expulsion. We know that threat to one's acceptance in the group (Ellemers, Spears, & Doosje, 2002) or threat of exclusion from a social group is generally an aversive emotional state (Baumeister & Tice, 1990). So, if higher prototypicality represents increased centrality/security of one's position within the social group or low prototypicality signifies a more peripheral/insecure position in the group then it prototypicality is will have negative implications for psychological well-being. Finally, we also know that group membership itself affords individuals an increased sense of belongingness, or social connectedness with other group members (Cruwys et al., 2014; Baumeister & Leary, 1995). Some authors even suggest belongingness is a fundamental human need (Baumeister & Leary, 1995; Leary, Tambor, Tredal & Downs, 1995) and if not realised can have negative implications for psychological well-being (Baumeister & Tice, 1990). We also know that prototypicality is positively associated with greater acceptance as a leader (Steffens et al., 2015), inclusion in a group by others (Pickett & Brewer, 2005) and perceptions of having positive personality traits (Platow, McClintock & Liebrand, 1990; van Dijke & De Cremer, 2008), each of which could benefit psychological well-being (see the social support literature) (Branscombe, Schmitt, & Harvey, 1999). Together, this suggests being a prototypical group member may have a direct effect on an individual's psychological well-being.

To my knowledge, the relationship between self-perceptions of one's own prototypicality and positive affect, feelings of social connection or psychological well-being has not been examined before. However, based on the review provided here, we can see that the work done within the SIA so far supports the assumption that perceptions of self-judgements of prototypicality *could* positively influence psychological well-being. In fact, it indicates that self-judgements of prototypicality may enhance positive affect and self-concept, particularly if: 1) the group matters to the individual (one is highly identified); 2) feelings of connectedness/belonging are enhanced by identification; and 3) prototypicality represents increased security in one's position in the group. However, we simply do not know how prototypicality, and in particular, self-judgements of prototypicality, may affect psychological well-being. It is

this gap in the literature, that I attempt to address in this thesis, but first I consider the relationship between social identification and prototypicality.

The Relationship between Social identification and Prototypicality

The relationship between social identification, prototypicality and psychological well-being has not been examined extensively before. A small amount of evidence directly shows prototypicality judgements moderate the effects of social identification on psychological well-being. For example, we find two studies that test the effects of prototypicality judgments in terms of gender, on an individual's emotions and behaviour (Schmitt & Branscombe, 2001; Peters et al., 2012). The first study demonstrated that men, when told they were 'non-prototypical' of the masculine prototype, felt increased negative affect and increased liking towards more prototypically masculine targets (Schmitt & Branscombe, 2001). This study also demonstrated these effects were even stronger for participants who identified strongly as 'male' compared to those who did not identify as strongly. The results of this study demonstrate a direct link between social identification, perceived non-prototypicality and a negative emotional response. In the second study, women trainee surgeons, compared to their male counterparts, were found to be more likely to assign masculine attributes to their occupation than as a personal trait, and this was related to a lack of perceived 'fit' in the occupation. Additionally their perceived non-prototypicality was associated with less identification as a surgeon and greater expressed desire to leave the profession (Peters et al., 2012). The results of this study additionally demonstrated that social identification and *self-judgements of prototypicality* were related, and influenced behaviours associated with psychological well-being (i.e. leaving employment). Both of these studies examine the negative effects of lack of fit or non-prototypicality on psychological well-being. We still do not know the full range of the effects of interaction between social identification and prototypicality on positive psychological well-being might be. To address this gap in the literature we must consider how a desire to affiliate (social identification) and self-judgements of the degree to which one embodies the characteristics of a social category (prototypicality) might impact each other.

Before we can consider what might be the variable effects of the interaction of these two concepts on psychological well-being, it is first important to recognise that

individuals can differ in the degree to which they identity and see themselves as a prototypical member of a social group. Indeed, it may well be that individuals do endorse a range of scores on measures of social identification and prototypicality, and these scores can be used to predict differences in attitudes and behaviour (e.g., Platow & van Knippenberg, 2001; Iyer et al., 2009). To illustrate how the relationship between identification and prototypicality might differentially impact psychological well-being, let's consider two students of the same university. First, both individuals might identify with their university to the same degree, but differ in how much they see themselves as prototypical (e.g., because they vary in their involvement in campus life). The individual who is less involved might feel less prototypical, and as a result consider their position in the social group as less secure and hence experience lower psychological well-being as a consequence. Conversely, two individual members might be similarly prototypical, but one may identify less with the university than the other because he or she is only a part time student (cf., Johnson & Ashforth, 2008). In this case, the individual may feel the group is not important to how they see themselves, and, while secure in their position in the group, this may have no bearing on their psychological well-being. In both cases, we see that different levels of social identification and prototypicality could be evident in the same individuals at the same time. We can also see the combination could also result in different outcomes for psychological well-being depending on the combination of, 1) the importance of the group membership to the individual (social identification) and, 2) the degree to which they perceive themselves as embodying the characteristics of members of the social group (prototypicality). Because the relationship between these two concepts and psychological well-being have not been examined before, we simply do not know how they might combine and it is the aim of this thesis to elucidate this further.

The review of prototypicality presented in this section identifies some difficulties in how prototypicality has been conceptualised and measured in the past. In this review I suggest examining self-in-group prototypicality and the interaction between this concept and social identification, may be valuable. To this end, I define perceived self-in-group prototypicality in the current thesis to be the *perception of the degree to which individuals see themselves as prototypical (embodying/representing*

important attributes) of a salient in-group, in the comparative context of specific out-groups.

Conclusion

This chapter presents of some of the key concepts from the SIA. The underlying theoretical perspectives of the SIA suggests that an individual's self-concept is comprised of personal and social self categories. These self-categories have meaning, and the processes that lead people to construct the social category have direct implications for psychological well-being. The review I provide in this chapter clearly demonstrates that social identity processes form the basis upon which the 'social' is subjectively represented within the self and through which affiliation with others in the same social category occurs. We know from studies employing the SIA that people identify as a member of a social group (social identification) and have impressions of some group members as embodying important characteristics of group members (prototypicality) more than others. But also people can vary in terms of both (i.e. they can be more or less prototypical or can have greater or lesser degrees of social identification).

While considerable empirical evidence shows social identification is strongly related to psychological well-being, we also know that this is not always the case. In my analysis of another key social identity concept, prototypicality, we find that individuals' perceptions of the degree to which they embody the characteristics of an in-group member may additionally contribute to psychological well-being. We see the work examining this construct, however, has tended to focus on prototypicality of others and not self-prototypicality. However, just as people can make self-judgements about how much they identify with a group, they also can have self-judgements of their own degree of prototypicality. We also see people care about social groups they are a member of (identify) and the degree to which they embody characteristics of members of the social category (prototypicality) and, when they do see themselves in terms of a social identity, or as having a central position within a social category, a variety of different outcomes may emerge, including to their psychological well-being. It is the aim of the current thesis to examine the relationship between the two social identity concepts,

social identification and self-prototypicality, and psychological well-being, to more fully answer the question - how do social factors come to influence psychological well-being?

CHAPTER 5

Propositions of the Current Thesis

Discovering the social identity antecedents of psychological well-being

In the preceding chapters, I described what psychological well-being is and how it has been conceptualised and measured in the past before defining how it is conceptualised in the current thesis. I then reviewed the literature that demonstrates social factors are implicated in the biopsychosocial model of psychological well-being, before identifying that social factors have received limited attention, or have not been examined in a cohesive way to date. Therefore, I explained the key concepts of a model of social processes, the social identity approach (SIA), which has recently been applied to the examination of social factors in health and well-being (see Jetten et al., 2012 for review). I identified how this framework can be useful to explain the underlying social cognitive processes whereby the social, in particular social group identities, comes to be psychologically represented, shape cognition, emotion and behaviour, and ultimately can be used to predict psychological well-being.

In reviewing the literature from within the SIA, I demonstrated that *social identification* is an important predictor of psychological well-being, but that alone it cannot explain all the effects found. Building upon this previous work, I subsequently outlined another key social identity process, *prototypicality*, and outlined how this may explain this gap in the literature. In particular, I outlined how self-judgments about prototypicality, while not often measured in the past, may assist us to predict how social factors influence psychological well-being. I demonstrated that these two social identity concepts have validity and applicability to the examination of the social factors-psychological well-being relationship. In doing so, I showed that the affinity people feel towards social groups they are members of, and the degree to which they embody characteristics of members of the social group, could assist the prediction of psychological well-being. While I demonstrated that in most instances, seeing oneself as

a member of a group (social identification) is better for one's psychological well-being than not being a member, I also showed that when people perceive themselves to embody the characteristics of group members (self-prototypicality), this may also enhance psychological well-being. I noted that depending on the degree to which one perceives oneself as prototypical could potentially moderate the positive effects of social identification, potentially even reversing them under specific circumstances (Haslam et al., 2012). This forms the basis for the predictions of the current thesis, such that self-judgements of prototypicality could account for the observed inconsistency in the benefit of group membership to psychological well-being.

This thesis represents a first attempt to examine how social identification and prototypicality may interact to influence psychological well-being. We know that, 1) people have an affinity towards social groups they are a member of (social identification); 2) people are afforded certain benefits through embodying the characteristics of group members, or inversely, are afforded less benefits if they do not embody the group members characteristics as much (prototypicality); 3) prototypicality is determined by the degree to which one embodies the characteristics of group members and, therefore I posit that self-judgements of prototypicality may moderate the positive effects of social identification on psychological well-being. However, it is important to note that while the review provided in the preceding conceptual chapters makes a clear case for using the SIA to examine the processes by which social factors influence psychological well-being, little in the way of empirical work has examined the relationship between prototypicality and psychological well-being. Hence, we simply do not know if self-judgements of prototypicality will have an effect, the extent of any effects, or how exactly this effect will manifest.

This leads me to the predictions of the current thesis, such that social identification and perceived self-in-group prototypicality will either independently, or multiplicatively predict psychological well-being. First, it is important to note that while I believe these effects will occur, the way in which they will combine is not clear and remains an empirical question of this thesis. For example, they could interact, combine additively or completely independently predict psychological well-being. Second, it is also important to recognise that depending on the nature of the group (i.e., whether it is positively or negatively valenced) then we may also find different effects. For instance,

it may be less beneficial to psychological well-being to see oneself as highly prototypical of a negatively valenced group identity. Moreover, it remains unclear whether the exact effect may be, in terms of when or if social identification or prototypicality may be more or less influential to psychological well-being. Clearly, only further investigation which examines this question will elucidate this. Nevertheless, the important contribution this work provides is a basis for which to understand, measure and consider the effects of social identification and self-in-group prototypicality judgements, first in terms of psychological well-being and perhaps in the future, on a whole host of outcomes.

We know that *social identification* as a social group member provides people with a number of different resources demonstrated to be important in the biopsychosocial model of psychological well-being, including knowledge of who they are, what they need to do, and a sense of connectedness to others (Cruwys et al., 2016). We also know that self-categorisation leads people to understand who is 'in' the social category and who is not, and when they are 'in', where they are aligned along a continuum of 'in-ness'. As foreshadowed, both social identification and self-in-group prototypicality are self-categorisation processes that contribute to judgements of 'in-ness'. Given this, it is likely that the degree of 'in-ness' is determined by both the degree to which a person identifies as a member of the social group and/or the degree to which a person sees themself as prototypical or representative of the content or meaning of the category, or their *prototypicality*. It could be that either of these social identity concepts could predict psychological well-being, both could or, indeed, in some instances, both may not predict psychological well-being at all. In addition, different combinations in the degree of social identification and self-prototypicality could predict psychological well-being in different ways.

Despite some confusion about how prototypicality should be conceptualised in the literature, there is clear agreement that people do make judgements of their own prototypicality and this is integral to self-categorisation. There is some agreement that self-prototypicality judgements are related to perceptions of one's degree of 'in-ness' within a social group, or centrality of marginality of one's position in a social group (Ellemers & Jetten, 2013). There is also considerable evidence that marginal group members often have poorer psychological well-being (Phinney, Horenczyk, Liebkind &

Vedder, 2001). However, no previous work has examined the relationship between social identification and self-prototypicality, and psychological well-being. We would expect however, that the more people perceive themselves as embodying the qualities of social groups they identify with (assuming the groups are broadly positive to begin with), then they would actually have enhanced psychological well-being. I expect to replicate previous research which shows that the more people identify with a social group they are a member of, the greater their psychological well-being will be. However, I also expect that the more they perceive themselves as embodying the characteristics of a group member, the greater their psychological well-being will be.

To more fully ascertain the nature of these effects, I will first need to identify whether: 1) I can measure self-in-group prototypicality in a reliable and valid way; 2) I can measure this factor separately from social identification; 3) self-in-group prototypicality can add additional predictive power beyond social identification alone to predict psychological well-being.

In order to test the overarching prediction of this thesis, that social identification and perceived self-in-group prototypicality will either independently, or multiplicatively predict psychological well-being, I first developed a scale designed to measure self-in-group prototypicality (the Perceived Self-in-group Prototypicality Scale or PSIPS) to be used in the following empirical studies. Using the data collected from each of the empirical studies contained in this thesis, I then tested the measurement model to determine whether the PSIPS scale items measured a construct separate from social identification. This formed the basis for Hypothesis 1, summarised in Table 1 (page 79 of this thesis). I also tested this measurement model using each data set individually, to confirm these results, and this is reported in the results sections of each empirical study. It was important to ascertain if I could, in fact, measure social identification and prototypicality separately for a number of reasons. First, if, in fact, the newly developed scale was measuring a related but separate construct from social identification, then I could better understand the contribution each was making in predicting the primary dependent variables, that being, measures of psychological well-being. Second, I could subsequently use the scale to test specific empirical hypotheses about the power of perceived self-in-group prototypicality beyond social identification, and in interaction with social identification, to predict various measures of psychological well-being. It is

important to note that two significant shortcomings of the scale analyses conducted, were that the scale was not developed and empirically tested prior to conducting the empirical work and, that the social identity scale with which the newly developed scale was compared with, did not include any prototypicality items. Further empirical work to fully validate this scale is still required.

There are a number of ways in which we could expect the nature of the relationship between social identification, prototypicality and psychological well-being to occur. First, it is possible that the measures of social identification and prototypicality will impact each psychological well-being measure separately. If this is indeed the case, then there are two ways in which they may be related to psychological well-being. In the simplest manner, one or the other (or both) may predict well-being. In this main effects model, social identification and perceived self-in-group prototypicality make independent contributions to various forms of psychological well-being. Based on previous findings (see Jetten et al., 2012 for review), which have shown a largely consistent positive relationship between social identification with various indicators of psychological well-being, it could be predicted that this relationship will always be positive, and as social identification increases, psychological well-being will also increase. By way of example, we may find that students who identify strongly with the student social category will have higher psychological well-being than those who are relatively less identified. While we do not have direct evidence that higher prototypicality is beneficial to psychological well-being, based on the analysis I provide in the preceding chapter, we could reasonably predict that students who perceive themselves as prototypical of the student social category, will also have higher psychological well-being than those who perceive themselves as relatively less prototypical. Perhaps, however, the magnitude of these effects will be less than those of social identification. These two predicted main effects are visually depicted in Figures 2 and 3 with a main effect only for social identification depicted in Figure 2. This forms the basis of Hypothesis 2 and 3, summarised in Table 1.
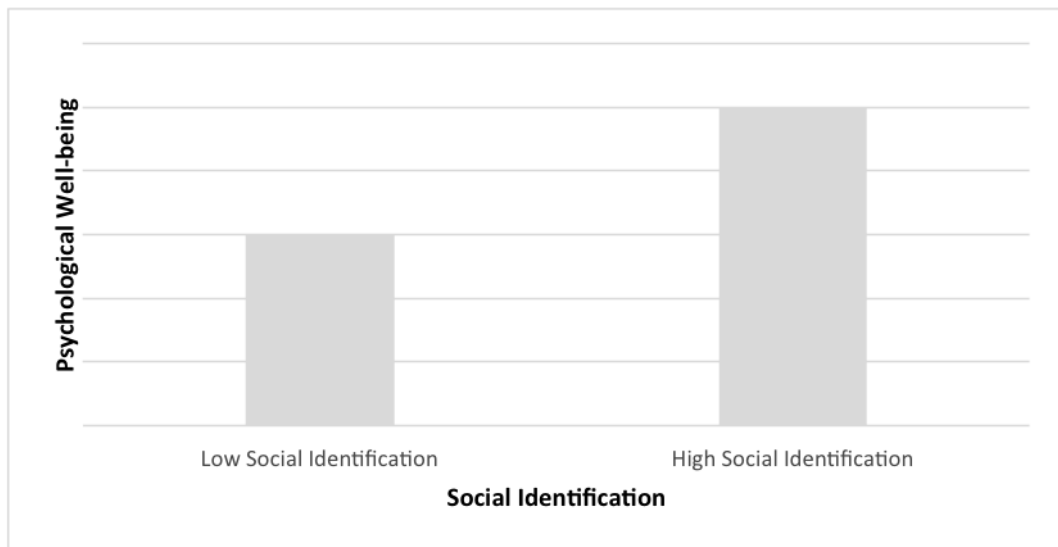
Figure 2. Significant main effect for social identification on psychological well-being, but no effect for prototypicality.
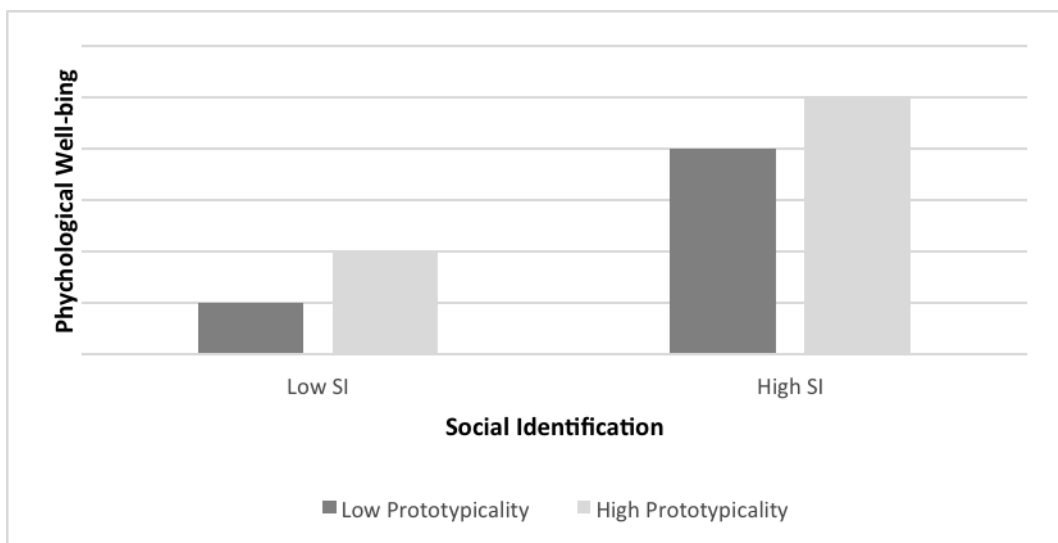
Figure 3. Significant main effects for both social identification and prototypicality on psychological well-being.

In addition to these potential main effects, the current study designs will allow for identification of potential interactions between social identification and perceived self-in-group prototypicality. There could be a number of possible forms the moderation effect manifests, so each will be pictorially represented in Figures 4-8.

First, prototypicality may moderate the effects of social identification in such a way that its effects emerge *only for those people who have relatively high levels of*

social identification. In this way, perceived in-group prototypicality is important only when the group is also subjectively important to group members. The pattern of this effect is displayed in Figures 4 and 5 and forms the basis of hypothesis 4a. Secondly, it is also possible that prototypicality could moderate the effects of social identification in such a way that its effects emerge *only for those people who have relatively low levels of social identification.* The pattern of this possible effect is displayed in Figures 6 and 7 and forms the basis of hypothesis 4b in Table 1.

The key difference between Figures 4 and 5 is that relatively low levels of in-group prototypicality may eliminate the positive effects of high social identification on psychological well-being (Figure 5) or could remain, at least to some degree, even when people have relatively low self-in-group prototypicality (Figure 4). There are a number of instances where either of these possibilities could ostensibly be likely to occur. In each case however, one may be clearly better off if one is more highly identified, simply because of the previously demonstrated importance of higher identification to psychological well-being overall.
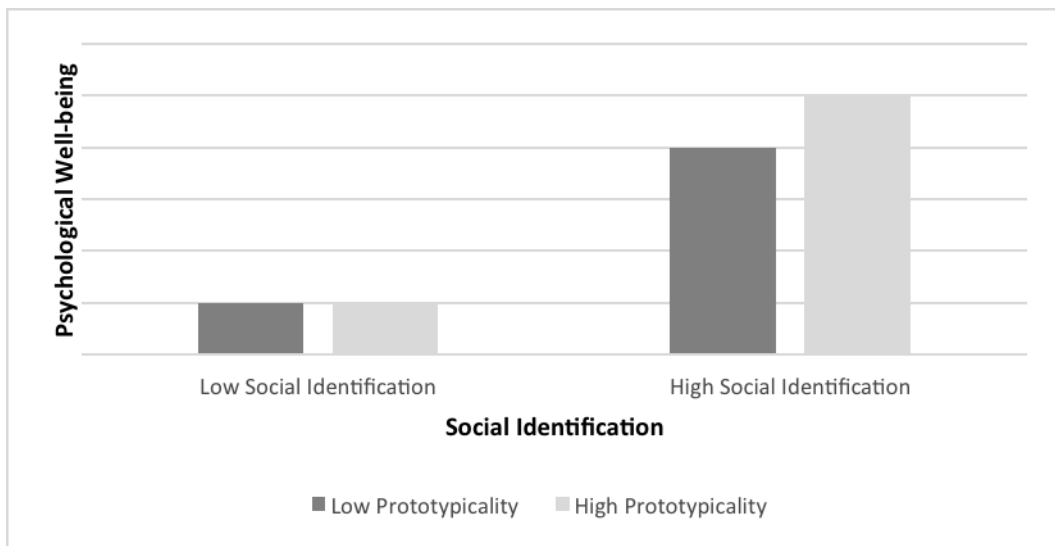
Figure 4. Significant interaction effect for prototypicality for high identification on psychological well-being.
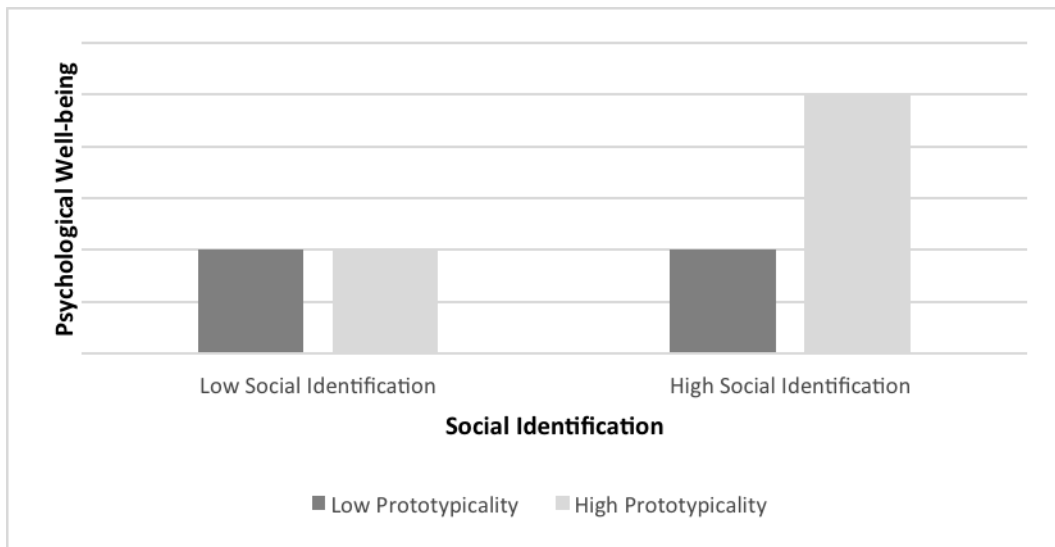
Figure 5. Significant interaction effect between social identification and high prototypicality on psychological well-being, with no effect for low prototypicality as social identification increases

Prototypicality may moderate the effects of social identification on psychological well-being in such a way that its effects are seen *only for those people who have relatively low levels of social identification*. In this case, the processes of perceived in-group prototypicality emerge only when the group is less subjectively important to group members. These patterns are displayed in Figure 6 and Figure 7 and form the basis of hypothesis 4b. The key difference between these two effects, is whether relatively high levels of in-group prototypicality among relatively lower identifiers enhances the negative effects of low identification on psychological well-being (Figure 6), or whether the negative effects of low social identification on psychological well-being are reduced by having relatively higher in self-in-group prototypicality (Figure 7). Indeed, the negative impacts of lower identification on psychological well-being could be either enhanced or buffered depending on the degree to which the individual sees themselves as embodying the characteristics of the group. For example, the psychological well-being of a part time student who might not identify strongly as a student as a full time student, but who sees themselves as prototypical may have their psychological well-being buffered, because they are at least prototypical of a positive characteristic of that identity. Whereas a part time student who does not see themselves as prototypical may feel significantly less psychologically 'well' because

not only do they not have the benefits of being highly identified and they also do not have access to the buffering effects of seeing themselves as a prototypical.
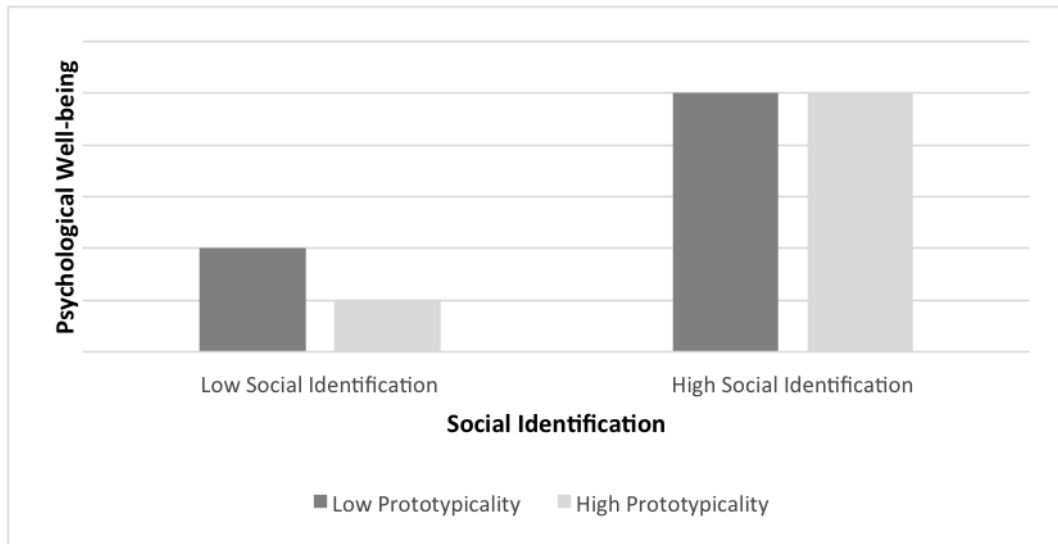
Figure 6. Significant interaction effect between social identification and prototypicality on psychological well-being, only when social identification is low
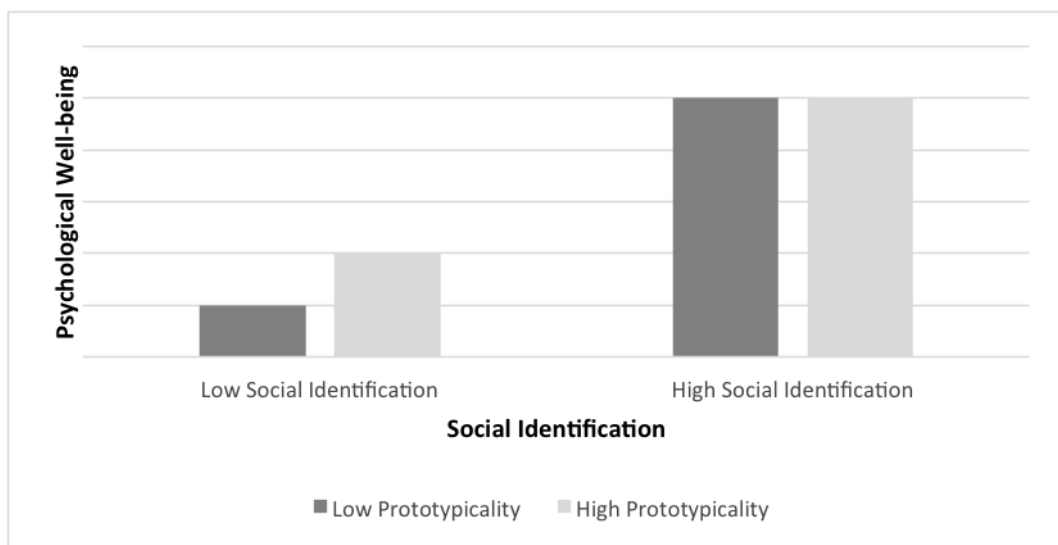
Figure 7. Significant interaction effect between social identification and prototypicality on psychological well-being, only when social identification is low

And of course, the final possibility is the absence of a moderating effect by prototypicality on the effects of social identification on psychological well-being at all (H4c). This is depicted in Figure 8.
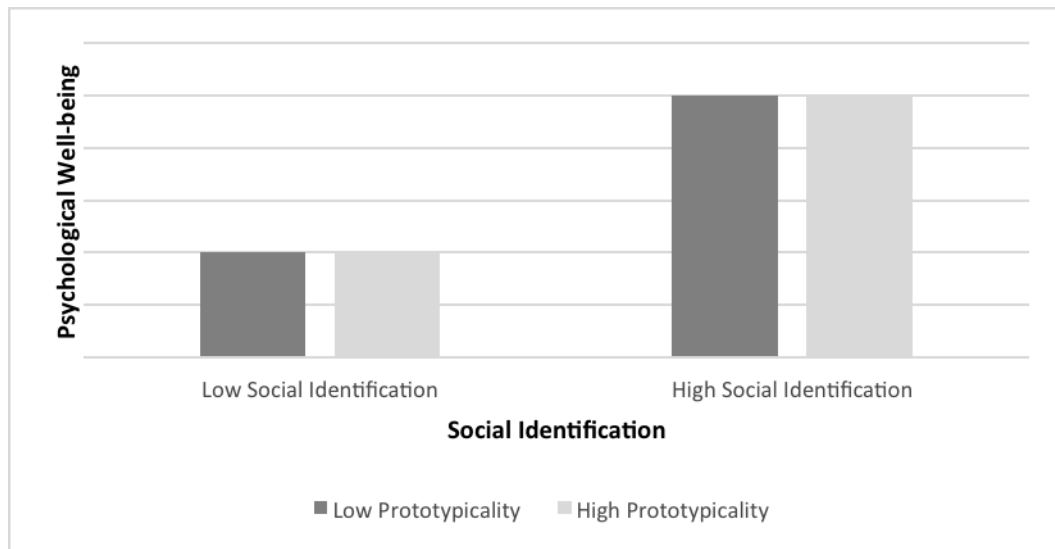
Figure 8. No significant interaction effect between social identification and prototypicality on psychological well-being and no main effect for prototypicality

In the following chapters, I report four unique data sets evaluating the above possible patterns of effects: two correlational, two experimental and a fifth analysis which combines the data from each of the four studies. Prior to these, I report an analysis that summarises the measurement of social identification and prototypicality employed in these studies. Given that measurement of self-prototypicality is not well established, I use the same data sets to examine if the scale used to measure self-prototypicality in each of the empirical studies does measure self-prototypicality separately from social identification. In each of these studies, I specifically test the empirical hypotheses outlined in this chapter and summarised in Table 1. Please note that in each instance I predict a *positive* effect for social identification and prototypicality on psychological well-being. This is because in each study I measure these predictors with what is considered a largely positive social identity (student identity). As I indicate in the above discussion, in the case of a negative identity (e.g., old age, unemployed, smoker) either the exact opposite effect or another pattern may

emerge. I do not, however, measure the effects of groups such as these in the current work and therefore, do not predict these patterns here. Instead, please see Table 1 for the operationalised hypotheses employed in the current thesis, while noting the other possible patterns mentioned above, which will be discussed further in the discussion.

Table 1.

Summary of the empirical hypotheses

H1. *Perceived self-in-group prototypicality* can be measured separately from social identification.

> H1 (operationalised) - The Perceived Self-In-Group Prototypicality Scale (PSIPS) items will load separately from the items on the Social Identification Scale (SIS) in both a Principle Component Analysis and Confirmatory Factor Analysis.

H2. Social identification and psychological well-being will be positively related (Figure 2).

> H2 (operationalised) - Relatively higher *social identification* will be associated with higher satisfaction with life, self-esteem, positive affect, social support and social connection; and lower depression, anxiety, stress symptoms and negative affect.

H3. Perceived *self-in-group prototypicality* and psychological well-being will be positively related (Figure 3).

> H3 (operationalised) - Relatively higher *perceived self-in-group prototypicality* will be associated with higher satisfaction with life, self-esteem, positive affect, social support and social connection and lower depression, anxiety, stress symptoms and negative affect.

H4. Perceived self-in-group prototypicality will moderate the effects of social identification on psychological well-being (depicted in Figures 4-7).

> H4 (operationalised) - Relative self-in-group prototypicality will moderate the positive effect of social identification on satisfaction with life, self-esteem, positive affect, social support and social connection and lower depression, anxiety, stress symptoms and negative affect in a number of possible ways:

> *H4a*   The positive relationship between social identification and psychological well-being outlined in H2 will occur primarily, if not solely, among people with relatively high levels of perceived self-in-group prototypicality.

> *H4b*   The positive relationship between social identification and psychological well-being outlined in H2 will occur primarily, if not solely, among people with relatively low levels of perceived self-in-group prototypicality.

H5   There will be no interaction between social identification and relative perceived self-in-group prototypicality.

CHAPTER 6

Study 1: Measuring Perceived Self-in-group Prototypicality: the development of the PSIPS scale

Chapter Overview

In the current chapter I describe the development and testing of a new scale, the Perceived Self-in-group Prototypicality Scale (PSIPS), which was created for the current thesis. This scale was specifically designed to measure self-judgments of prototypicality. In this study, I simply test the first empirical hypothesis of this thesis, that prototypicality can be measured separately from social identification (H1). I employ data from the four empirical studies reported in the following chapters of this thesis, in which the PSIPS and a social identity scale were both administered. Combining the data from the 4 empirical studies resulted in a total of 569 participants, for whom either a university student identity or university residential hall identity was made salient. Each completed both the social identity scale (Doosje, et al., 1995) and then the PSIPS items, in that order. The analysis provides preliminary evidence of the satisfactory psychometric properties of the PSIPS. I present results from a Principle Components Analysis (PCA) and Confirmatory Factor Analysis (CFA), which show the PSIPS is a reliable measure of self-prototypicality and measures a construct separate from social identification. Finally, I discuss the importance of these findings to the empirical work of this thesis.

Scale Construction

A review of the prototypicality literature reveals clear conceptual distinctions made between social identification and prototypicality (Doosje et al., 1995; Lickel et al., 2000; Jackson, 2002; Ellemers et al., 1999), but some confusion about the precise meaning of prototypicality, and hence considerable variety in the way in which it is measured (Peters et al, 2012; Easterbrook & Vignoles, 2013; Steffens et al., 2014). We

also find many items which measure this construct are often included in measures of social identification (Leach et al, 2008). Also, there are very few measures of self judgements of one's own prototypicality (Geissner et al., 2013; van Knippenberg & van Knippenberg, 2005). To address some of these concerns and enable the empirical work of this thesis I set about developing a scale to measure perceived self-in-group prototypicality and to ascertain if it measured a construct separately from social identification. To this end, I developed a number of items based on items reported in previous work on prototypicality. I incorporated a specific design feature in each item (i.e. the ability to specify the out-group comparison group in each item). The resulting Perceived Self-in-group Prototypicality Scale (PISPS) aimed to measure the degree to which individuals see themselves as a prototypical social group member. This was conceptualised as the *perception of the degree to which individuals see themselves as prototypical of their in-group, in the comparative context of specific out-groups*.

I first considered the desirable features that a measure of self-perceived prototypicality would ideally have and determined three criteria to satisfy two main goals: 1) ease of administration in research and clinical settings and 2) achieving the empirical work of this thesis. The first criterion was that the measure should be self-reporting in structure; second, it should be short in length; and third, the scale should be related to, but measure a separate construct from, social identification. I identified and adapted five items from previous scales (Leach et al., 2008; Kawasawa, 1991, and Platow and van Knippenberg, 2001), which 1) most closely captured the conceptualisation of self-prototypicality outlined in this thesis, and 2) were easily differentiated from other aspects of social identification. The final items chosen, based on these criteria, were adapted from scales developed by Leach et al. (2008), Kawasawa (1991) and Platow and van Knippenberg (2001). If required, I then adapted the scale items by rewording them to reflect *self-judgments* of self-in-group prototypicality and including in each item the specification of a comparative out-group (i.e. using relative term such as "than (*group name*)"). The final five items are shown in Table 2.

Table 2.

Perceived Self-in-group Prototypicality Scale (PSIPS) Items

1. I feel more similar to other *(in-group name)* than I do to non-*(in-group name)/(out-group name)*. (Adapted from, Leach et al. 2008)

2. I have more in common with other *(in-group name)* than non-*(in-group name)/(out-group name)*. (Adapted from, Leach et al. 2008)

3. If I were to express my views I could be more influential with *(in-group name)* than non-*(in-group name)/(out-group name)*. (Adapted from, Platow & van Knippenberg, 2001)

4. I think it would be accurate if someone described me as a typical *(in-group name)* (Adapted from, Kawasawa, 1991)

5. I would feel good if someone described me as a typical *(in-group name)* (Adapted from, Kawasawa, 1991)

I then compared the PSIPS scale items to a social identity scale to determine if the items chosen measured a distinct construct from social identification. The scale chosen for comparison was the four item social identification scale developed by Doosje et al. (1995). This scale is a widely applicable measure of social identification and its items have been included in social identity scales developed subsequently (e.g., Cameron, 2004; Leach et al. 2008). It is important to note however, that the items included in the social identification scale developed by Doosje et al. (1995) do not include items which measure typicality, similarity, or difference from others, which are conceptually related to prototypicality or related aspects of this construct (i.e. self-stereotyping). It is also important to note here that the choice of this social identity scale for comparison with the PSIPS, increased the ability of the tool to measure prototypicality separately from social identification. This enabled testing of the hypothesis of the current work and the contribution of this thesis to increasing

understanding of social processes that influence psychological well-being. I will consider the implications of this in more detail in the general discussion.

The analysis presented in this chapter represents a first attempt to create and test a measure of self-judgments of prototypicality and to determine whether this can be measured separately from social identification. In Table 3 I present the items of the Doosje et al. (1995) social identity scale. This scale has been used extensively in the literature and has formed the basis of comparison for most other measures of social identity created since (Postmes, Haslam, & Jans, 2013). It is shorter and easier to administer than more recently developed multidimensional measures of social identification (Cameron, 2004; Jackson, 2002; Leach et al., 2008), but allows a more nuanced examination of the components of social identification than the also very reliable single item measure (Postmes, Haslam & Jans, 2013). Yet, each of the Doosje et al. (1995) scale's items still align well with the three dimensions of the self-investment component of social identification identified by Leach et al. (2008).

Table 3.

Social Identification Scale Items

1. I see myself as (*in-group name*)

2. I am pleased to be an (*in-group name*)

3. I feel strong ties with (*in-group name*)

4. I identify with other (*in-group name*) (developed by Doosje et al. 1995)

To test the validity of the PSIPS, the current study predicted that: 1) the social identity scale and PSIPS would have appropriate properties, including that the assumptions of normality, internal consistency and multi-collinarity were not violated; and 2) that the social identity scale items would load on a separate factor from the PSIPS scale items.

Method

Participants. Two hundred and forty-nine male and three hundred and twenty female (N=569) Australian National University (ANU) students voluntarily participated in four separate studies, conducted across 2 years (2014-2015) in which both the SIS and PSIPS were administered. Each of these studies are described in detail in the following chapters of this thesis. For Study 1 the data sets of Studies 2-5 were combined and hence include the 171 participants (30%) from Study 2, 103 participants (18%) from Study 3, 125 participants (22%) from Study 4, and 170 participants (30%) from Study 5. Ages ranged from 17 to 49 years (median=19 years). Four hundred and seventy-three (83%) participants reported English was their first language.

Procedure. Data from four unique data sets were combined for analysis in this study. These studies are fully described in the following chapters reporting the empirical studies of this thesis, but here I provide a brief explanation. Participants completed a questionnaire administered via either computer or paper and pen. In three studies the specific social group membership made salient was ANU student and in the other a university residential hall identity as described more fully in each of the following empirical chapters of this thesis. Participants were asked to complete a task prior to completing the scale items, where they were either asked to reflect on the type, number and quality of their social interactions with other ANU students/ hall residents or their personal attributes, and then the attributes of an ANU student. Participants then completed all predictor and outcome variables (i.e. the SIS, PSIPS and then a battery of psychological well-being outcome measures). The latter are described more fully in each of empirical chapters of this thesis, while the SIS and PSIPS items are presented in Table 2 and 3 in the current chapter. Both scales measured responses on a 7-point Likert scale (1="strongly disagree"; 7="strongly agree", with a mid-point of 4="neither agree nor disagree"). Upon completion, participants were provided with an explanation of the study and counselling phone numbers, should they require them, before receiving either payment or course credit.

Results: Scale Reliability

First, for each participant, total scores on both the SIS and PSIPS were

calculated and then the means and standard deviations of each scale were calculated. The normality of the distribution of the SIS and PSIPS scores was then examined visually and statistically. In this analysis the Kolmogorov-Smirnov statistic was not significant, for either scale, suggesting the distribution was not normal. Visual examination of histograms revealed the variables were both slightly positively skewed (>.7), and some kurtosis was present (.18), however, based on the recommendations of Tabinchnick and Fidell (2007, p. 80), due to the large sample size, these were satisfactory. Social identification and prototypicality scores were significantly correlated with each other (r=.63, p<.01), however collinarity statistics (tolerance and variance inflation factors (VIF)) were within acceptable limits (VIF < 2)) (Coakes, 2005; Hair et al., 2012) and these variables' independence could be assumed in regression analysis.

For the SIS a Cronbach's alpha coefficient.85 was obtained, indicating internal consistency. For the PSIPS scale a Cronbach's alpha coefficient of .83 was obtained, indicating internal consistency. The means, standard deviations, and Cronbach alpha's for both scales are reported in Table 4 below.

Table 4.

Means, standard deviations and cronbach alpha of the Social Identity and Perceived Self-In-Group Prototypicality Scales across four data sets.

Scale	*M*	*SD*	α
1. Social Identification[N]	5.62[a]	1.20	.85
2. Prototypicality (PSIPS)[N]	4.42[a]	1.17	.83

Note. [N]=569; [a] = Measured on a scale for 1-7

To test the prediction that the PSIPS scale items load on a singled factor, separate from social identification, the four items of the Social Identification Scale and five items of the Perceived self-in-group Prototypicality Scale were subjected to a principle component analysis (PCA) using SPSS. Prior to performing PCA, the

suitability of data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser Meyer-Olkin value was .846, exceeding the recommended value of .6 (Kaiser, 1974) and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance ($p<.001$), supporting the factorability of the component matrix.

The PCA revealed the presence of two components with Eigen values exceeding 1, explaining (50% and 13%) of the variance respectively. An inspection of the scree plot revealed a clear break after the second component. Using Catell's (1966) scree test, it was decided to retain two components for further investigation. To aid in the interpretation of the two components, oblimin rotation was performed to account for the high correlation between the items. The rotated solution revealed the presence of simple structure (Thurstone, 1947), with the first component corresponding with the social identification scale items and the second with the prototypicality scale items. Both components showed a number of strong loadings and all variables loaded substantially on only one component except the fifth Perceived self-in-group Prototypicality Scale item ("*I would feel good if someone described me as a typical ...*"), which only loaded slightly higher on the second component. This is shown in the correlation matrix presented in Table 5.

Table 5.

PCA Component Matrix

Scale Item	Component 1	Component 2
I see myself as (*in-group name*)	**.717**	.137
I am pleased to be an (*in-group name*)	**.827**	-.069
I feel strong ties with (*in-group name*)	**.830**	.059
I identify with other (*in-group name*)	**.882**	-.053
I feel more similar to other *(in-group name)* than I do to non-*(in-group name)/(out-group name)*.	.036	**.787**
I have more in common with other *(in-group name)* than non-*(in-group name)/(out-group name)*.	-.109	**.911**
If I were to express my views I could be more influential with *(in-group name)* than non-*(in-group name)/(out-group name)*	-.040	**.808**
I think it would be accurate if someone described me as a typical *(in-group name)*	.191	**.629**
I would feel good if someone described me as a typical *(in-group name)*	.349	**.423**

As all the items were shown to have a strong fit within the two component analysis (all communalities values were above .47 and .75), this suggested removing the fifth prototypicality scale item would not refine or improve the scale significantly. The interpretation of the two components was overwhelmingly consistent with the prediction, that the SIS and PSIPS scale items measure separate constructs. This was confirmed by Social Identification Scale items loading strongly on component 1 and perceived self-in-group prototypicality items loading strongly on component 2.

To further test the measurement model I then conducted a confirmatory factor analysis. I first examined a single factor model in which all four social identification items and five prototypicality items were entered, loading on one latent variable. The resulting measurement model showed inadequate fit indices according to Kline's (2005) criteria $\chi^2(568)=570.23$, p<.001, comparative fit index (CFI)=.76 and root mean square error of approximation (RMSEA)=.19, 90% CIs=.17, .20). This indicated that social identification and prototypicality scale items loaded on more than one factor, so a two factor solution was examined. See Figure 9 for the path analysis for the final CFA model. As we can see, error terms with high covariance were allowed to co-vary so that in the final model, we see each of the items clearly loaded on the related latent variables and model fit significantly improved as identified by resulting model fit indices ($\chi^2(568)=106.49$, p<.001), comparative fit index (CFI)=.96 and root mean square error of approximation (RMSEA)=.09, 90% CIs=.07, .10). The results of this analysis suggest that the items used to measure social identification (SIS) and perceived self-in-group prototypicality (PSIPS) in the current work are effectively measuring separate constructs.
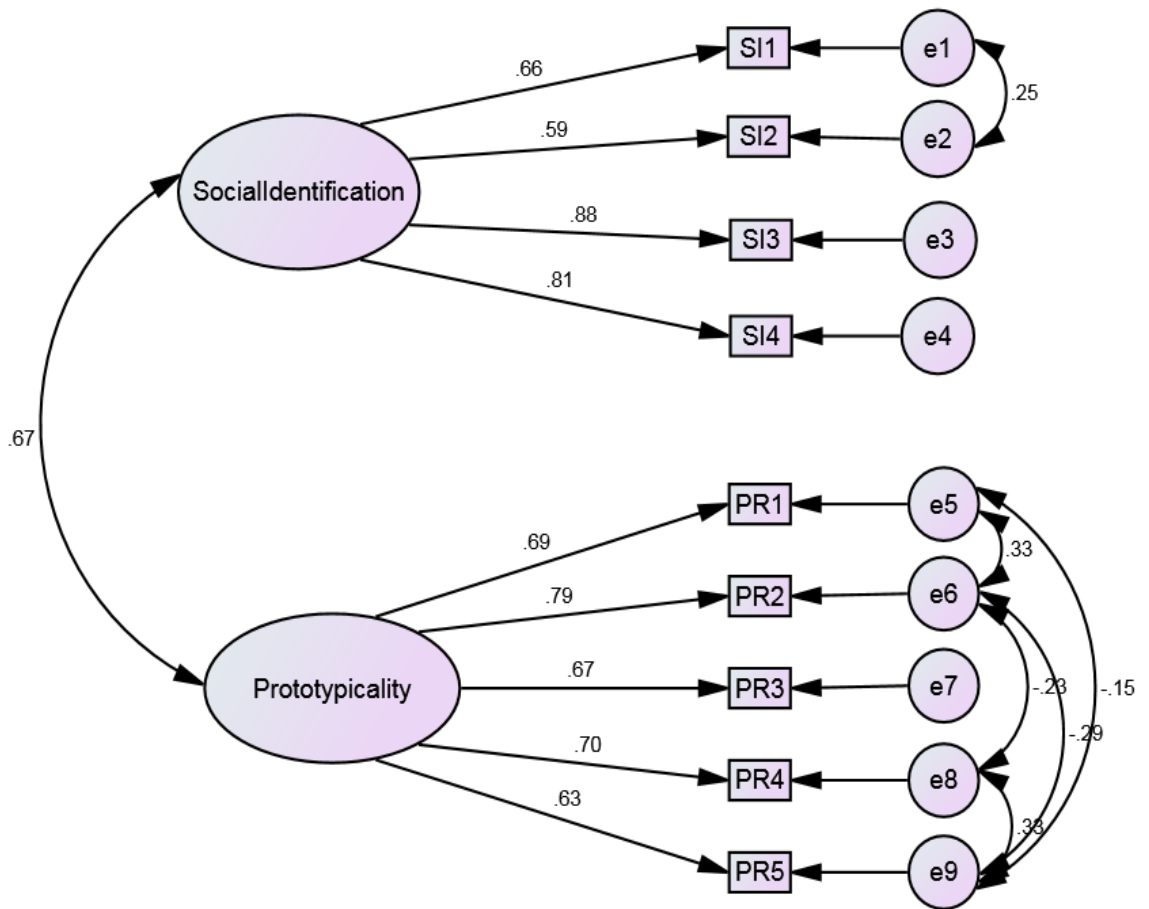
Figure 9. Study 1 Path Diagram for confirmatory factor analysis

Discussion

The results presented in the current study confirmed hypothesis 1 of this thesis. They show that the PSIPS, a scale developed specifically for the current work to measure perceived self-in-group prototypicality, measured this construct separate from social identification. This represents an important first step towards the examination of the prototypicality construct (as defined in this thesis as the self-judgement of the degree to which one represents and embodies the characteristics of a group member). This is important both for the remaining empirical studies presented in the current thesis which employ this measure, but also for future work that can use this scale to examine the impact of self-judgments of degree of prototypicality on outcome variables.

The results of the current study also represent a first step towards attending to a number of concerns articulated by some theorists about the current common conceptualisation of prototypicality (Bartel & Wiesenfeld, 2013; Hogg et al., 2012; Platow & van Knippenberg, 2001; van Knippenberg, 2011; Steffens et al., 2015). The first is that prototypicality has commonly been measured in terms of judgements by others rather than self-judgment. The second, that prototypicality is often conceptualised in terms of 'similarity' rather than 'embodiment of the characteristics of the group'. Third, that items which measure prototypicality are often included within measures of social identification. Finally, prototypicality has almost solely been examined in terms of intragroup comparisons alone, without consideration of out-group comparisons as well. The current analysis suggests it may be possible to measure self-judgement of prototypicality, and the PSIPS, has high internal consistency, and measures a construct separate from social identification.

While the current study does not directly test whether the PSIPS is different from other measures of prototypicality, it is important to note that conceptually the PSIPS items are different from other prototypicality scales. This suggests that the PSIPS does measure self-judgments of prototypicality and could be different from prototypicality judgments made by others. However, the results of the current study only show that the PSIPS measures a construct separate from social identification. The results also do not formally test the validity and test re-test reliability of the PSIPS, and further work in this regard is necessary. In addition, a significant limitation of the current study relates to a number of aspects of the sample itself. First, it comprised of

university students alone. Second, the social identity and comparison out-group specified in the PSIPS differed between each of the studies combined into the one data set used in the current study. There-fore, there is the possibility that the same participants could have completed the study more than once, and how participants in one study were answering the PSIPS may have been different to those in another Study. However as both of these were deemed unlikely to have occurred I decided to compare the data obtained from each of the four Studies in the one analysis. Another limitation of the current study was that the fifth PSIPS item appeared to load on both the social identity and prototypicality factors almost equally. Upon reflection this item could also be answered differently depending on whether the social identity stipulated in the item had a positive or negative valence (e.g. if answered in relation to a stigmatised group, one may not feel good to if someone described you as typical, but one might still see oneself as prototypical). A final, but important shortcoming of the current study that it did measures of validity and reliability in more depth (i.e. test-retest reliability) were not included. Despite these limitations, the current study is the first of it's kind, as far as we are aware of, that explores a novel approach to examining the prototypicality construct. The PSIPS incorporation of a specified comparison out-group into each item is a considerable strength of the PSIPS as it more accurately reflects the original definition of prototypicality (as a social cognitive process that is context dependent), than other measures of prototypicality. Particularly by including the ability to specify the out-group comparison, the PSIPS acknowledges that prototypicality judgements are not simply based on perceived similarity to in-group members, but are based as well on perceived differences from out-group members. While certain design features of the PSIPS were incorporated to address concerns within the literature regarding how prototypicality is conceptualised and measured, the current study does not fully resolve these difficulties. Instead, it simply represents a first step towards the development of a formal measure of self-judgements of prototypicality, and enables the separate measurement of the self-categorisation variables of interest within the empirical program of this thesis.

Conclusion

Drawing on the analysis I provide in the preceding chapter relating to the conceptualisation and measurement of prototypicality in the literature to date, in this chapter I describe the development of the perceived self-in-group prototypicality scale (PSIPS), developed specifically for use in the empirical work of the current thesis. I show how, in the development of this scale, I attempt to address some difficulties with the conceptualisation and operationalisation of prototypicality in the past. The results provide evidence that the PSIPS successfully measures a construct separately from social identification and has high internal consistency. In doing so, I provide evidence to support the use of the PSIPS in the empirical work of this thesis, which aims to examine the relationship between perceived self-in-group prototypicality and social identification and psychological well-being. In the following empirical chapters of this thesis I report the results of two correlational and two experimental studies in which I employ the PSIPS to examine test the predictions outlined in Chapter 5 of this thesis.

CHAPTER 7

Studies 2 and 3: Perceived self-in-group prototypicality enhances benefits of social identification for psychological well-being

Chapter Overview

In this chapter I explore empirically the conceptual processes described in the previous chapters of this thesis. In particular, I explore the nature of the relationship, if any, between social identification and self-in-group prototypicality and several measures of psychological well-being (e.g., satisfaction with life, self-esteem, positive affect, depression, anxiety, stress symptoms, negative affect). To do this, I used two separate university-student samples. The first employed a university residential dormitory as the salient in-group and the second employed students from the same university itself as the salient in-group. In both cases the comparative out-group was broadly defined in terms of 'non-in-group members' (i.e. either residents from another dormitory/students from another university). In both studies, the same measures of psychological well-being were included except for two in Study 3. First, Study 3 used a different measure of depression than Study 2. This was done for two reasons: (1) to determine if the alternative measure would yield the same or different results from that employed in Study 2, and (2) to examine specifically other aspects of psychological well-being that were measured in the Study depression measure (i.e. anxiety, stress and overall distress). Second, an additional measure of state affect (the Positive and Negative Affect Scale; PANAS) was included in Study 3 to further explore the effects across these other aspects of psychological well-being and to observe any potential relationship between our predictors and more state-based psychological well-being.

As Studies 2 and 3 represent the first analyses of their type, they had an exploratory component to them; however they did serve as a test of the empirical hypotheses outlined in Chapter 5.

Overview of Materials

Because the majority of the measures employed were similar across both studies, I now provide an overview of the materials before going on to present the method, results and discussion of each study in turn.

Predictor Variables

The primary predictor variables employed across the two samples included a Social Identification Scale (SIS) and the Perceived Self-In-Group Prototypicality Scale (PSIPS), both of which measured responses on 7-point Likert scales (1="strongly disagree"; 7="strongly agree"). For the former, I used the four-item social identification scale created by Doosje et al. (1995). This scale was shown in the original paper to be a reliable measure (α=.83) and is comprised of four items, "I see myself as (group name)", "I am pleased to be an (group name)", "I feel strong ties with (group name)", and "I identify with other (group name)".

Perceived self-in-group prototypicality was measured using a scale (described and examined in the preceding Chapter 6) which was developed specifically for the current studies. It contained five items, some of which were derived from pre-existing scales (i.e., Kawasawa, 1991; Leach et al., 2008; Platow & van Knippenberg, 2001). Consistent with the broader concepts of relative in-group prototypicality, each item of the PSIPS was designed to incorporate a comparative out-group in addition to social comparisons within the in-group. Thus, for each item of the PSIPS scale in Study 2, the specified in-group was fellow residents from the university dormitory (ie., Bruce Hall Residents) while the comparison out-group was residents from another dormitory, (ie., non-Bruce Hall residents); in Study 3, the specified in-group was fellow university students (ie., ANU students) while the comparison out-group was students from other tertiary education institutions (ie., non-ANU students). The five items of this perceived self-in-group prototypicality scale (with these specifications entered) were: "I feel more similar to other (in-group name) than I do to non-(in-group name)", "I have more in common with other (in-group name) than non-(in-group name)", "If I were to express my views I could be more influential with (in-group name) than non-(in-group name)", "I think it would be accurate if someone described me as a typical (in-group name)", and "I would feel good if someone described me as a typical (in-group name)".

In addition to the above two variables, age, gender and a single-item measuring whether participants had experienced a life stressor in the previous six months also served as covariates in all analyses. These variables have been demonstrated to be significant predictors of psychological well-being in previous work that examines the relationship between social identification an psychological well-being (Lucus, 2007; Rosenfield, 1999). Thus, for comparability and to determine the independent contribution of social identification and prototypicality on psychological well-being they were included as covariates in the current thesis. Of course other covariates such as socioeconomic status were considered, but given this was not a differentiating feature of the population of participants for the current studies it was not included here. Participants were asked to specify their age and gender, and to respond to the statement: "I have experienced a major life stressor in the last 6 months (i.e. death of a loved one, legal or financial hardship)" on the same Likert scale as above where obtaining a score between 1 and 7 indicating the degree to which the participant agreed with the statement. Participants were unable to specify the stressor. One final covariate included was whether participants' first language was English, given that many of the students sampled at our English-speaking university did not have English as their first language; and potential language barriers can have a negative impact on psychological well-being (Dao, Lee, & Chang, 2007; Jung, Hecht & Wadsworth, 2007).

Psychological Well-being Measures

For both Study 2 and Study 3, I included at least two measures of psychological well-being (self-esteem, satisfaction with life), two measures of social coping mechanisms (perceived social support, social connectedness; Branscombe et al., 1999; Branscombe, Fernandez, Gomez & Cronin, 2012; Cobb, 1976; Cornwell & Waite, 2009; Holt & Espelage, 2005; Plant & Sachs-Ericsson, 2004), and at least one measure of psychological distress (i.e., depression or depression, stress and anxiety). All measures, except the depression measure (as noted above), remained constant across the two studies with the addition of a measure of affect in the second study. To measure self-esteem, I used the single item self-esteem scale (SES) (Robins, Hendin & Trzesniewski, 2001), which is reported to have as high validity as the 10-item Rosenberg measure (Gray-Little, Williams & Hancock, 1997). The short version has the obvious advantage of being relatively easy to administer without reduced reliability

(Gray-Little, et al., 1997). Respondents rated the degree to which they agreed with the statement, "I have high self-esteem" on the same seven-point Likert scale, as described above. To measure satisfaction with life, I used the Satisfaction with Life Scale (SWLS) developed by Diener, Emmons, Larsen and Griffin (1985). This is a measure of subjective well-being that is recommended for use with measures of psychopathology or emotional well-being (Pavot & Deiner, 1993), shows good reliability (α=.87; Diener, Emmons, Larsen, & Griffin, 1985) and is comprised of five items: "In most ways my life is close to ideal", "The conditions of my life are excellent", "I am satisfied with my life", "So far I have gotten the important things I want in life", and "If I could live my life over, I would change almost nothing". Participants responded to each of these on same seven-point Likert scale.

I measured perceived social support with four items adopted from Jetten, Haslam and Haslam (2012, p. 351; see also Zimet, Dahlem, Zimet & Farley, 1988). The four items are, "I get the emotional support I need from people", "I get the help I need from other people", "I get the resources I need from other people" and "I get the advice I need from other people". The original reliability was reported as α=.87. I measured social connectedness with four items adapted from a measure of social isolation used by Reicher and Haslam (2006), and outlined in Jetten et al. (2012, p. 351). The four-item Social Connectedness Scale (SCS) included the items: "I have someone close in whom I can confide", "I see myself as a loner" (reverse coded), "I see myself as a sociable person" and "My relationships are important to me". I was guided in my choice of this four-item scale by the goal to keep the overall research questionnaire at a relatively small size to enhance participants' likelihood of completing it. Responses on both the SCS and the Perceived Social Support Scale (PSSS) were measured on the above seven-point Likert scale.

The Centre for Epidemiological Studies Rating Scale for Depression (CES-D) (Radloff, 1977) was used in Study 2. This 20-item measure has been shown to have good reliability (α=.87). Respondents rate the degree to which each of the 20 statements reflecting depression symptoms applied to them over the previous week (e.g., "I felt depressed," "I felt that life had been a failure", and "I was happy" (reverse scored)). Participants responded using a four-point scale ranging from 1 ("rarely") to 4 ("most of the time").

In Study 3, I replaced the CES-D with a different measure of depression (as noted above), the Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995). The DASS-21, in addition to its depression (e.g., "I felt that life was meaningless," anxiety ("I felt I was close to panic"), and stress ("I found myself getting agitated") subscales, shows good internal reliability, with α's ranging between .81 and .99 (Henry & Crawford, 2005). Participants rated the degree to which each of 21 symptom-defining statements has applied to them over the last week, using a four-point scale from 1 ("never") to 4 ("always").

Again, as noted above, in Study 3 I also included an additional scale to measure both well-being (i.e. positive affect) and distress (i.e. negative affect) - the Positive and Negative Affect Scale (PANAS; Watson, Clark & Tellegen, 1988). Each subscale possesses good reliability (α=.89 for the Positive Affect subscale and α=.85 for the Negative Affect subscale; Crawford & Henry, 2004). Participants were presented with 10 positive emotion words (e.g., "excited," "inspired") and 10 negative emotion words (e.g., "upset," "afraid"), and asked to rate the extent to which they were currently experiencing each emotion on a five-point scale (1="slightly or not at all," 2="a little," 3="moderately," 4="quite a bit," 5="very much").

These measures were specifically employed to determine if another measure of depression would yield different results from Study 2 and to examine specifically other aspects of psychological well-being (i.e. anxiety, stress and overall distress, as measured by the DASS-21).

In each of the studies, the scales described above were presented in the following order: Social Identification Scale, Perceived Self-In-Group Prototypicality Scale, Perceived Social Support Scale, Social Connectedness Scale, Self-Esteem Scale, Satisfaction with Life Scale and CES-D (depression) or the DASS-21 and PANAS. Participants then answered demographic questions, including, age, gender, whether English was their first language (measured dichotomously) and whether or not they had experienced a major life stressor in the past six months (measured on a seven-point scale).

Study 2

Method

Participants. Eighty-one male and 90 female (N=171) residents of Bruce Hall, an Australian National University (ANU) residential dormitory, voluntarily participated in this study. Ages ranged from 18 to 28 years (median=20 years). One hundred and thirty four participants (78.36%) indicated that English was their first language. One hundred and twenty-five participants completed the questionnaire in paper-and-pencil format, with the remaining 46 participants completing it electronically. Participants were recruited by student leaders of the residential hall and were offered the chance to win an iPad mini upon completion.

Procedure. The questionnaire was entitled the "Bruce Hall Residents Social Well-being Survey". As the questionnaire had been developed in tandem with the staff and student well-being officers of the dormitory, it incorporated a number of items of specific interest to them that are not included in these analyses (e.g., items that asked residents to rate the facilities and services provided by the university residential hall, including social and academic activities and relationships with other residents). However, by working with the officers of the dormitory, I hoped to enhance engagement and face validity of the study as well as increase the salience of the social group membership of interest. Upon completion, participants were provided with an explanation of the study and counselling phone numbers if they required them. Participants who responded to the paper-and-pencil version of the questionnaire placed it in a secure box upon completion.

Results

I first completed a principal components analysis on the four social identification items and the five perceived self-in-group prototypicality items. Using an oblimin rotation, two components with eigen values greater than one emerged, accounting for 65.49% of the variance. These two components corresponded to the two scales confirming the results obtained in Study 1. As the results of the PCA reported in Chapter 6 included this data set, I do not fully report the result of the separate PCA here, instead I only report the results of the CFA to reduce repetition. To further examine the measurement model, whereby items assessing social identification and prototypicality

loaded on their corresponding yet distinct factors, I conducted a confirmatory factor analysis. I first examined a single factor model in which all four social identification items and five prototypicality items were entered. The resulting measurement model showed inadequate fit indices according to Kline's (2005) criteria $\chi^2(96)=243.82$, comparative fit index (CFI)=.74 and root mean square error of approximation (RMSEA)=.22, 90% CIs=.19, .24). This indicated that social identification and prototypicality scale items loaded on more than one factor. Therefore a two-factor solution was examined in which scale items which exhibited high covariance (that were part of the same factor) were allowed to co-vary (Kenny, 2014). In this final model, each of the items clearly loaded on the related latent variables and model fit indices ($\chi^2(96)= 56.07$, p<.001, comparative fit index (CFI)=.98 and root mean square error of approximation (RMSEA)=.06 , 90% CIs=.04, .07) were greatly improved. See Figure 10 for the path analysis for the final CFA model.
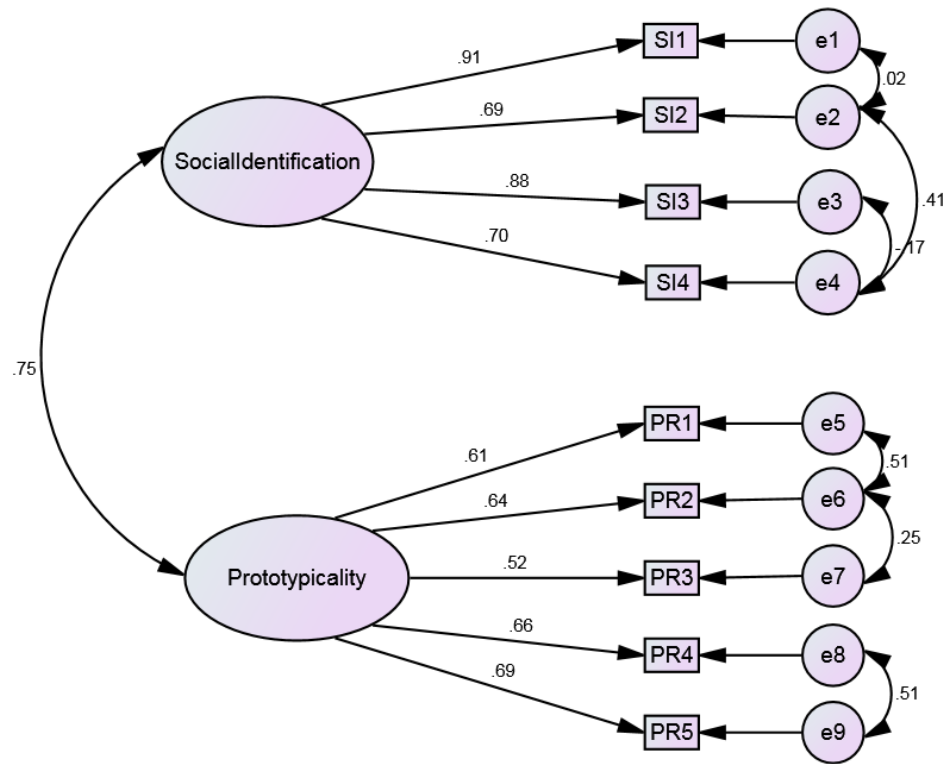
Figure 10. Study 2 Path analysis of confirmatory factor analysis of social identity and prototypicality scale items

I then calculated an average of the items within the SIS and PSIPS for each participant. I also calculated the average of each of the other multi-item measures that were used. Table 6 presents Cronbach's alphas for each of these, as well as the means, standard deviations and pair-wise correlations for each measure. Responses on all scales were significantly greater than the scale mid-point ($ps<.001$), except for: (1) life stressor

(p=.075) and (2) depression (which was significantly *lower* than the scale mid-point (imputed at 2.5), p<.001). Participants had higher levels of social identification than perceived self-in-group prototypicality, $t(170)$=20.64, p<.001. Notably, the negative psychological well-being measure (depression) negatively correlated with each of the positive well-being measures, indicating divergent and convergent validity. Social identification was significantly positively correlated with each of the positive well-being outcome variables (i.e. satisfaction with life, social support, social connectedness) and negatively correlated with depression. Self-in-group prototypicality significantly positively correlated with self-esteem, satisfaction with life, social support and social connectedness. Social identification and perceived self-in-group prototypicality were also significantly positively correlated with each other. Because the independent variables were highly correlated, I examined the collinarity statistics (tolerance and variance inflation factors (VIF)) and all were within acceptable limits (VIF < 2), indicating the assumption for multi-collinarity was met (Coakes, 2005; Hair, Sarstedt, Ringle & Mena, 2012).

Table 6.

Study 2 means, standard deviations, Cronbach's alphas and correlations between variables

Scale	*M*	*SD*	α	1	2	3	4	5	6
1. Social Identification	6.09[a]	1.01	.90	-			.		
2. Prototypicality	4.58[a]	1.08	.81	.59***	-				
3. Self Esteem	4.85[a]	1.52	-----	.14	.01	-			
4. Satisfaction with Life	5.17[a]	1.26	0.89	.42***	.27***	.56***	-		
5. Social Support	5.52[a]	1.14	0.91	.59***	.39***	.33***	.53***	-	
6. Social Connectedness	5.72[a]	1.01	0.76	.68***	.39***	.23**	.41***	.62***	-
7. Depression (CES-D)	1.90[b]	0.47	0.87	-.29***	-.25***	-.50***	-.61***	-.39***	-.26**

**p<.01, ***p<.001 [a]Measured on a scale from 1 – 7. [b]Measured on a scale from 1 – 4.

I next conducted separate regression analyses for each outcome variable, with predictors for each analysis being gender, age, English as a first language, major life stressor, relative levels of social identification, relative perceived self-in-group prototypicality and the interaction between the latter two (each mean-centered; Aiken & West, 1991). The results of these analyses are presented in Table 7.

Table 7.

Models Tested in Study 2

Outcome Variables		AdjR^2 change	B	Std. Er.	β	t	95% CI
1. Self-Esteem	Constant		2.49	1.28			
	Age		.14	.07	.17	2.17*	.01, .27
	Gender		-.10	.23	-.03	-.45	-.56, .35
	ESL		-.21	.32	-.05	-.66	-.84, .42
F (4, 166)=2.25	Stressor	.03	-.14	.05	-.19	-2.56*	-.24, -.03
	Social Identification		.44	.16	.28	2.77**	.13, .76
F (6, 164)=2.50*	Prototypicality	.05	-.15	.13	-.11	-1.17	-.41, .11
F (7, 163)=2.45*	Interaction	.09	.14	.09	.13	1.52	-.04, .33
2. Satisfaction with Life	Constant		3.17	.95			
	Age		.12	.05	.16	2.32*	.02, .21
	Gender		.15	.17	.06	.86	-.19, .49
	ESL		.18	.24	-.05	.73	-.29, .65

F statistic	Predictor	R^2	B	$SE\ B$	β	t	95% CI
$F_{(4, 166)}=1.63$	Stressor	.01	-.11	.04	-.20	-2.85**	-.19, -.03
	Social Identification		.63	.12	.49	5.24***	.39, .86
$F_{(6, 164)}=8.41^{***}$	Prototypicality	.21	.02	.10	.02	.19	-.17, .21
$F_{(7, 163)}=7.47^{***}$	Interaction	.21	.09	.07	.10	1.21	-.05, .22
3. Social Support	Constant		4.88	.77			
	Age		.03	.04	.05	.89	-.04, .11
	Gender		-.12	.14	-.05	-.88	-.40, .15
	ESL		.16	.19	.05	.82	-.22, .54
$F_{(4, 166)}=.03$	Stressor	-.02	-.03	.03	-.07	-1.06	-.10, .03
	Social Identification		.83	.10	.70	8.59***	.64, 1.01
$F_{(6, 164)}=15.77^{***}$	Prototypicality	.34	.07	.08	.06	.88	-.09, .22
$F_{(7, 163)}=16.70^{***}$	Interaction	.39	.21	.06	.27	3.81***	.10, .32
4. Social Connectedness	Constant		3.74	.59			
	Age		.10	.03	.18	3.35***	.04, .16
	Gender		.21	.11	.10	2.00*	.003, .42
	ESL		-.27	.15	-.09	-1.81	-.56, .02
$F_{(4, 166)}=2.13$	Stressor	.03	-.03	.02	-.07	-1.39	-.08, .01
	Social Identification		.82	.07	.81	11.24**	.69, .97

$F_{(6, 164)}=29.92^{***}$	Prototypicality	.50	-.02	.06	-.02	-.28	-.13, .10
$F_{(7, 163)}=28.69^{***}$	Interaction	.53	.14	.04	.20	3.27^{***}	.06, .23
5. Depression (CES-D)	Constant		1.46	.39			
	Age		.002	.02	.006	.08	-.04, .04
	Gender		.11	.07	.11	1.59	-.03, .26
	ESL		-.20	.10	-.14	-2.07^{*}	-.40, -.01
$F_{(4, 166)}=6.65^{***}$	Stressor	.12	.08	.02	.36	5.22^{***}	.05, .12
	Social Identification		-.17	.05	-.32	-3.44^{***}	-.27, -.07
$F_{(6, 164)}=9.31^{***}$	Prototypicality	.23	-.05	.04	-.10	-1.19	-.13, .03
$F_{(7, 163)}=8.15^{***}$	Interaction	.23	-.03	.03	-.08	-1.05	-.09, .03

$^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$

For "ESL", English as a second language was coded as 1 and English as a first language was coded as 0.

For gender, male was coded 0 and female was coded 1.

Age served as a significant predictor of self esteem, satisfaction with life and social connectedness ($p<.001$). Women were significantly more likely to endorse feeling socially connected (M= 5.92, SD=.93) than men (M=5.60, SD=1.03), t(169)=2.08, $p<.05$. The mean difference between those for whom English was a second language (M= 1.69, SD=.38) and those for whom English was their first language (M=1.84, SD=.55) was significant for depression. Participants whose second language was English were significantly less likely to endorse depression symptoms than those for whom English was their first language. Whether participants had a major life stressor in the past six months also predicted significantly lower self-esteem, satisfaction with life and increased depression. These later results confirm previous

findings that experiencing a recent major life stressor is a significant negative predictor of psychological well-being.

   After accounting for age, gender, whether participants had experienced a recent major life stressor, and whether English was their second language, relative levels of social identification served as a significant predictor of each of the five outcome variables. Higher levels of social identification with students' residential dormitory predicted higher levels of self-esteem, satisfaction with life, perceived social support, social connectedness and lower levels of depression. Interestingly, relative levels of perceived self-in-group prototypicality were not separately related to any of the outcome variables. Perceived self-in-group prototypicality did, however, significantly moderate the social identification main effect on two of the outcome variables (social support and connectedness). These interactions are presented in Figures 11a - 11b, with values estimated at one standard deviation above and below the mean.
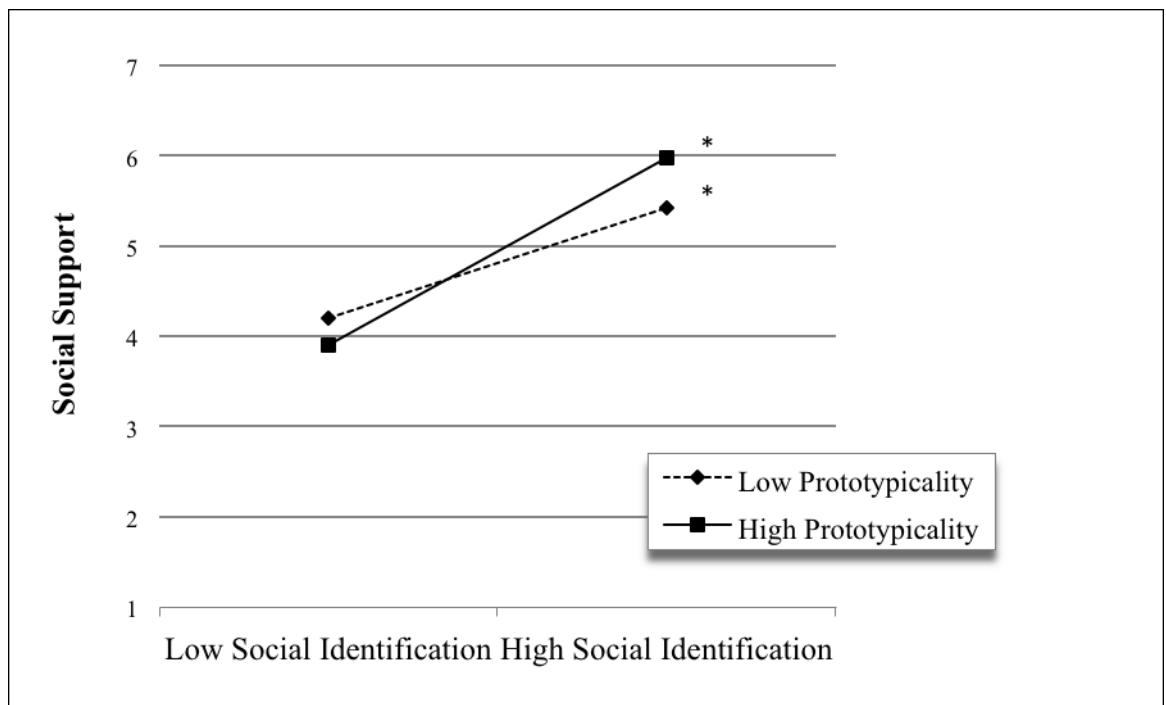
Figure 11a. Study 2 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on perceived social support.

Note: * denotes significant slope
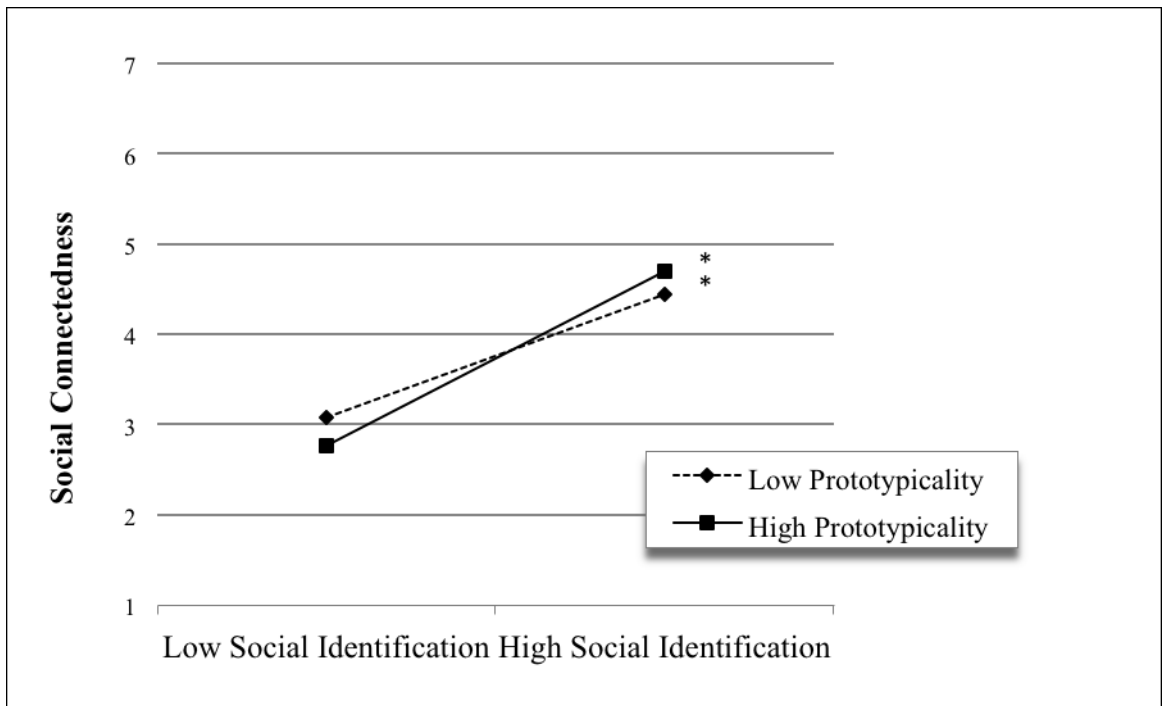
Figure 11b. Study 2 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on social connectedness.

Note: * denotes significant slope

As can be seen, in each instance the positive relationship between social identification and the outcome variable is stronger when participants also perceive themselves as being relatively high in self-in-group prototypicality. The slope of the lines for both higher and lower perceived self-in-group prototypicality, for both outcome variables, were statistically significant. For perceived social support, the slope for the line for higher prototypicality ($t(168)=8.05$, $p<.001$) and for lower prototypicality ($t(168)=6.79$, $p<.001$) were both significant. This was also the case for social connectedness, where the slope for the line for higher prototypicality ($t(168)=9.79$, $p<.001$) and lower prototypicality ($t(168)=9.94$, $p<.001$) were both significant. Overall, relatively higher social identification predicted increased perceptions of social support and social connectedness, and this positive relationship was further *enhanced* when participants also saw themselves as relatively higher in prototypicality.

Discussion Study 2

The results of this study provide support for Hypothesis 2, with a main effect for social identification found on each of the five outcome variables. There was no evidence to support Hypothesis 3, as no main effect for prototypicality on any of the outcome variables was revealed. In support of Hypothesis 4, these results also show prototypicality significantly moderated the positive relationship between social identification and both social support and social connectedness. As relative in-group prototypicality increased, social factors that contribute to psychological well-being (i.e. perceptions of social support and connectedness) also increased, and these effects were even greater for those who identified most strongly as a group member.

Overall, the results of this study provide further evidence that social identification is an important predictor of psychological well-being. Most notably, it demonstrated that even amongst the most highly identified group members there can be differences in psychological well-being, with relatively higher levels of identification being the most beneficial. The results of this study also extends previous work by revealing that perceived self-in-group prototypicality can enhance the positive effects of social identification on at least two social factors related to psychological well-being. Although there was no support for a main-effects model in terms of in-group prototypicality, prototypicality was shown to be an important moderator of the positive effects of relative social identification. Specifically, perceiving oneself to be highly prototypical played a relatively stronger role among those who were relatively higher in social identification.

In Study 3, I sought to examine these same processes in a separate sample with a different social identity, this time, identification as university student. As depression was arguably the most severe outcome variable measured in Study 2 – and yet a variable that was unrelated to perceived self-in-group prototypicality in the regression analyses – I decided to employ a different scale of depression in Study 3 to continue to explore the potential role of perceived self-in-group prototypicality on depression. As noted above, this new measure (the DASS-21) allowed me to measure not only depression, but also anxiety and stress. Finally, I included the Positive and Negative Affect Scale (PANAS) to measure these emotional states as well.

Study 3

Method

Participants. Thirty-nine male and 64 female (N=103) Australian National University (ANU) students voluntarily participated in this study. Ages ranged from 18 to 28 years (median=20 years). Eighty-four participants (87.50%) indicated that English was their first language. Participants were recruited via posters distributed on campus noticeboards and invited to complete an online questionnaire. Each was offered either course credit if they were a first-year psychology student or AU$5.00 remuneration.

Procedure. This study was entitled the "Australian National University (ANU) Students Social Life Study". In order to maintain the face validity of the study and increase the salience of the specific social group membership, participants were first asked to reflect on the type, number and quality of their social interactions with other ANU students over the past week and consider the attributes of an ANU student. Participants then completed all predictor and outcome variables (as described above). Upon completion, participants were provided with an explanation of the study and counselling phone numbers should they require them before receiving either payment or course credit.

Results

To check the consistency of the measurement model examined in Study 1, I began again by completing a principal components analysis on the four social identification items and the five perceived self-in-group prototypicality items. Using an oblimin rotation, two components with eigen values greater than one again emerged, where the two components accounted for 60.88% of the variance and corresponded to the two scales.

To further confirm the measurement model, I then conducted a confirmatory factor analysis. I first examined a single factor model in which all four social identification items and five prototypicality items were entered. The resulting measurement model showed adequate fit indices according to Kline's (2005) criteria $\chi^2(96)=56.07$, comparative fit index (CFI)=.98 and root mean square error of approximation (RMSEA)=.06, 90% CIs=.04, .07). This indicated that social identification and prototypicality scale items loaded on one factor. After scale items that

exhibited high covariance were allowed to co-vary, a two-factor solution was examined to determine if the scale items would load successfully on the latent variables. While each of the scale items loaded less parsimoniously on two factors, with model fit indices (χ^2(96)= 207.72, p<.001, comparative fit index (CFI)=.94 and root mean square error of approximation (RMSEA)=.12 , 90% CIs=.10, .13) this was still adequate model fit to assume the items loaded separately. I decided for subsequent analyses to use the scales separately, despite the CFA indicating the scale items loaded on both a single or two factor solution equally well. This was because the results of Study 1, conducted with a larger sample size more clearly indicated they scale items load separately, and the results of the PCA indicated social identification and prototypicality scale items loaded appropriately on two constructs. See Figure 12 for the path analysis for the final CFA model.
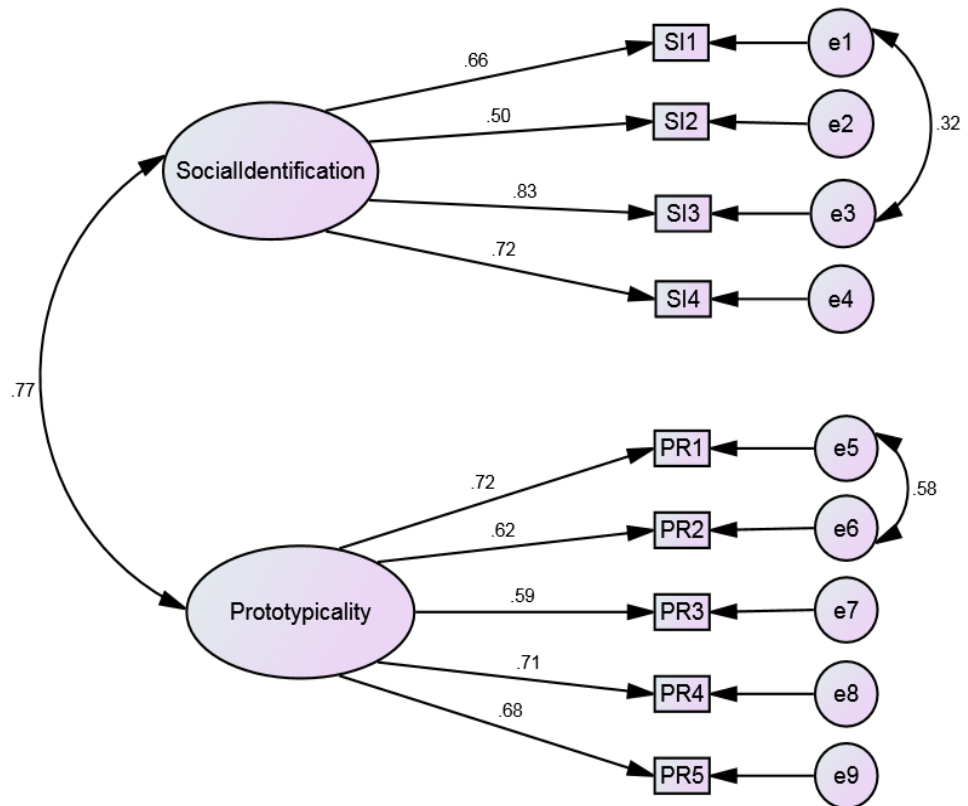
Figure 12. Study 3 Path analysis of confirmatory factor analysis of social identity and prototypicality scale items

I then calculated an average of the items within the SIS and PSIPS for each participant and the average of each of the other multi-item outcome measures for use in subsequent regression analyses. Table 8 presents Cronbach's alphas, means, standard

deviations and pair-wise correlations for each scale. Notably, the internal reliability for the social connectedness scale was relatively low; although I could have increased this reliability slightly to .68 by removing one item ("I have someone close in whom I can confide"), I decided to maintain the four-item scale to be comparable to Study 3. Consistent with the PANAS scales design, expressed positive and negative affect were independent of each other and negatively correlated. The negative psychological well-being measures all negatively correlated with positive well-being measures, but positively correlated with each other, indicating divergent and convergent validity of these measures. Social identification and prototypicality were significantly positively correlated with each of the positive well-being outcome variables and negatively correlated with each of the negative well-being outcome variables. Social identification and measured self-in-group prototypicality were also significantly correlated with each other. Therefore, I examined the collinarity statistics (tolerance and variance inflation factors (VIF)) and all were within acceptable limits (VIF < 2) indicating the assumption for multi-collinarity was met (Coakes, 2005; Hair et al., 1998).

Table 8. *Study 3 means, standard deviations, Cronbach's alphas and correlations between variables*

Scale	M	SD	α	1	2	3	4	5	6	7	8	9	10	11
1. Social Identification	5.07[a]	1.05	.77	-										
2. Prototypicality	4.12[a]	1.17	.83	.58***	-									
3. Self Esteem	4.27[a]	1.71	-----	.13	.05	-								
4. Satisfaction with Life	4.42[a]	1.36	.89	.21**	.16	.57***	-							
5. Social Support	5.02[a]	1.05	.86	.39***	.28***	.40***	.48***	-						
6. Social Connectedness	5.17[a]	0.97	.58	.47***	.21**	.36***	.33***	.51***	-					
7. Distress (DASS-21)	1.76[b]	0.57	.92	-.16	-.13	-.49***	-.59***	-.41***	-.32***	-				
8. Depression (DASS-D)	1.80[b]	0.75	.91	-.24**	-.15	-.48***	-.58***	-.39***	-.38***	.90***	-			
9. Anxiety (DASS-A)	1.59[b]	0.51	.72	-.10	-.08	-.41***	-.45***	-.29***	-.20**	.87***	.66***	-		
10. Stress (DASS-S)	1.90[b]	0.67	.83	-.08	-.10	-.41***	-.53***	-.42***	-.27***	.92***	.71***	.75***	-	
11. Negative Affect	2.26[c]	0.82	.88	-.10	-.09	-.47***	-.50***	-.27***	-.22**	.74***	.61***	.67***	.71***	-
12. Positive Affect	2.93[c]	0.77	.88	.26***	.18	.30***	.40***	.26***	.42***	-.42***	-.55***	-.25**	-.30***	-.13

*p<.05, **p<.01, ***p<.001; [a]Measured on a 1 – 7 scale; [b]Measured on a 1 – 4 scale; [c]Measured on a 1 – 5 scale.

Note: correlations between the DASS-21 and its subcomponents are inflated as the full DASS-21 includes those subcomponents

Reported social identification ($p<.001$), satisfaction with life ($p<.01$), social support ($p<.001$) and social connectedness ($p<.001$) were all significantly greater than the scale mid-point; perceived self-in-group prototypicality, self-esteem and positive affect each did not differ significantly from their respective scale mid-points. All DASS-21 scales and negative affect scales were significantly lower than their respective scale mid-points (ps$<.001$) indicating endorsement of largely non-clinical symptom levels. As in Study 2, participants had higher levels of social identification than perceived self-in-group prototypicality, $t(101)=9.20$, $p<.001$.

Again, I then conducted separate regression analyses for each outcome variable, with the same predictors for each analysis as were employed in Study 2: gender, age, English as a first language, major life stressor, relative levels of social identification, relative perceived self-in-group prototypicality and the interaction between the latter two (each mean-centred; Aiken & West, 1991). The results of these analyses are presented in Table 9.

Age served as a significant predictor of anxiety ($p<.001$); as age increased so too did anxiety scores. Women ($M= 1.92$, $SD=.62$) were significantly more likely to endorse feeling negative affect than men ($M=1.60$, $SD=.54$). Those for whom English was their first language ($M=1.84$, $SD=.55$) were significantly more likely to endorse higher levels of self esteem, than those for whom English was a second language ($M= 1.69$, $SD=.38$). Those for whom English was a second language were significantly more likely to endorse depression symptoms ($p<.01$) than those whose first language was English. Surprisingly, whether participants had a major life stressor in the past six months did not predict any outcome variables.

Similar to Study 2, relative levels of social identification served as significant predictors of five of the outcome variables: social support, social connectedness, depression and positive affect, while being marginally significant for satisfaction with life ($p=.052$). Moreover, relative perceived self-in-group prototypicality once again did *not* serve as an independent predictor of any of the outcome variables. Nevertheless, it did serve as a reliable moderator of social identification in three instances (satisfaction with life, social connectedness and positive affect). Figures 13a-c presents these moderation effects, again with values estimated at one standard deviation above and below the mean.

Table 9.

Models Tested in Study 3

Outcome Variables		AdjR^2 change	*B*	Std. Error	β	*t*	*95% CI*
1. Self-Esteem	Constant		2.18	1.57			
	Age		.09	.08	.11	1.10	-.07, .25
	Gender		.42	.36	.12	1.20	-.28, 1.1
	ESL		1.02	.51	.20	1.10*	.00, 2.03
F(4, 98)=2.03	Stressor	.04	-.00	.10	.00	-.02	-.20, .20
	Social Identification		.37	.20	.23	1.89	-.02, .76
F(6, 96)=1.86	Prototypicality	.05	-.43	.18	-.03	-.24	-.40, .32
F(7, 95)=1.97	Interaction	.06	.20	.12	.16	1.58	-.49, .43
2. Satisfaction with Life	Constant		3.84	1.23			
	Age		.04	.06	.07	.64	-.85, .17
	Gender		-.27	.28	-.10	-1.00	-.82, .27
	ESL		.26	.40	.07	.66	-.53, 1.05
F(4, 98)=1.40	Stressor	.02	-.09	.08	-.12	-1.18	-.24, .06
	Social Identification		.30	.15	.24	1.97+	-.03, .61
F(6, 96)=1.54	Prototypicality	.03	.05	.14	.04	.35	-.23, .33
F(7, 95)=2.26*	Interaction	.08	.09	.25	.25	2.47**	.05, .42
3. Social Support	Constant		4.12	.91			
	Age		.05	.05	.11	1.10	-.04, .14
	Gender		.03	.21	.02	.17	-.37, .44
	ESL		.32	.30	.10	1.09	-.27, .91

		R^2	B	SE	β	t	95% CI
$F(4, 98)=1.09$	Stressor	.00	-.05	.06	-.09	-.95	-.16, .06
	Social Identification		.38	.11	.39	3.30**	.15, .60
$F(6, 96)=3.77^{**}$	Prototypicality	.14	.06	.11	.07	.56	-.15, .27
$F(7, 95)=3.32^{**}$	Interaction	.14	.06	.07	.08	.83	-.08, .20
4. Social Connectedness	Constant		5.61	.79			
	Age		-.03	.04	-.06	-.64	-.11, .06
	Gender		-.15	.18	.07	.82	-.21, .50
	ESL		.26	.26	.09	1.02	-.25, .77
$F(4, 98)=1.15$	Stressor	.01	-.03	.05	.06	-.63	-.13, .07
	Social Identification		.54	.01	.60	5.48***	.35, .74
$F(6, 96)=5.42^{***}$	Prototypicality	.21	-.08	.09	-.09	-.86	-.26, .10
$F(7, 95)=6.26^{***}$	Interaction	.27	.18	.06	.27	2.95**	.06, .30
5. Depression (DASS-D)	Constant		2.97	.67			
	Age		-.05	.04	-.16	-1.55	-.12, .02
	Gender		.21	.15	.14	-1.41	-.51, .09
	ESL		-.38	.22	-.17	-1.76	-.82, .05
$F(4, 98)=1.98$	Stressor	.04	.03	.04	.07	.66	-.06, .11
	Social Identification		-.21	.08	-.30	-2.48*	-.38, -.04
$F(6, 96)=2.77^{*}$	Prototypicality	.09	-.02	.08	-.03	-.24	-.17, .14
$F(7, 95)=2.55^{*}$	Interaction	.10	-.06	.05	-.11	1.09	-.16, .05
6. Distress (DASS-21)	Constant		2.74	.53			
	Age		-.05	.03	-.17	-1.66	-.10, .01
	Gender		-.19	.12	-.16	1.58	-.43, .05

	ESL		-.20	.17	-.11	-1.13	-.54, .15
$F(4, 98)=1.85$	Stressor	.03	.02	.03	.07	.68	-.04, .09
	Social Identification		-.13	.07	-.23	-1.88	-.26, .01
$F(6, 96)=2.11$	Prototypicality	.06	-.04	.06	-.07	-.06	-.16, .09
$F(7, 95)=2.21^{**}$	Interaction	.08	-.07	.04	-.17	-1.62	-.15, .02
6. Anxiety (DASS-A)	Constant		2.69	.49			
	Age		-.05	.03	-.21	-2.04^*	-.10, -.00
	Gender		-.08	.11	-.07	-.69	-.29, .14
	ESL		-.03	.16	-.02	-.17	-.34, .29
$F(4, 98)=1.22$	Stressor	.01	.01	.03	.02	.17	-.06, .07
	Social Identification		-.09	.06	-.18	-1.46	-.21, .03
$F(6, 96)=1.28$	Prototypicality	.02	.03	.06	-.06	-.48	-.14, .09
$F(7, 95)=1.50$	Interaction	.03	-.06	.04	-.17	-1.63	-.14, .01
7. Stress (DASS-S)	Constant		2.59	.63			
	Age		-.03	.03	-.10	-.98	-.10, .03
	Gender		.28	.14	-.20	1.96^+	-.56, .00
	ESL		-.18	.21	-.09	-.86	-.58, .23
$F(4, 98)=1.79$	Stressor	.03	.04	.04	.09	.89	-.04, .11
	Social Identification		-.08	.08	-.13	-1.09	-.24, .08
$F(6, 96)=1.54$	Prototypicality	.03	-.06	.07	-.10	-.80	-.20, .09
$F(7, 95)=1.74$	Interaction	.05	-.08	.05	-.17	-1.67	-.18, .15
8. Negative Affect	Constant		2.85	.77			
	Age		-.01	.04	-.04	-.37	-.09, .06

	Gender		-.47	.17	-.27	-2.75**	-.82, -.13
	ESL		-.06	.25	-.02	-.23	-.55, .44
$F(4, 98)=1.77$	Stressor	.03	-.01	.05	-.01	.91	-.10, .09
	Social Identification		-.14	.10	-.17	-1.41	-.33, .06
$F(6, 96)=1.69$	Prototypicality	.04	-.07	.09	-.09	-.74	-.24, .11
$F(7, 95)=2.04$	Interaction	.07	-.12	.06	-.20	-1.97+	-.23, .00
9. Positive Affect	Constant		1.88	.68			
	Age		.05	.04	.16	1.54	-.02, .12
	Gender		.07	.15	.04	.43	-.24, .37
	ESL		.22	.22	.09	.33	-.22, .66
$F(4, 98)=1.39$	Stressor	.01	-.04	.04	-.10	-1.04	-.13, .04
	Social Identification		.24	.09	.33	2.79**	.07, .41
$F(6, 96)=2.41^*$	Prototypicality	.08	.03	.08	.05	.39	-.13, .19
$F(7, 95)=2.97^{**}$	Interaction	.12	.12	.05	.24	2.38**	.02, .23

$^+p<.10,\ ^*p<.05,\ ^{**}p<.01,\ ^{***}p<.001$

For "ESL", English as a second language was coded as 1 and English as a first language was coded as 0.

For gender, male was coded 0 and female was coded 1.
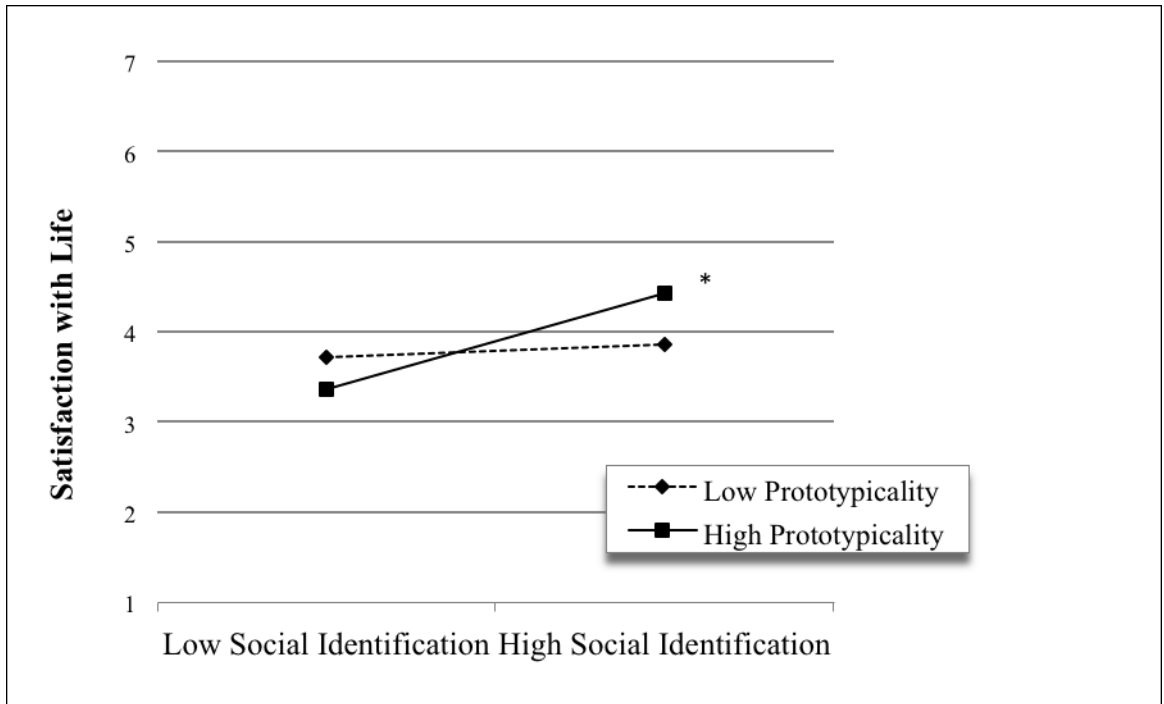
Figure 13a. Study 3 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on satisfaction with life

Note: * denotes significant slope
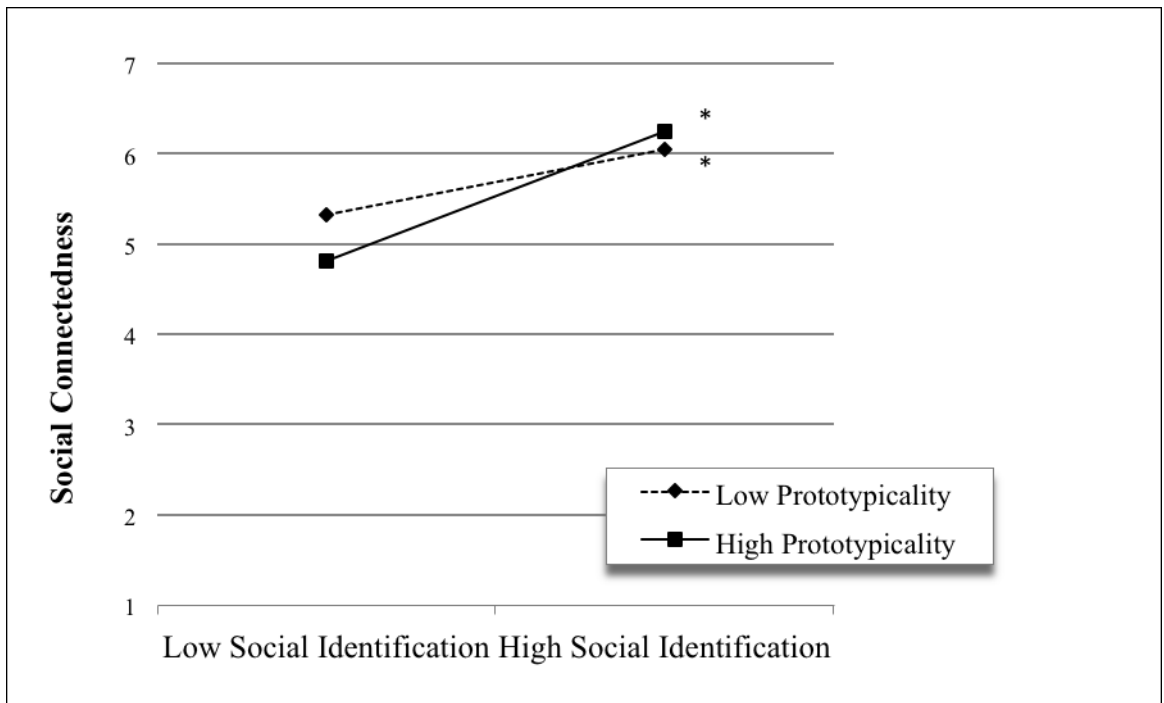
Figure 13b. Study 3 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on social connectedness.

Note: * denotes significant slope
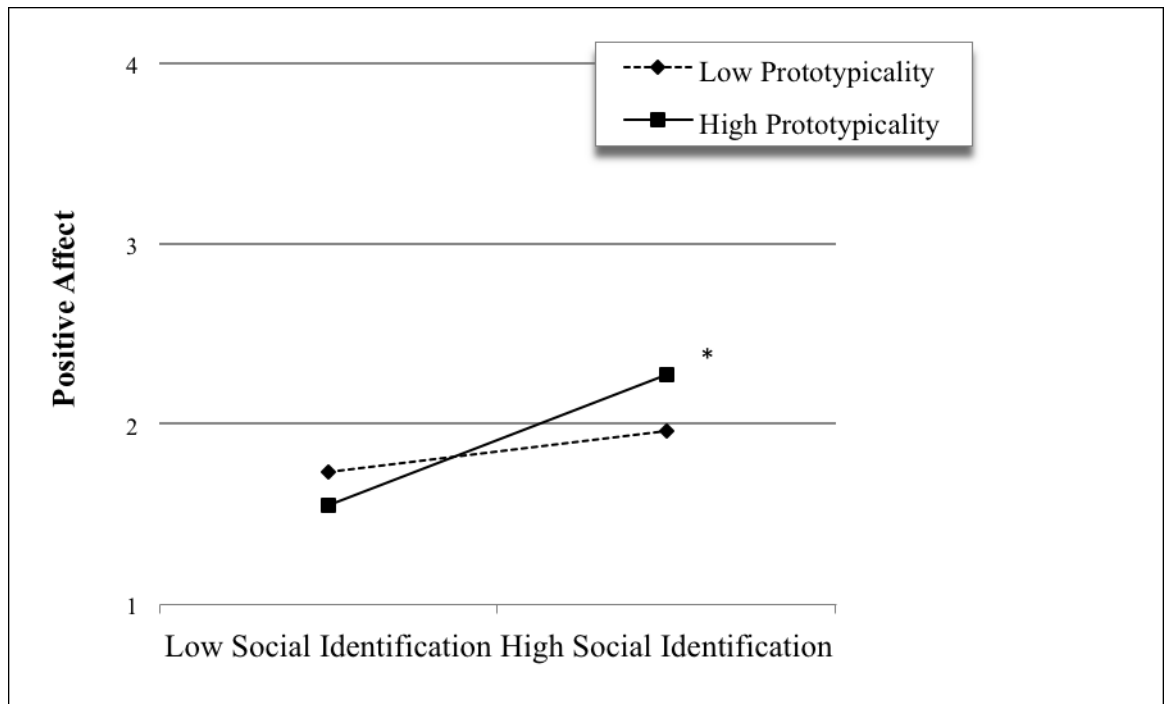
Figure 13c. Study 3 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on positive affect

Note: * denotes significant slope

As can be seen, in each instance the positive relationship between social identification and the outcome variable is stronger when participants also perceive themselves as having relatively high self-in-group prototypicality. For satisfaction with life, the slope of the line for higher perceived self-in-group prototypicality ($t(101)$=2.73, p<.01) was statistically significant, but not the slope for lower prototypicality ($t(101)$=.43, p=.66). Higher prototypicality *enabled* the positive effect of social identification on satisfaction with life to be revealed. For perceived social connectedness, both the slope for the line for higher prototypicality ($t(101)$=5.73, p<.001) and lower prototypicality ($t(101)$=3.46, p<.001) were significant. The significant interaction, however, indicates that prototypicality *enhanced* the positive relationship between social identification and social connectedness. For positive affect, the slope for the line for higher prototypicality ($t(101)$=3.33, p<.001) was significant but not for lower prototypicality ($t(101)$=1.25, p=.24). Relatively higher levels of prototypicality *enabled* the positive effect of social identification on positive affect to be revealed. Overall, relatively higher social identification positively predicted perceptions of satisfaction with life, social connectedness and positive affect. It appears the

increased relative in-group prototypicality, when combined with high social identification, afforded ANU students with higher psychological well-being. These results were consistent with those found in Study 2, except now we find a significant moderation effect for more direct measures of psychological well-being such as satisfaction with life and positive affect. However, there was no significant moderation effect for either measures of depression in either study. Because Study 3 employed a different social identity from that in Study 2 (i.e. university student rather than university hall resident identity) these results additionally suggest that, for different social identities, perceived self-in-group prototypicality may have different effects on psychological well-being. Overall, the results of Study 3 further support the findings of Study 2, that prototypicality is an important moderator of the social identification – psychological well-being relationship as it was not simply *enhancing* the intensity of the relationship between social identification and positive well-being, but was *enabling* it to emerge.

Discussion Study 3

The results of Study 3 provide support for H2, with a significant main effect for social identification found for three of the outcome variables and a marginal effect on a fourth. There was no evidence to support H3, as no main effect for prototypicality on any of the outcome variables was revealed. In support of H4, the results of Study 3 show prototypicality significantly moderated the positive relationship between social identification and satisfaction with life, social connectedness, and positive affect. Interestingly only a marginally significant moderation effect was found for the negative well-being measure (negative affect), but not for the clinical screening measure of distress, depression, anxiety, stress (DASS-21).

General Discussion

I set out in the current chapter to evaluate the predictive role of relative levels of social identification and perceived self-in-group prototypicality on various measures of psychological well-being. From previous research (e.g., Gleibs et al., 2011), I anticipated that social identification would serve as a significant predictor of this well-being. The potential role of perceived self-in-group prototypicality, however, represented a novel step forward. Although the concept of relative in-group

prototypicality is well grounded in extant theory (e.g., McGarty, 1999; Turner et al., 1987) and research (e.g., Koivisto, Lipponeen, & Platow, 2013; Platow, van Knippenberg, Haslam, van Knippenberg & Spears, 2006), how precisely it might be related to the outcome measures has not been examined before. However, drawing on previous findings in the literature I could hypothesise that there could be both main effects and interactions. Specifically, I suggest that higher levels of both social identification and prototypically, either separately or multiplicatively, would predict positive psychological well-being. In the end, the results of the two studies confirmed the previous findings of a positive relationship between social identification and psychological well-being. Moreover, perceived self-in-group prototypicality enhanced these positive effects on several measures, including social support (in Study 2), satisfaction with life and positive affect (in Study 3) and social connectedness (in Studies 2 and 3). Indeed, without including perceived self-in-group prototypicality, the full impact of social identification processes would not be revealed. Clearly, not only is it beneficial to identify with one's social group, it is also beneficial (at least to those who *do* strongly identify) to see oneself as a prototypical member of that group.

There are at least four key features of the patterns of data observed thus far. First, social identification and perceived self-in-group prototypicality (as conceptualized in this thesis at least) can, in fact, be separately measured. Second, social identification remains an independent predictor of positive psychological well-being across a variety of outcome measures. In contrast, relative perceived self-in-group prototypicality had no independent effects. Third, relative perceived self-in-group prototypicality tended to moderate social identification effects more on socially-oriented measures (support and connectedness) and positive well-being measures (positive affect). And fourth, both the social identification main effect and the interactions with perceived self-in-group prototypicality varied as a function of the salient in-group. This suggests that the nature and meaning of the in-group are likely to function as a further moderator of the observed effects. Below I consider each of these, excluding the separate measurement of social identification and prototypicality which was discussed at length in the preceding chapter.

On its own, participants' relative levels of social identification currently played a prominent role in predicting psychological well-being in both studies. Indeed, social identification was a significant predictor of every outcome variable in Study 2 (four

positive well-being measures and one negative well-being measure (depression)). In Study 3, social identification predicted three positive well-being outcome variables and a different measure of depression. This is wholly consistent with the original observations that social identities afford individuals certain benefits that enhance their psychological well-being.

At the same time, although I was able to measure it separately, perceived self-in-group prototypicality alone made no independent contribution to any well-being measure in either study. This is an intriguing finding when we further interrogate the prototypicality concept. On the one hand, relative in-group prototypicality represents an aspect of a person *as a group member*; the concept itself (and our current operationalization of it) is inexorably tied to group membership, so that in the absence of group membership in-group prototypicality simply makes no sense. It *is* a psychological-group concept. On the other hand, there is an element of individuation bound to the concept. Certainly the manner of the current operationalization asked participants to judge themselves *relative* to other in-group members. The absence of a prototypicality main effect, then, reaffirms the broader social identity analysis by highlighting the importance of social identification above individuation, even individuation within the context of a group. Individuation within the context of a group appears to be important *only* when people already highly identify with that group; on its own, individuation – or, at least, this type – appears impotent to effect psychological well-being outcomes. This is a remarkably challenging contention, as both social and clinical psychology remain highly individualistic (Jetten et al., 2012; Platow & Hunter, 2014; Turner & Oakes, 1986). I would not want to overstate my position here, as individualistic analyses have progressed both fields substantially. Nevertheless, if seen as part of a broader nomological net, the *absence* of a prototypicality main effect can potentially validate further the relative power of collectivistic processes. Once again, this is consistent with the social identification analysis presented in this thesis, that social group membership comes to influence psychological well-being *only* when individuals identify as a group member *and* the nature of this effect alters depending on the degree to which one sees oneself as a prototypical group member.

So when *did* perceived relative self-in-group prototypicality moderate the effects of social identification? While in Study 2 we only find significant multiplicative effects for social support and social connectedness; in Study 3, we additionally find this effect

for two direct well-being measures, namely positive affect and satisfaction with life. Participants were most satisfied with life, felt good and perceived themselves as having more social resources when they were relatively highly in-group prototypical of a group with which they identified highly. For these people, their group membership was likely to be particularly and powerfully self-defining, affording them happiness and satisfaction. However, as noted above, consistent across the two studies, the two outcome variables for which an identification-prototypicality interaction was observed were both socially-oriented. On the one hand, this might seem like a relatively trivial finding as social-oriented predictors predict socially-oriented outcomes. On the other hand, it is a direct confirmation of Cruwys et al.'s (2014, p. 219) hypothesis that, "social identification will determine the impact of the various social factors (e.g., social support) that are implicated in depression." We know already that social support and social connectedness have positive consequences for mental health (Cohen & Wills, 1985; Kessler & McLeod, 1985; Lee & Robbins, 1998). The current findings, however, point to (a) a path to support and connectedness that (b) is *not* associated with *interpersonal* social-psychological processes. These interpersonal processes may well remain important, but we have long known that a separate collectivistic path yields positive outcomes for both organizations (Haslam, van Knippenberg, Platow & Ellemers, 2014) and their leaders (Haslam, Reicher & Platow, 2011), and individuals and their productivity (Wegge & Haslam, 2003), motivation (Haslam, Powell & Turner, 2000) and their self-esteem (Platow, Byrne & Ryan, 2005). That collectivistic path emerged again as an important component of support and connectedness.

Finally, an obvious outcome of the two studies is the simple fact that the exact same patterns of significant and non-significant effects did not emerge in both. Certainly, social identification and the moderating role of in-group prototypicality were important in both. This was consistent across both studies, along with the finding of no main effect for prototypicality. We also see both studies reveal a significant moderation effect of prototypicality on social identification for social connectedness. However, only in Study 2 do we find the effect for social support and in Study 3 we additionally find the effect for satisfaction with life and positive affect – more direct measures of psychological well-being. Interestingly, in both studies we find no significant moderation effects for the different negative well-being measures. However, in Study 3 we do find a marginally significant moderation effect for negative affect, whereby as social identification increased and prototypicality increased negative affect, was found

to decrease. This suggests we may still find effects for negative psychological well-being variables, particularly for those who are highly identified but do not see themselves as prototypical, or for negative social identities. Because the primary difference between Study 2 and Study 3 was the salient social identity, this also could explain the difference in significant moderation effects across the two studies. It is a fundamental premise of the social identity approach that groups with which people identify vary in their normative meanings (Turner et al., 1987). This has been confirmed empirically in analyses of schisms (Sani & Reicher, 1998), in-group projection (Wenzel et al., 2003), in-group dissent (Crane & Platow, 2010) and stereotyping (Oakes, Turner & Haslam, 1994). So, while the fundamental principles underlying a relationship between social identification and well-being may remain true (e.g., Cruwys et al., 2014; Jetten et al., 2012), the very meaning of the groups with which people identify may moderate those processes. In the current studies more consistent relationships were observed in the context of a broader university than a dormitory residence. These two group contexts vary not only in their likely normative content (e.g., "home" vs. "study"), but also along other dimensions such as inclusiveness (Brewer, 1991), and even interpersonal friendships (the points above not withstanding). This means that inconsistency in exact patterns does not necessarily translate into a replicability problem. It simply points to other social and psychological processes that need to be considered in future work.

Conclusion

Despite the two caveats discussed above, the two studies that were presented in the current chapter provide strong evidence in support of a social identity analysis of psychological well-being. Enhanced levels of social identification were associated with relatively positive well-being across a variety of measures in both studies. Moreover, and as a novel contribution of the current work, these positive effects were enhanced multiplicatively on several measures when people also saw themselves as relatively highly in-group prototypical. The effects of relative perceived self-in-group prototypicality do not seem to emerge independently of social identification but, instead, are predicated upon and facilitate the effects of social identification. Not only is identifying strongly with a salient psychological (and positively valenced) group good for us, but seeing ourselves as relatively prototypical of that group enhances our well-being even further.

CHAPTER 8

Studies 4 and 5: Investigating the effect of manipulating perceived self-in-group prototypicality on an group members' psychological well-being

Chapter Overview

In the previous chapter I presented results from two studies that provided preliminary support for the conceptual underpinnings of this thesis, specifically, that prototypicality is an important moderator of the effects of social identification on psychological well-being. I now build upon the primary findings of these studies to further test the hypotheses related to the nature of the relationship between social identification, prototypicality and psychological well-being. I report two studies (Studies 4 and 5 of this thesis) that examine these same variables, but this time using an experimental study design. Specifically, in these studies I undertook to determine if an individual's perceived self-in-group prototypicality could be manipulated experimentally, and, if so, whether this manipulation could further reveal any causal effects of higher or lower self-perceived prototypicality on the relationship between social identification and psychological well-being. In both samples, the ANU student identity was made salient.

To manipulate perceived self-in-group prototypicality, in both studies I provided false feedback to participants about their degree of prototypicality as determined by their completion of two different tasks. Each task purported to measure the individual's own perceptions of their degree of 'typicality' as an ANU Student. At the same time, I also measured self-in-group prototypicality explicitly to determine if the effect of the manipulation could also be predicted by changes on the PSIPS. For the explicit measure of prototypicality though, this time I specified a lower status out-group comparison in Study 4 (i.e., Technical college (TAFE) student) as the comparison out-group, while in Study 5 I kept the broadly specified out-group comparison (i.e., students from other institutions). This was done to additionally explore if differences between comparative out-groups would have any effect on prototypicality judgments and consequentially its effects on psychological well-being. As previously stated, we know comparative

context has important implications for social identity processes. We also know that perceptions of status differences between groups can have implications for an individual's psychological well-being (O'Brien & Major, 2005) and generally it can be more detrimental to psychological well-being of members of low status groups when they compare themselves to higher status groups (Wolf et al. 2010). Thus, while it would be equally valid to examine the effects of either a high or low status out-group as the comparison out-group, in the current study a low status out-group was chosen as the comparison out-group simply to explore any possible effects.

Method

Two experimental studies, with two samples of university students were conducted, manipulating prototypicality via two different strategies. The primary dependent measures were the same for both studies.

Measures Used

Because the same measures that were used in Studies 2 and 3 were employed for Studies 4 and 5, I only summarise and report below the differences in measures used particular to Studies 4 and 5. For a full description of the scales themselves and the items, please refer to the previous chapter of this thesis.

Independent Measures

The primary independent measures employed across these two samples were a self-report measure of social identification (SIS) and the experimental manipulation of perceived self-in-group prototypicality (as provided by bogus feedback following participants completion of a task). Before beginning the experiment participants were randomly assigned to one of two between subjects conditions: *low prototypicality* and *high prototypicality*.

Prototypicality Manipulation

In each sample, participants completed a bogus task, which purported to measure the degree to which individuals saw themselves as 'typical' ANU students. While the tasks were slightly different in each sample, both (described below) essentially involved assigning attributes to different categories, including the salient social identity of ANU Student. This both assisted in making the ANU Student social identity salient and provided face validity to the false feedback provided, which constituted the prototypicality manipulation.

Upon completion of the task, participants were provided with bogus feedback about their degree of prototypicality depending on the condition they were assigned to. The feedback was presented in the same format for both studies (i.e. written and graphical representation) and either indicated the participant was *low in prototypicality* or *high in prototypicality.* The format of the presentation of the prototypicality feedback was derived from previous studies that have attempted to manipulate perceptions of leader prototypicality (Hogg, 2001; Platow & van Knippenberg, 2001). In Study 4, participants randomly assigned to the *low prototypicality condition* were presented with the information presented in Figure 14, while those randomly assigned to the *high prototypicality condition* were presented with the information presented in Figure 15 below. In Study 5, the bogus feedback was presented in the same format but with the comparison group being 'students from other institutions'.

There are a number of features of the design of the feedback that were specifically included to enhance the believability of the manipulation that I wish to draw attention to here. Firstly, as can be seen, there is considerable emphasis given to explaining what the score means and the fact that the score might not be what the participant expects. This is because it was important to increase the participants' beliefs that the level of prototypicality they were told the test determines is accurate, particularly because it may be different from how they actually felt. This is, of course, a very difficult thing to do successfully. There is always a high likelihood that when the bogus feedback is presented, participants will reject it, make explanations or react defensively because that is not how they see themselves (e.g., being told they are different to how they see themselves could represent a threat to their identity). Secondly, the out-group comparison (Study 4 – TAFE Student, Study 5 – students from another institution) was explicitly included in the feedback to increase the comparative out-groups salience. This enabled me to explore if differing out-group comparisons (comparative fit) had an effect on determining self-in-group prototypicality judgements. Finally, the visual depiction of the position of the participant's typicality rating in relation to the 'majority' of group members highlights to the participant their intragroup position in relation to others, as either peripheral or central. Each of these features of the manipulation feedback were employed to enhance the believability of the (bogus) feedback.

RESULTS
Prototypicality Level: LOW

Among other things, having a **LOW** prototypicality level means you are more like other TAFE students than ANU students, this suggests:

- deep down, on a subconscious, fundamental level, **you DO NOT see yourself as a Prototypical ANU student**

- even if you had not realized it before this experiment, **you see yourself as more similar to TAFE Students than other ANU Students.**

- you have more in common with TAFE Students than ANU Students
- when push comes to shove, **you feel you have more influence with TAFE Students than ANU Students**,

Things to remember:

- Attributing words related to a group with certain self-categories, as measured with the IAT, has been shown to tap into psychological processes that fall outside people's conscious thought processes.
- We recognise that these findings may sometimes come as a surprise to our participants, but there is no reason to see these results as any less valid.
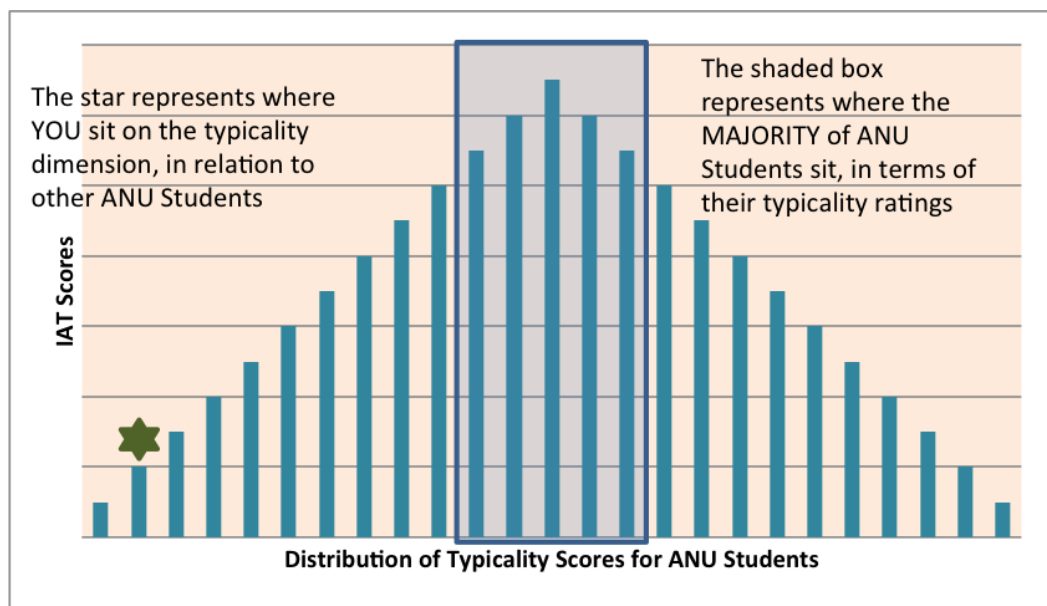
From the graph above, you can see that:
- your score fell OUTSIDE the range of that recorded by the majority of ANU Students (indicated by the shaded box)
*- you have a **very low typicality rating***

Among other things, this means that you:
*- **do NOT embody many of the qualities that typify an ANU Student***
*- **do NOT have a lot of influence with other ANU students compared to TAFE students***
- are on many dimensions**, more **similar to a TAFE student

Figure 14. Study 4 and 5 Prototypicality manipulation materials – low prototypicality condition (note: different comparison group specified in Study 5 version)

RESULTS
Prototypicality Level: HIGH

Among other things, having a **HIGH** prototypicality level means you are more like other ANU students than TAFE students, this suggests:
- deep down, on a subconscious, fundamental level, **you see yourself as a Prototypical ANU student**

- even if you had not realized it before this experiment, **you see yourself as more similar to other ANU Students than TAFE Students.**

- you have more in common with ANU Students than TAFE Students
- when push comes to shove, **you feel you have more influence with ANU Students than TAFE Students**,

- and, **it is likely that it would feel good if someone to described you as an ANU Student**

Things to remember:

- Attributing words related to a group with certain self-categories, as measured with the IAT, has been shown to tap into psychological processes that fall outside people's conscious thought processes.
- We recognise that these findings may sometimes come as a surprise to our participants, but there is no reason to see these results as any less valid.
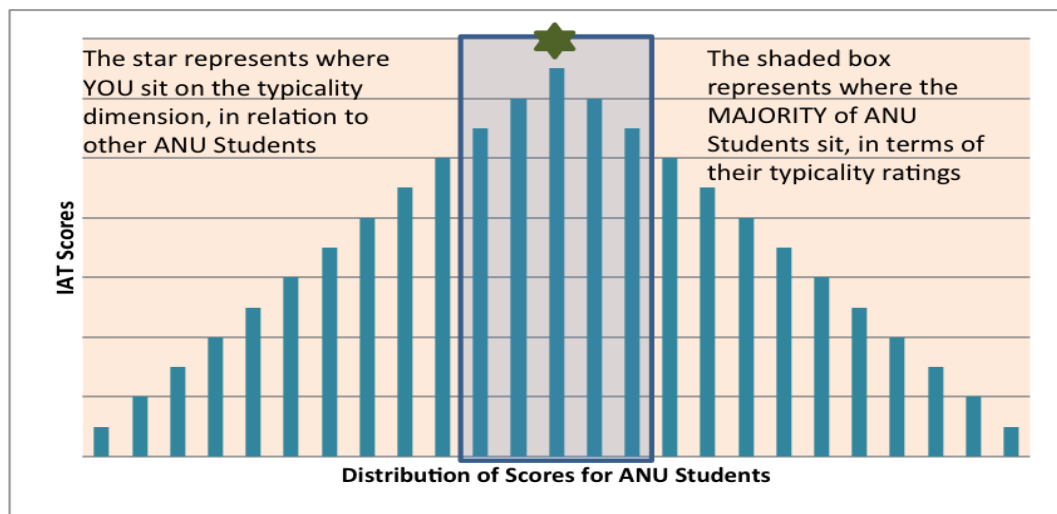
From the graph above, you can see that:
- your score fell INSIDE the range of that recorded by the majority of ANU Students (indicated by the shaded box)
*- you have a **very high typicality rating***

Among other things, this means that you:
*- **embody many of the qualities that define ANU Students***

*- **have more in common with other ANU Students compared to TAFE students***
-** are on many dimensions**, you are more similar to an ANU Student than a TAFE student

Figure 15. Study 4 and 5 Prototypicality manipulation materials – high prototypicality

condition (note: different comparison group specified in Study 5 version)

The two bogus tasks participants completed also differed between Study 4 and 5. In Study 4, the task participants completed was structured after the Implicit Attitudes Test (IAT) (developed by Greenwald, McGhee & Schwartz, 1998). The IAT has been extensively used in social psychological research as it measures implicit associations between concepts by measuring differences in reaction time when participants categorize words or images. I adopted the structure of the IAT, a measure of *implicit* attitudes, to provide some face validity to why the prototypicality feedback provided to participants might have differed from their own perceptions of their degree of prototypicality. The task's purpose and procedure were explained to the participants before they began. Participants were told that the IAT was designed to measure the degree to which they saw themselves as a prototypical ANU student. Participants then assigned stimulus words (presented in the centre of the screen) to either the category 'Self' or 'Other' and 'ANU Student' or 'TAFE Student' (presented at the top right or left side of the screen in various combinations). They did this by pressing the corresponding key on either the right or left side of the keyboard. They were informed they needed to work as quickly as possible throughout the task as their reaction time was being measured. They were also told that the IAT, in this way, measures sub-conscious attitudes, below their level of awareness. The IAT was specifically chosen for this inherent quality, as it was considered more likely to enhance participants' acceptance of being randomly told how they feel about themselves (i.e. self perceptions of prototypicality). If the attitudes measured in the IAT were believed to be sub-conscious, then there may have been a greater chance that participants would believe what they were told, even if it conflicted with their conscious beliefs.

In Study 5, participants completed a Personal Attributes Test (PAT), a bogus test developed by the author for the purpose of this study in an attempt to manipulate perceived self-in-group prototypicality. Participants were informed the PAT measured how 'typical' a group member they were by informing them that: "People vary in terms of their typicality, which is the degree to which they have qualities that best capture what it means to be a member of the group and not a member of another group". They were told their responses on the three sections of the PAT - rating their personal attributes, rating the attributes of typical ANU Students, and rating the attributes of an ideal ANU Students - would be compared to determine their personal "typicality" score, which they would be provided feedback at the completion of the task. Like the IAT, the PAT attempted to manipulate individual's self-perceptions.

Participants were presented with 21 target words which described desirable and undesirable personal attributes. They were then required to rate the degree to which each target word (e.g., logical, thoughtful, imaginative) was "descriptive of me". Participants responded by dragging a bar on a sliding scale (presented on the screen). The scale ranged from 0 = "*not at all*" to 100 = "*extremely*". Participants then rated another 14 target words (e.g., extraverted, critical, dependable, anxious) as to what degree each word describes a 'typical' ANU Student; and finally they rated an 'ideal' ANU Student, on the same scale. The PAT task was developed for the purpose of this thesis as an alternative to the IAT and its design conceptually drew upon a number of approaches, including the self-concept (McConnell, 2011), self-discrepancy (Higgins, 1987) and self-complexity (Linville, 1985/1987) literatures. These approaches suggest an individual's self-concept is comprised of salient attributes (McConnell, 2011) and people feel better about themselves when they see their 'actual' attributes as matching the attributes of the 'ideal' self (Higgins, 1987). Consistent with these perspectives, the PAT asked participants to rate attributes of the self and the social group (ANU student) and then purported to develop a typicality score based on the discrepancy between their responses. Also, the target words chosen for use in the PAT were adapted from those used in the self-complexity card sorting task (Linville, 1985/1987; Koch & Shepperd, 2004). These words were adapted in regards to the specificity, valence and contextual meaning of the words, as suggested by Showers (1999) and Rafaeli-Mor, Gotlin and Revelle (1999). As a result, participants were expected to accept being randomly told how they feel about themselves (i.e. self perceptions of prototypicality).

Following completion of the IAT and PAT and presentation of the feedback that attempted to manipulate the participants' degree of self-in-group prototypicality (see Figures 14 and 15), participants were asked to confirm if they were either "Low in Prototypicality" (coded as "0") or "High in Prototypicality" (coded as "1"); this served as a manipulation check. In addition, participants were then asked an open-ended question about how they felt about the feedback provided. This provided some qualitative evidence that some participants did not like being provided feedback that they were non-prototypical as some responded somewhat defensively with comments like " I don't care really", whereas, some who received feedback that they were highly prototypical were more likely not to respond at all. In some instances participants' responses also indicated that they understood the meaning of prototypicality, and the term was not overly 'technical'. Of course, the feedback provided in the IAT and PAT

was also designed to make it easier to understand this concept by using visual and simplified words (see Figures 14 and 15).

I then measured the second (non-manipulated) independent variable, the degree to which participants identified as an ANU Student. The same four-item social identification scale (SIS) used in Studies 2 and 3 was used to measure this construct. Participants then also completed the perceived self-in-group prototypicality scale (PSIPS). This measure served two purposes. First, it provided an additional manipulation check in that it enabled me to determine if the manipulation had been successful in changing actual self-perceptions. Second, it was also employed for use in other analyses. For the manipulation to be considered successful, I considered those assigned to the high prototypicality condition would report higher scores on the PSIPS then those in the low prototypicality condition. Participants responded to each item of both the SIS and PSIPS on the same 7-point Likert scale ranging from *strongly disagree* to *strongly agree*.

Psychological Well-being Measures

For both samples, I included two measures of psychological well-being (positive affect, satisfaction with life), two measures of social coping (perceived social support, social connectedness; Branscombe et al., 1999; Cobb, 1976; Cornwell & Waite, 2009), and six measures of psychological distress (distress, 2 measures of depression (DASS-21 and CES-D), anxiety, stress and negative affect). All measures were consistent across the two samples with the measures used in Study 2 and 3 more fully described in the previous chapter of this thesis.

Immediately following the manipulation and completion of the SIS and PSIPS scales, participants completed a measure of state affect, both positive and negative, the Positive and Negative Affect Scale (PANAS) (Watson, Clark & Tellegen, 1988). Participants responded to 10 randomly presented words representing both positive or negative emotions and were asked to indicate the degree to which they felt this emotion currently on a five-point scale ranging from: *very slightly, slightly, somewhat, extremely* to *very extremely*.

Next I used the five-item Satisfaction with Life Scale (SWLS) developed by Diener et al. (1985), the four item perceived social support scale (adopted from Jetten et al. (2012, p. 351), and the four item social connectedness scale (Reicher & Haslam, 2006) (adapted from a measure of social isolation).

I then included commonly employed clinical measures of psychological distress, including stress, anxiety and depression. These were measured using the DASS-21 and its three subscales (Lovibond & Lovibond, 1995). Participants rated the degree to which each of 21 symptom-defining statements has applied to them over the last week, using a four-point scale from 1 ("never") to 4 ("always"). I also included in each sample, the Centre for Epidemiological Studies Rating Scale for Depression (CES-D) (Radloff, 1977). Participants responded using a four-point scale ranging from 1 ("rarely") to 4 ("most of the time"). These measures were specifically employed to further determine which measure of depression would yield results. I wished to further investigate the differential effects that these scales had shown across Studies 2 and 3.

Covariates

In addition to the above variables, age, gender and a single-item measuring the experience of a major life-stressor in the previous six months also served as covariates in all analyses. One final covariate included was whether participants' first language was English, given that many of the students sampled at our English-speaking university did not have English as their first language. Finally, participants also answered demographic questions, including their ethnicity and nationality.

Study 4

Method

Participants. Forty-five male and eighty female (N=125) Australian National University students voluntarily participated in this study. Ages ranged from 17 to 39 years (median=19 years). Of the one hundred and twenty-five participants who completed the experiment, 97 (77.6%) reported English was their first language. Participants were recruited on-campus and received either $5 or course credit for their involvement.

Procedure. The experiment was entitled the "ANU Students' Well-being Study" and was administered on-line using Qualtrics software. Participants were told the purpose of the study was to determine the impact various social factors have on their well-being. Participants were asked to compete the mock IAT described above (not administered in a lab); again, this reported to measure the degree to which the participant was a typical ANU Student. Upon completion of this task, participants were

then presented with feedback (see Figures 14 and 15), and told the test showed they were either high or low in degree of prototypicality as an ANU Student. Participants then completed all the other measures described previously in Chapter 7. Upon completion, participants were provided with an explanation of the study and counselling phone numbers in case they required them.

<div align="center">Results</div>

I began by completing a principal components analysis on the four social identification items and the five perceived self-in-group prototypicality items. Using an oblimin rotation, two components with eigen values greater than one again emerged accounting for 65.2% of the variance. These two components largely corresponded to the two scales, except in the case of the last two social identity scale items ("I see myself as (group name)" and "I am pleased to be a member of (group name)"), which either loaded on the other component or equally on both. In addition, the first PSIPS item ("I feel more similar to other (in-group name) than I do to non-(in-group name)") also equally loaded on both components positively.

So, to further test the measurement model, whereby items assessing social identification and prototypicality loaded on their corresponding yet distinct factors, I conducted a confirmatory factor analysis. I first examined a single factor model in which all four social identification items and five prototypicality items were entered. The resulting measurement model showed inadequate fit indices according to Kline's (2005) criteria $\chi^2(124)=229.69$ comparative fit index (CFI)=.68 and root mean square error of approximation [(RMSEA)=.25, 90% CIs=.22, .28)]. This indicated that social identification and prototypicality scale items loaded on more than one factor. So, a two-factor solution was examined after scale items that exhibited high covariance were allowed to co-vary. In the final model, each of the items clearly loaded on the related latent variables and model fit indices ($\chi^2(124)=107.08$, p<.001, comparative fit index (CFI) =.96 and root mean square error of approximation (RMSEA)=.08 , 90% CIs=.07, .10) were greatly improved. See Figure 16 for the path analysis for the final CFA model.
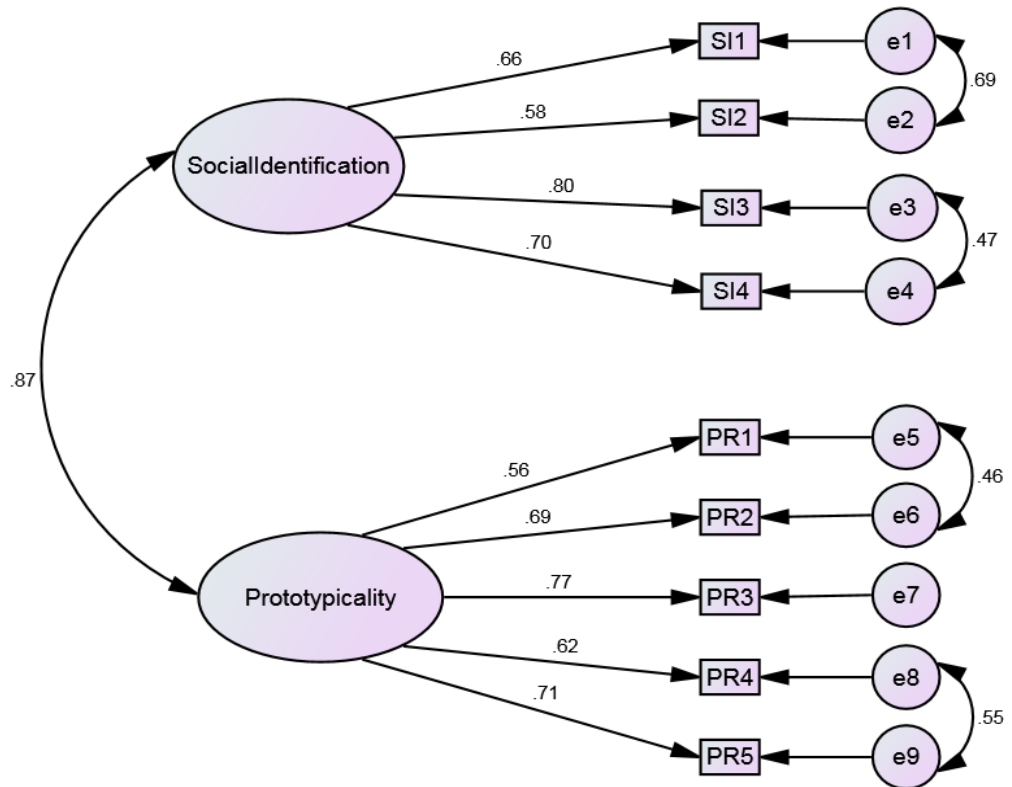
Figure 16. Study 4 Path analysis of confirmatory factor analysis of social identity and prototypicality scale items

I then calculated an average of the items within the SIS and PSIPS for each participant and the average of each of the other multi-item measures that were used. Table 10 presents Cronbach's alphas, means, standard deviations and pair-wise correlations for each scale. Average scores on social identification ($p<.001$), satisfaction with life ($p<.01$), social support ($p<.001$) and social connectedness ($p<.01$) were all

significantly greater than the sale mid-point; positive affect, negative affect, stress, anxiety, depression and distress, were significantly lower than their respective scale mid-points (ps<.001). As in Studies 2 and 3, the negative psychological well-being measures all negatively correlated with positive well-being measures, but positively correlated with each other, indicating divergent and convergent validity.

Table 10. *Study 4 Means, standard deviations, Cronbach's alpha, and correlations between variables*

Scale	M	SD	α	1	2	3	4	5	6	7	8	9	10	11
1. Social Identification	5.38[a]	1.21	.86	-										
2. Prototypicality (PSIPS)	5.02[a]	1.28	.84	.69***	-									
3. Positive Affect	2.64[b]	0.84	.93	.21**	.27***	-								
4. Negative Affect	1.66[b]	0.80	.94	.10	.16	.27***	-							
5. Satisfaction with Life	5.01[a]	1.30	.87	.27***	.16	.23***	-.01	-						
6. Social Support	5.57[a]	1.16	.89	.30***	.14	.21**	-.16	.30***	-					
7. Social Connectedness	4.97[a]	0.59	.78	.21**	.19**	.28***	.08	.01	.49***	-				
8. Stress (DASS-S)	1.82[c]	0.69	.89	.02	-.05	.05	.38***	-.09	-.10	.10	-			
9. Anxiety (DASS-A)	1.50[c]	0.53	.84	.09	.01	.09	.44***	-.05	-.09	.05	.76***	-		
10. Depression (DASS-D)	1.67[c]	0.65	.90	-.11	-.14	-.06	.33***	-.31***	-.25***	.04	.75***	.68***	-	
11. Distress (DASS-21)	1.67[c]	0.57	.94	-.01	-.07	.02	.42***	-.17	-.16	.07	.93***	.88***	.90***	-
12. Depression (CES-D)	1.85[c]	0.45	.85	-.04	-.07	.01	.28	-.14	-.12	.12	.76***	.67***	.79***	.82***

**p<.01, ***p<.001 [a]Measured on a scale from 1 – 7. [b]Measured on a scale from 1 – 5. [c]Measured on a scale from 1 – 4.

Note: Correlations between the DASS-21 and its subcomponents are inflated as the full DASS-21 includes those subcomponents.

Analyses Based on Manipulated Self-In-Group Prototypicality

I next examined whether being in the low prototypicality condition (*M*=5.09, *SD*=1.15) or high prototypicality condition (*M*=4.96, *SD*=1.40) predicted scores on measured perceived self-in-group prototypicality (PSIPS). In this case, there was *no relationship* found between manipulated perceived self-in-group prototypicality and responses on the explicit measure of prototypicality (PSIPS) (*t*(123)=-.57, *p=ns)*. This suggests that the manipulation had been unsuccessful. However, it is important to note that participants' responses to a manipulation check question presented immediately post the manipulation (i.e. "How prototypical did the IAT task indicate you were?"), was in each instance (100%) consistent with the condition to which the participant had been randomly assigned (i.e. those provided feedback they were highly prototypical endorsed high prototypicality rather than low prototypicality when responding to this question). While this item was intended to serve as a manipulation check, it appears the question might not have been an accurate reflection of participants' actual perceptions of themselves as prototypical. Indeed, taken together the evidence suggests that difficulties may have occurred with the manipulation; I will consider this further in the discussion.

Because it was unclear if the above findings actually meant there was a failure of the manipulation to successfully alter perceptions of self-in-group prototypicality, it was still considered important to investigate the effects of the manipulation on the outcome variables. So, I proceeded simply by conducting separate stepwise hierarchical regression analyses for each outcome variable in the same manner that I did in Studies 2 and 3. Included in these analyses as predictors were: gender, age, English as a first language, major life stressor, relative levels of social identification (mean-centered; Aiken & West, 1991), manipulated perceived self-in-group prototypicality (either low = -1 or high = +1) and the interaction between the latter two in that order. The results of these analyses are presented in Table 11.

Recent life stressor was a significant predictor for each of the psychological distress measures (i.e., DASS-21, Depression, Anxiety, Stress subscales, & CES-D). While gender significantly predicted both affect measures, the mean difference between females (*M*=2.57, *SD*=.77) and males (*M*=2.75, *SD*=.96) was not significant (*t*(123)=-1.108, *p=ns)* for positive affect, or negative affect (Females (*M*=1.57, *SD*=.77); Males (*M*=1.82, *SD*=1.01), *t*(123)=-1.69, *p=ns)*. However, the mean difference between

participants whose second language was English (*M*=4.57, *SD*=.63) and for those whose first language was English (*M*=5.09, *SD*=.54) was significant for social connectedness, $t(123)$=-4.35, p<.001. Those whose second language was English endorsed significantly fewer feelings of social connectedness.

Higher levels of social identification as a university student significantly predicted higher levels of psychological well-being, in particular, positive affect, satisfaction with life, social support and social connectedness. This effect was found even after controlling for age, gender, English as a second language and the recent experience of a major life stressor. While there was a significant main effect for social identification for each of these outcome measures, interestingly, relative levels of manipulated perceived self-in-group prototypicality itself was not *independently* related to any of the outcome variables. Manipulated perceived self-in-group prototypicality did, however, significantly moderate the effects of social identification on two of the outcome variables, namely positive affect and depression. These interactions are presented in Figures 17a-17b, with values estimated at one standard deviation above and below the mean.

Table 11.

Models Tested in Study 4 (Manipulated Prototypicality)

Outcome Variables		AdjR^2 change	*B*	Std. Error	β	*t*	95% *CI*
1. Positive Affect	Constant		3.89	.72			
	Age		-.05	.04	-.13	-1.52	-.12, .02
	Gender		-.32	.16	-.19	-2.06*	-.63, -.01
	ESL		.02	.18	.01	.09	-.33, .36
$F(4, 120)$= .90	Stressor	-.003	.01	.04	.02	.23	-.06, .08
	Social Identification		.15	.06	.22	2.36*	.02, .28
$F(6, 118)$=2.15+	Prototypicality Manipulation	.05	-.06	.07	-.07	-.76	-.20, .09
$F(7, 117)$=2.67*	Interaction	.09	.15	.06	.21	2.31*	.02, .27

2.Negative Affect	Constant		.41	.70			
	Age		.07	.03	.17	1.90	-.003, .13
	Gender		-.33	.15	-.20	-2.15*	-.63, -.03
	ESL		.26	.17	.14	1.57	-.07, .60
$F(4, 120)=2.32$	Stressor	.04	.04	.04	.10	1.09	-.03, .11
	Social Identification		.08	.06	.12	1.29	-.04, .20
$F(6, 118)= 2.16$	Prototypicality Manipulation	.05	-.08	.07	-.10	-1.08	-.21,.07
$F(7, 117)=1.90$	Interaction	.05	.04	.06	.06	.60	-.08, .16
3. Satisfaction with Life	Constant		5.99	1.13			
	Age		-.04	.06	-.06	-.66	-.15, .07
	Gender		-.01	.25	-.01	-.02	-.49, .48
	ESL		-.36	.27	-.12	-1.30	-.90, .19
$F(4, 120)=.76$	Stressor	-.01	-.05	.06	-.08	-.84	-.16, .06
	Social Identification		.25	.10	.23	2.52*	.05, .45
$F(6, 118)=2.05$	Prototypicality Manipulation	.05	-.09	.11	-.07	-.80	-.32, .14
$F(7, 117)=1.98$	Interaction	.05	.12	.10	.11	1.22	-.08, .32
4. Social Support	Constant		4.59	.99			
	Age		.04	.05	.07	.80	-.06, .13
	Gender		.25	.21	.10	1.15	-.18, .67
	ESL		-.37	.24	-.13	-1.54	-.84, .11
$F(4, 120)=2.13$	Stressor	.04	.05	.05	.08	.96	-.05, .14
	Social Identification		.23	.09	.24	2.61**	-.05, .40
$F(6, 118)=3.02**$	Prototypicality Manipulation	.09	.02	.10	-.01	.87	-.21, .18

		R^2	B	SE B	β	t	95% CI
$F(7, 117)=2.97^{**}$	Interaction	.10	.13	.09	.14	1.56	-.04, .31
5. Social Connectedness	Constant		4.86	.49			
	Age		.004	.02	.01	.15	-.04, .05
	Gender		.06	.11	.05	.56	-.15, .27
	ESL		-.51	.12	-.36	-4.30^{***}	-.74, -.28
$F(4, 120)=5.83^{***}$	Stressor	.14	.04	.02	.13	1.51	-.01, .09
	Social Identification		.09	.04	.19	2.14^{**}	.01, .18
$F(6, 118)=5.15^{***}$	Prototypicality Manipulation	.17	.07	.05	.11	1.36	-.03, .17
$F(7, 117)=4.43^{***}$	Interaction	.16	.02	.04	.05	.56	-.06, .11
6. Stress (DASS-S)	Constant		2.39	.59			
	Age		-.05	.03	-.14	-1.64	-.10, .01
	Gender		.05	.13	.04	.40	-.20, .30
	ESL		-.23	.14	-.14	-1.62	-.51, .05
$F(4, 120)=5.12^{**}$	Stressor	.12	.11	.03	.34	3.92^{***}	.06, .17
	Social Identification		.03	.05	.05	.60	-.07, .13
$F(6, 118)=3.55^{**}$	Prototypicality Manipulation	.11	-.05	.06	-.08	-.88	-.17, .07
$F(7, 117)=3.28^{**}$	Interaction	.11	-.06	.05	-.11	-1.25	-.17, .04
7. Anxiety (DASS-A)	Constant		1.83	.46			
	Age		-.03	.02	-.13	-.1.45	-.08, .01
	Gender		-.01	.10	.01	-.07	-.19, .20
	ESL		.07	.11	.05	.59	-.15, .29
$F(4,120)=4.04^{**}$	Stressor	.09	.09	.02	.34	3.93^{***}	.04, .13
	Social		.06	.04	.13	1.46	-.02, .14

	Identification					
$F(6,118)=3.01^{**}$	Prototypicality Manipulation	.09	-.02	.05	-.03	.69	-.11, .07
$F(7, 117)=2.74^{*}$	Interaction	.09	.-04	.04	-.10	-1.05	-.12, .04
8. Depression (DASS-D)	Constant		2.06	.56			
	Age		-.04	.03	-.12	-1.44	-.09, .02
	Gender		.11	.12	.08	.90	-.13, .35
	ESL		-.06	.13	-.04	-.41	-.32, .21
$F(4,120)=3.35^{*}$	Stressor	.07	.01	.03	.31	3.54^{***}	.04, .15
	Social Identification		-.03	.05	-.06	-.65	-.13, .07
$F(6,118)=2.44^{*}$	Prototypicality Manipulation	.07	-.01	.06	-.02	-.25	-.13, .10
$F(7, 117)=2.93^{**}$	Interaction	.10	-.11	.05	-.21	-2.32^{*}	-.21, -.02
9. Distress (DASS-21)	Constant		2.10	.48			
	Age		-.04	.02	-.14	-1.69	-.09, .01
	Gender		.06	.10	.05	.53	-.15, .26
	ESL		-.07	.12	-.05	-.63	-.30, .16
$F(4, 120)=4.95^{**}$	Stressor	.11	.10	.02	.36	4.22^{***}	.05, .15
	Social Identification		.02	.04	.04	.45	-.06, .10
$F(6, 118)=3.32^{**}$	Prototypicality Manipulation	.10	-.03	.05	-.05	-.58	-.12, .05
$F(7, 117)=3.33^{**}$	Interaction	.12	-.07	.04	-.16	-1.74	-.16, .01
10. Depression (CES-D)	Constant		1.73	.40			
	Age		-.01	.02	-.02	-.26	-.04, .03
	Gender		.15	.09	.16	1.70	-.02, .32

	ESL		-.07	.10	-.07	-.76	-.26, .12
$F(4, 120)=2.19$	Stressor	.04	.04	.02	.20	2.26[*]	.01, .08
	Social Identification		-.02	.04	-.06	-.66	-.09, .05
$F(6, 118)=1.55$	Prototypicality Manipulation	.03	-.01	.04	-.01	-.13	-.08, .07
$F(7, 117)=1.34$	Interaction	.02	-.02	.04	-.04	-.44	-.08, .05

[+]p<.10, [*]p<.05, [**]p<.01, [***]p<.001

For "ESL", English as a second language was coded as 1 and English as a first language was coded as 0.

For gender, male was coded 0 and female was coded 1.

For "Prototypicality Manipulation", *low prototypicality* was coded -1 and *high prototypicality* was coded +1.

As can be seen, the positive relationship between social identification and positive affect was stronger among participants who had received feedback that they were also relatively high in prototypicality. Participants also endorsed significantly fewer depression symptoms as social identification increased, but only when participants had received feedback that they were also relatively higher in prototypicality. When they had received feedback they were relatively lower in prototypicality, high identifiers rated themselves as more depressed. The slope of the line for higher prototypicality was statistically significant for both positive affect [$t(123)=3.48$, $p<.001$] and depression [$t(123)=-2.36$, $p<.05$], but not the slope for low prototypicality in both cases. Higher prototypicality *enabled* us to see the positive effect of higher social identification on depression (i.e. reduced endorsement of depression symptoms), but only for those higher in social identification. Overall, the multiplicative and different effects of manipulated perceived self-in-group prototypicality on social identification's effect on depression occurred only for those with higher levels of social identification. For the first time, these results demonstrate a significant moderation effect for prototypicality on social identification for a negative well-being measure. This is an important finding and will be discussed further in the Discussion. In the case of positive affect we find higher prototypicality *enabled* us to see the differential effects of levels of social identification on how positive an individual feels. These results indicate being told one is high in self-in-group prototypicality enhances the positive effects of social

identification for both positive and negative measures of psychological well-being, and particularly when the comparative out-group is a lower status group (i.e. TAFE students).

Figure 17a. Study 4 Statistically significant interaction between salient social identity and manipulated self-in-group prototypicality on positive affect

Note: * denotes significant slope

Figure 17b. Study 4 statistically significant interaction between salient social identity and manipulated self-in-group prototypicality on depression (DASS-D)

Note: * denotes significant slope

Analyses Based on Measured Self-In-Group Prototypicality

Because the effect of the manipulation on participants' actual self-perceptions of their own relative in-group prototypicality was questionable, I then explored the effects of the explicit measure of perceived self-in-group prototypicality (PSIPS). To do this I conducted a series of hierarchical linear regressions with this measured prototypicality variable included. Each model employed the same variables described in the previous analysis, however, instead of entering the manipulation of prototypicality, the explicit measure of prototypicality (PSIPS) was included. Because it was possible the manipulation of prototypicality had been unsuccessful (see previous analysis) it was important to examine if the explicit measure of prototypicality yielded different results. This enabled further clarification of the relationship between prototypicality and psychological well-being, but also whether being told one is either high/low in prototypicality (the manipulation) was different to the effect of measured prototypicality on the outcome variables. To this end, the explicit measure of prototypicality (PSIPS) variable was entered as both a main effect and as an interaction term with social identification (each mean-centered, Aiken & West, 1991). The results of these analyses

are presented in Table 12.

After controlling for age, gender, English as a second language and recent stressor, there was a main effect for social identification on satisfaction with life ($p<.01$) and social support ($p<.05$). Participants who identified as an ANU student felt greater psychological well-being as a consequence. In addition, perceived self-in-group prototypicality *independently* positively predicted positive affect ($p<.05$). In addition, measured self-in-group prototypicality significantly moderated the positive impact of levels of social identification on positive affect and depression. These interactions are presented in Figures 18a-18c, with values estimated at one standard deviation above and below the mean.

Table 12.

Significant Models Tested in Study 4 (Measured Prototypicality)

Outcome Variables		AdjR^2 change	B	Std. Error	β	t	95%CI
1. Positive Affect	Constant		3.95	.72			
	Age		-.07	.04	-.17	-2.01*	-.14, -.001
	Gender		-.22	.16	-.13	-1.40	-.53, .09
	ESL		.04	.17	.02	.21	-.31, .38
$F(4, 120)=.90$	Stressor	-.003	.04	.04	.10	1.09	-.03, .11
	Social Identification		.11	.09	.15	1.19	-.07, .28
$F(6, 118)=2.85^*$	Prototypicality	.08	.18	.08	.27	2.23*	.02, .34
$F(7, 117)=3.07^{**}$	Interaction	.11	.07	.04	.19	1.99*	.00, .14
2. Negative Affect	Constant		.46	.70			
	Age		.06	.03	.15	1.68	-.01, .13
	Gender		-.29	.15	-.18	-1.92+	-.59, .01
	ESL		.26	.17	.14	1.57	-.07, .60
$F(4, 120)=2.32$	Stressor	.04	.05	.04	.13	1.42	-.02, .12
	Social Identification		.04	.09	.07	.51	-.13, .22
$F(6, 118)=2.21^*$	Prototypicality	.06	.10	.08	.16	1.25	-.06, .25
$F(7, 117)=2.01$	Interaction	.06	.03	.04	.09	.91	-.04, .10
3. Satisfaction with Life	Constant		5.97	1.14			
	Age		-.04	.06	-.07	-.79	-.15, .07
	Gender		.03	.25	.01	.11	-.46, .52
	ESL		-.33	.27	-.11	-1.20	-.87, .21
$F(4, 120)=.76$	Stressor	-.01	-.04	.06	-.06	-.70	-.15, .07

	Social Identification		.38	.14	.35	2.69**	.10, .66
$F(6, 118)=1.98$	Prototypicality	.05	-.04	.13	-.04	-.35	-.30, .21
$F(7, 117)=1.99$	Interaction	.05	.08	.06	.14	1.39	-.03, .19
4. Social Support	Constant		4.62	1.00			
	Age		.04	.05	.06	.72	-.06, .13
	Gender		.27	.22	.11	1.23	-.16, .69
	ESL		-.33	.24	-.12	-1.39	-.81, .14
$F(4, 120)=2.76$	Stressor	.04	.05	.05	.09	1.00	-.05, .15
	Social Identification		.31	.12	.33	2.53*	.07, .56
$F(6, 118)=3.10^{**}$	Prototypicality	.09	-.07	.11	-.08	-.67	-.30, .14
$F(7, 117)=2.63^{*}$	Interaction	.08	.00	.05	.00	.04	-.10, .10
5. Social Connectedness	Constant		4.86	.49			
	Age		.00	.02	.00	.03	-.05, .05
	Gender		.10	.11	.08	.91	-.11, .31
	ESL		-.51	.12	-.36	-4.29***	-.74, -.27
$F(4, 120)=5.83^{***}$	Stressor	.13	.05	.03	.17	1.96+	-.00, .10
	Social Identification		.03	.06	.06	.48	-.09, .15
$F(6, 118)=5.23^{***}$	Prototypicality	.17	.08	.06	.18	1.49	-.03, .19
$F(7, 117)=4.45^{***}$	Interaction	.16	-.00	.03	-.01	-.10	-.05, .05
6. Stress (DASS-S)	Constant		2.37	.59			
	Age		-.05	.03	-.14	-1.56	-.10, .01
	Gender		.03	.13	.02	.22	-.23, .28
	ESL		-.25	.14	-.15	-1.72	-.53, .04
$F(4, 120)=5.12^{**}$	Stressor	.12	.11	.03	.32	3.65***	.05, .17

	Social Identification		.04	.07	.06	.48	-.11, .18
$F(6, 118)=3.39^{**}$	Prototypicality	.10	-.00	.07	.00	-.00	-.13, .13
$F(7, 117)=2.95^{**}$	Interaction	.10	.02	.03	.06	.61	-.04, .08
7. Anxiety (DASS-A)	Constant		1.77	.45			
	Age		-.03	.02	-.12	-.1.43	-.08, .01
	Gender		-.00	.10	.01	.06	-.19, .20
	ESL		.06	.11	.04	.52	-.16, .27
$F(4, 120)=4.04^{**}$	Stressor	.09	.09	.02	.34	3.90^{***}	.04, .13
	Social Identification		.08	.06	.17	1.36	-.04, .19
$F(6, 118)=2.98^{*}$	Prototypicality	.09	.01	.05	.03	.23	-.09, .11
$F(7, 117)=3.13^{**}$	Interaction	.11	.04	.02	.18	1.91	-.00, .09
8. Depression (DASS-D)	Constant		1.97	.56			
	Age		-.03	.03	-.11	-1.25	-.09, .02
	Gender		.08	.12	.06	.67	-.16, .32
	ESL		-.08	.14	-.05	-.58	-.35, .19
$F(4, 120)=3.35^{*}$	Stressor	.07	.09	.03	.29	3.21^{***}	.04, .15
	Social Identification		-.02	.07	-.03	-.25	-.16, .12
$F(6, 118)=2.43^{*}$	Prototypicality	.07	-.00	.06	-.00	-.04	-.13, .12
$F(7, 117)=2.48^{*}$	Interaction	.08	.05	.03	.16	1.62	-.01, .10
9. Distress (DASS-21)	Constant		2.04	.48			
	Age		-.04	.02	-.14	-1.58	-.08, .01
	Gender		.04	.11	.03	.37	-.17, .25
	ESL		-.09	.12	-.07	-.77	-.32, .14

$F_{(4,120)}=4.95^{**}$	Stressor	.11	.10	.02	.35	3.97^{***}	.05, .14
	Social Identification		.03	.06	.07	.53	-.09, .15
$F_{(6, 118)}=3.25^{**}$	Prototypicality	.10	.00	.05	.01	.06	-.10, .11
$F_{(7, 117)}=3.13^{**}$	Interaction	.11	.04	.02	.14	1.48	-.01, .08
10. Depression (CES-D)	Constant		1.67	.39			
	Age		-.01	.02	-.03	-.30	-.04, .03
	Gender		.16	.08	.17	1.89	-.01, .32
	ESL		-.08	.09	-.07	-.81	-.26, .11
$F_{(4, 120)}=2.19^{*}$	Stressor	.04	.05	.02	.22	2.45^{*}	.01, .09
	Social Identification		-.003	.05	-.01	-.05	-.10, .09
$F_{(6, 118)}=1.55$	Prototypicality	.03	.02	.04	.03	.43	-.07, .10
$F_{(7, 117)}=2.28^{*}$	Interaction	.09	.05	.02	.24	2.50^{*}	.01, .09

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$

For "ESL", English as a second language was coded as 1 and English as a first language was coded as 0.

For gender, male was coded 0 and female was coded 1.

As can be seen, the positive relationship between social identification and positive affect is stronger among participants who perceived themselves to be relatively high in prototypicality. The slope of the line for higher prototypicality is significant ($t(123)=3.48$, $p<.001$), but not the slope for the line for lower prototypicality ($p=ns$) . Different from the previous analysis, however, participants endorsed relatively *more* depression symptoms as social identification increased but only when they also perceived themselves as relatively higher in prototypicality. However when they saw themselves as lower in prototypicality, high identifiers endorsed relatively fewer depression symptoms. Neither of the slopes of the lines for higher and lower prototypicality, however, were significant for depression ($p=ns$).
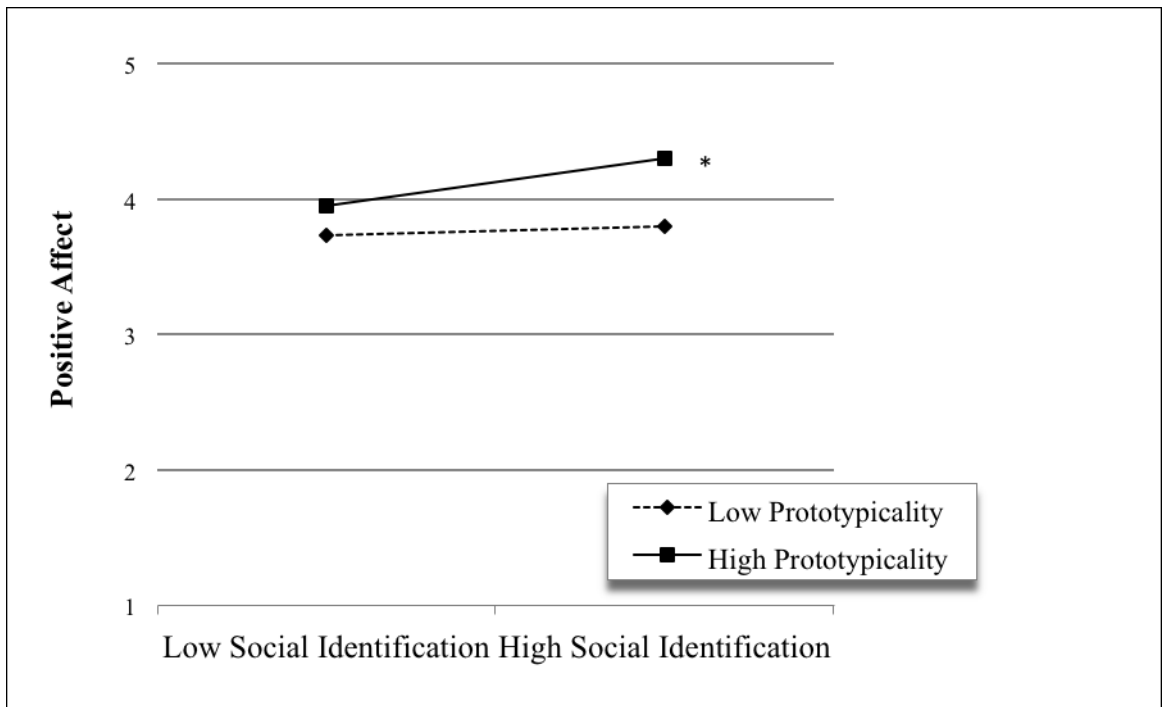
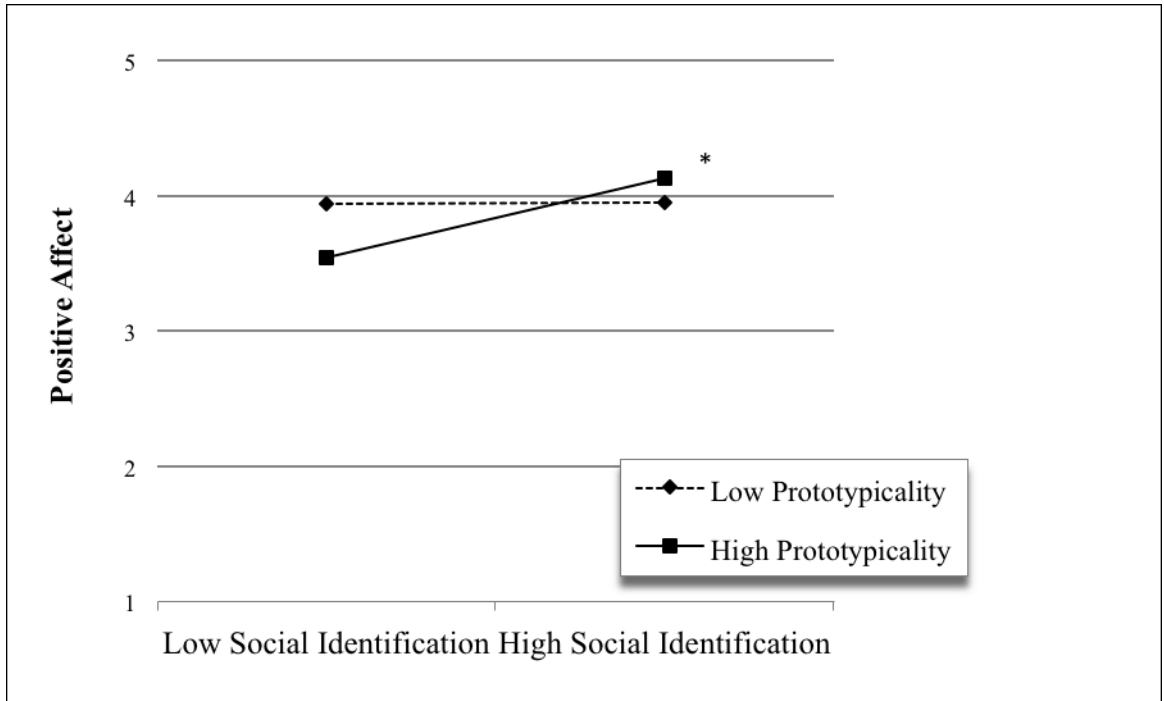*Figure 18a.* Study 4 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on positive affect
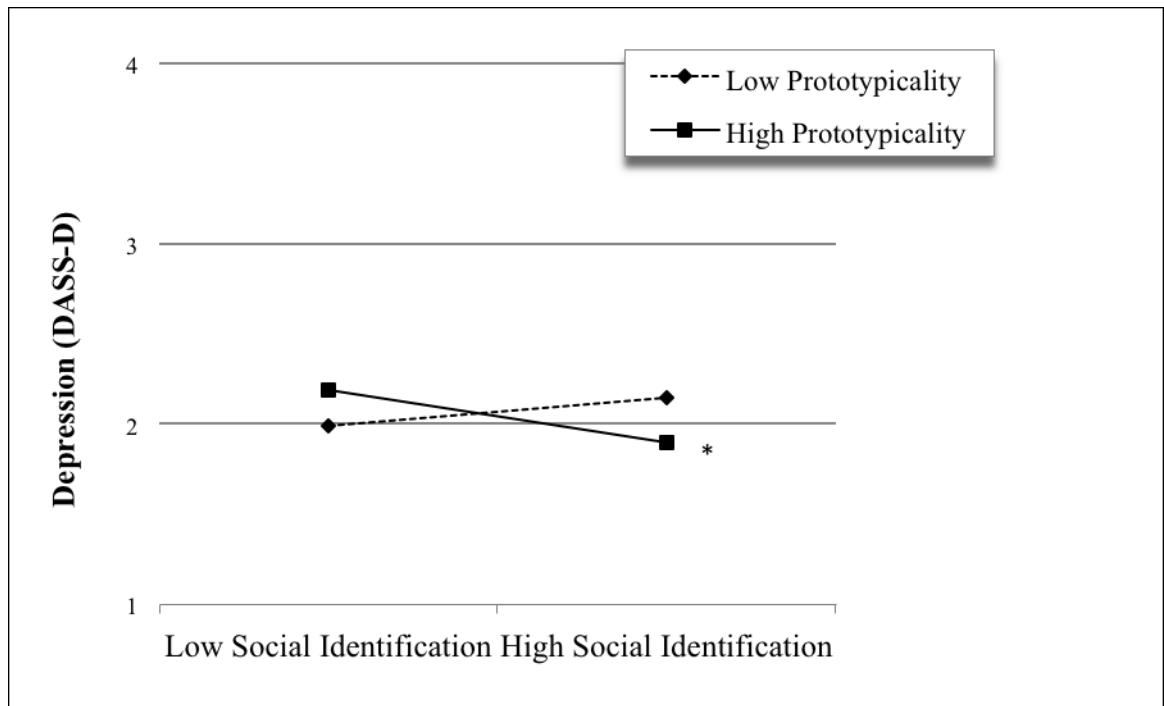
Note: * denotes significant slope
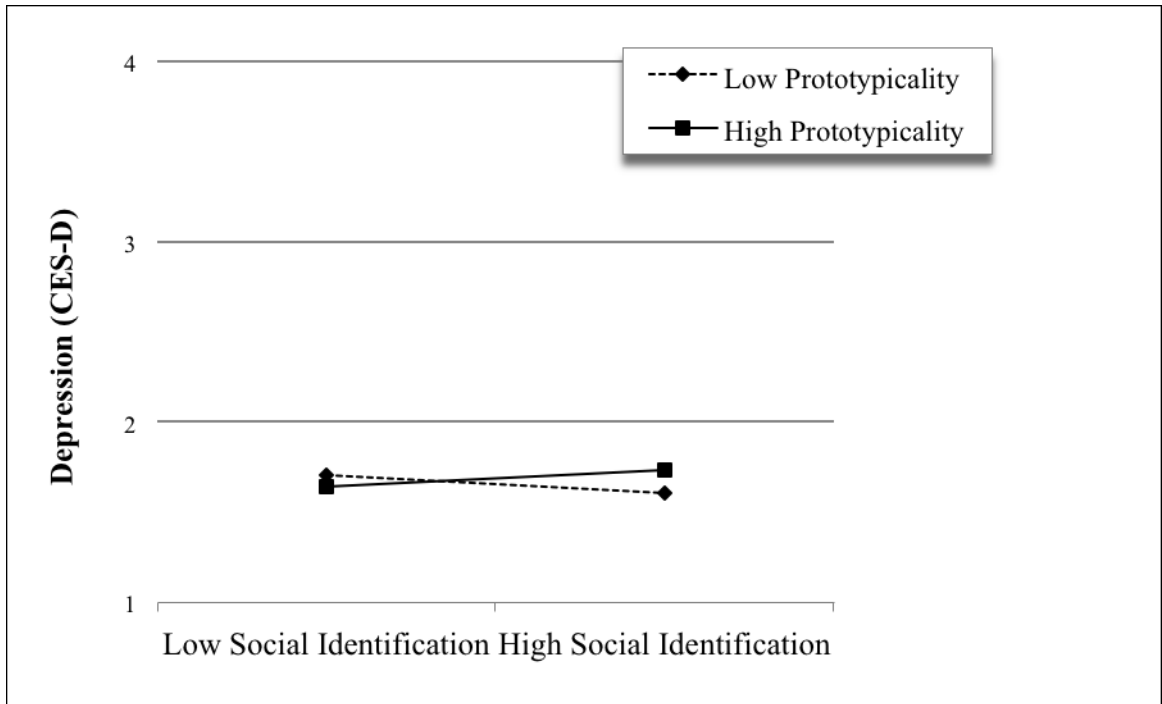
Figure 18b. Study 4 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on depression

Note: * denotes significant slope

Discussion Study 4

The results of this study provide further support for social identification's positive relationship with psychological well-being (H2), and evidence to support a relationship between prototypicality (H3) and psychological well-being directly, but also that prototypicality does moderate of the effects of social identification on psychological well-being (H4). Interestingly, despite the manipulation of prototypicality having no significant effect on the measured self-in-group prototypicality (PSIPS), the results of the separate analyses (which included either the manipulated or measured prototypicality variables) were largely similar. Both analyses yielded main effects for social identification on satisfaction with life and social support, while the analysis which included the manipulated prototypicality variable additionally yielded a main effect for social identification on positive affect and social connectedness. Surprisingly, and in direct contrast to Studies 2 and 3, social identification did not significantly predict any other outcome variables. In addition, the results of Study 4 found a significant main effect for measured prototypicality on positive affect. There was also consistency between the two analyses (which included either the prototypicality

manipulation or the explicit measure of prototypicality) in terms of the significant moderation effects found. In both analyses, prototypicality moderated the effects of social identification on positive affect and depression, providing evidence to support H4. In both instances, higher prototypicality enabled the positive effects of higher social identification on psychological well-being to be seen (i.e. higher positive affect and lower depression).

Finally, despite some difficulty in determining whether the manipulation was successful, both the manipulated prototypicality variable and the measured prototypicality variable predicted the same outcome variables (positive affect and depression). This suggests that the manipulation of perceived self-in-group prototypicality, in the current study, may have been successful, despite the inherent difficulties in manipulating participants' perceptions of their own prototypicality. Thus, the results of this study provide some evidence that prototypicality does moderate the positive relationship between social identification and psychological well-being. Specifically it provides causal evidence that self-prototypicality judgements moderate the effects of social identification on depression and positive mood. This is a somewhat surprising result, given participants were asked to endorse the extent to which they had experienced depression symptoms 'recently' as opposed to 'right now' as the manipulation was framed. Indeed the manipulation would be considered more likely to have had an effect on current mood such as positive affect/negative affect (measured by the PANAS) than the measure of depression (DASS-21). This suggests that either the participants' responses on the depression measure were more easily influenced by situational factors (i.e. the manipulation) and present mood than has previously been thought (Roberts & Venon, 1983). To further test the veracity of these results, in Study 5 I developed and tested a slightly different manipulation task, to see it this made any difference to the pattern of findings.

Study 5

Method

Participants. Fifty-nine male and 111 female (N=160) ANU students voluntarily participated in this study. Ages ranged from 17 to 42 years (median=19 years). One hundred and forty-two (83.5%) reported English was their first language. Participants were recruited via posters distributed on campus noticeboards and invited to complete an online questionnaire. Each was offered either course credit if he or she was a first-

year psychology student or AU$5.00 remuneration.

Procedure. Participants completed the manipulation task (which in this study was the Personal Attributes Test (PAT) not the IAT used in Study 4) and dependent measures (as described above). Upon completion, participants were provided with an explanation of the study, counselling phone numbers if they required them, before receiving either payment or course credit.

Results

As with the previous studies, I began by completing a principal components analysis on the four social identification items and the five perceived self-in-group prototypicality items. Using an oblimin rotation, two components with eigen values greater than one again emerged accounting for 60.76% of the variance. These two components corresponded to the two scales in all cases except for the final two prototypicality scale items (i.e. "I think it would be accurate if someone described me as a typical *(in-group name)*" and "I would feel good if someone described me as a typical *(in-group name)*"), which either loaded equally on both or in one case loaded more on social identification. Removal of these items, however, did not improve the scales' reliability, and to remain consistent with all the previous studies, I decided to keep the full five item PSIPS items in further analyses.

To further test the measurement model, whereby items assessing social identification and prototypicality loaded on their corresponding factors, I conducted a confirmatory factor analysis. I first examined a single factor model in which all four social identification items and five prototypicality items were entered. The resulting measurement model showed inadequate fit indices according to Kline's (2005) criteria $\chi^2(170)=130.34$, $p<.001$, comparative fit index (CFI)=.82 and root mean square error of approximation [(RMSEA)=.15, 90% CIs=.12, .18]. This indicated that social identification and prototypicality scale items may load on more than one factor. So, a two-factor solution was examined with social identification and prototypicality. To account for high covariance between item error terms, these were first allowed to co-vary. In this final model, each of the items clearly loaded on the related latent variables and model fit indices ($\chi^2(170)=115.26$, $p<.001$, comparative fit index (CFI)=.96 and root mean square error of approximation (RMSEA)=.81, 90% CIs=.07, .10 were greatly

improved. See Figure 19 for the path analysis for the final CFA model.
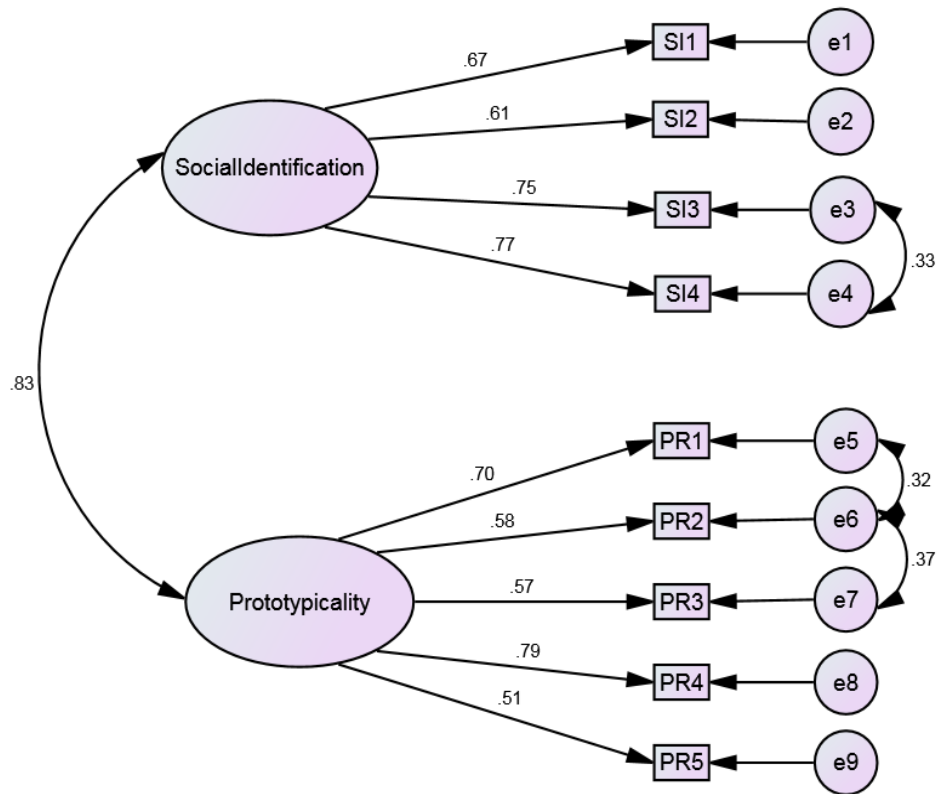
Figure 19. Study 5 Path analysis of confirmatory factor analysis of social identity and prototypicality scale items

I then calculated an average of the items within the SIS and PSIPS for each participant. I also calculated the average of each of the other multi-item measures that were used. Table 13 presents Cronbach's alphas, means, standard deviations and pair-wise correlations for each scale.

Reported social identification ($p<.001$), perceived self-in-group prototypicality ($p<.01$), satisfaction with life ($p<.001$), social support ($p<.001$), social connectedness ($p<.001$) and positive affect ($p<.001$) were all significantly greater than the scale mid-point. In contrast, the CDS-E, all DASS scales and negative affect were all significantly lower than their respective scale mid-points ($ps<.001$). As in Study 4, participants had higher levels of social identification than measured perceived self-in-group prototypicality, $t(170)=10.29$, $p<.001$.

Notably, the negative psychological well-being measures all negatively correlated with positive well-being measures, but positively correlated with each other, indicating divergent and convergent validity. Social identification was significantly positively correlated with each of the positive well-being outcome variables and negatively correlated with each of the negative well-being outcome variables. Self-in-group prototypicality significantly positively correlated with positive affect, satisfaction with life and social connectedness. Social identification and measured self-in-group prototypicality were also significantly correlated with each other. However, as the collinarity statistics (tolerance and variance inflation factors (VIF)) were within acceptable limits (VIF < 2), the assumption for multi-collinarity was met (Coakes, 2005; Hair et al., 2012).

Table 13. *Study 5 means, standard deviations, Cronbach's alphas and correlations between variables*

Scale	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12
1. Social Identification	5.26[a]	1.26	.81	-											
2. Prototypicality (PSIPS)	4.30[a]	1.22	.79	.63***	-										
3. Positive Affect	2.51[b]	.80	.91	.31***	.22***	-									
4. Negative Affect	1.66[b]	.70	.90	-.12	.02	-.00	-								
5. Satisfaction with Life	4.53[a]	1.52	.85	.42***	.21***	.27***	-.12	-							
6. Social Support	5.33[a]	1.46	.96	.39***	.11	.19**	-.21***	.56***	-						
7. Social Connectedness	5.61[a]	1.15	.71	.46***	.19**	.23***	-.11	.47***	.51***	-					
8. Stress (DASS-S)	2.06[c]	.71	.85	-.29***	-.07	-.21***	.33***	-.37***	-.32***	-.30***	-				
9. Anxiety (DASS-A)	1.65[c]	.63	.84	-.25***	-.02	-.10	.42***	-.39***	-.40***	-.35***	.74***	-			
10. Depression (DASS-D)	1.87[c]	.74	.90	-.41***	-.10	-.25***	.28***	-.61***	-.46***	-.39***	.72***	.67***	-		
11. Distress (DASS-21)	1.86[c]	.62	.94	-.36***	-.07	-.21***	.39***	-.51***	-.44***	-.39***	.92***	.88***	.90***	-	
12. Depression (CDS-E)	1.88[c]	.58	.92	-.45***	-.12	-.23***	.39***	-.59***	-.50***	-.47***	.78***	.77***	.89***	.91***	-

**p<.01, ***p<.001; [a]Measured on a scale from 1 – 7; [b]Measured on a scale from 1 – 5; [c]Measured on a scale from 1- 4.

Note: Correlations between the DASS-21 and its subcomponents are inflated as the full DASS-21 includes those subcomponents.

Analyses Based on Manipulated Self-In-Group Prototypicality

I next examined whether the condition in which participants were randomly assigned (i.e., low prototypicality or high prototypicality) led to differences in their scores on the PSIPS. Similar to Study 4, there was no significant mean difference between the scores of participants in the low prototypicality condition (*M*=4.14, *SD*=1.26) or the high prototypicality condition (*M*=4.47, *SD*=1.15) on the measured prototypicality scale (*t*(*168*)=1.79, *p*=ns). This suggests that, similar to Study 4, the manipulation may not have successfully altered participants' perceptions of their own prototypicality, or at least did not directly predict their explicit responses to perceptions of their own prototypicality. However, 100% of participants did respond in the single item manipulation check consistent with the condition to which they had been randomly assigned (i.e., those provided with feedback they were highly prototypical endorsed high prototypicality rather than low prototypicality when responding to the question "How prototypical did the PAT indicate you were.").

To examine the relationship between prototypicality and each of the outcome variables, a step-wise hierarchical regression analysis was then conducted with the same predictors for each analysis as were employed in Study 4: gender, age, English as a first language, major life stressor, relative levels of social identification (mean-centered; Aiken & West, 1991), *manipulated* perceived self-in-group prototypicality and the interaction between the latter two were entered in that order. The results of these analyses are presented in Table 14.

As can be seen, relative levels of social identification served as a significant predictor for all of the outcome variables except negative affect (*p*=ns). These effects were found even after accounting for the other covariates, in-particular experience of a recent life stressor, which significantly predicted most outcome variables (i.e., positive affect, satisfaction with life, social connectedness, stress, anxiety, both measures of depression, negative affect and overall psychological distress). Interestingly, manipulated prototypicality alone did *not* serve as an independent predictor of any outcome variables. Respondents in either the low or high prototypicality condition did not endorse any psychological well-being measure significantly differently from each other. Most notably, manipulated self-in-group prototypicality also *did not* serve as a reliable moderator of social identification for any of the outcome variables. This, of course, was somewhat surprising, given the strength of the findings in previous studies

presented in this empirical work. However, it is possible these results were a reflection of the lack of success of the manipulation and suggests the manipulation in Study 4 may have been more effective than that employed in Study 5. Despite this, these results do provide evidence to confirm previous work that demonstrates higher social identification is positively related to psychological well-being measures.

Table 14.

Models Tested in Study 5 (Manipulated Prototypicality)

Outcome Variables		AdjR^2 change	*B*	Std. Error	β	*t*	95% *CI*
1. Positive Affect	Constant		2.66	.46			
	Age		-.01	.02	-.02	-.23	-.05, .04
	Gender		-.20	.13	-.12	-1.59	-.45, .05
	ESL		.26	.16	.12	-1.65	-.05, .58
$F(4, 165)=1.03$	Stressor	.00	.01	.03	.03	.44	-.04, -.07
	Social Identification		.22	.05	.33	4.40***	.12, .32
$F(6, 163)=3.89^{**}$	Prototypicality Manipulation	.09	.04	.06	.04	.59	-.08, .15
$F(7, 162)=3.68^{**}$	Interaction	.10	.08	.05	.11	1.50	-.02, .17
2. Negative Affect	Constant		1.53	.41			
	Age		-.01	.02	-.03	-.38	-.05, .03
	Gender		-.01	.11	-.01	-.07	-.23, .21
	ESL		-.00	.14	-.00	-.02	-.29, .28
$F(4, 165)=3.21^{*}$	Stressor	.05	.09	.03	.27	3.53**	.04, .14
	Social Identification		-.07	.05	-.11	-1.48	-.16, .02
$F(6, 163)=2.58^{*}$	Prototypicality Manipulation	.05	-.04	.05	-.06	-.73	-.14, .07
$F(7, 162)=2.27^{*}$	Interaction	.05	-.03	.05	-.05	-.71	-.12, .06
3. Satisfaction with Life	Constant		4.29	.80			
	Age		.04	.04		.96	-.04, .12
	Gender		.16	.22		.73	-.27, .60
	ESL		-.44	.28		-1.57	-1.0, .11

PROTOTYPICALITY & PSYCHOLOGICAL WELL-BEING   166

		R^2	B	$SE\ B$	β	t	95% CI
$F(4, 165)=3.56^{**}$	Stressor	.06	-.16	.05		-3.34^{***}	-.26, .06
	Social Identification		.52	.09		5.91^{***}	.35, .70
$F(6, 163)=8.60^{***}$	Prototypicality Manipulation	.21	.01	.11		.12	-.20, .22
$F(7, 162)=7.60^{***}$	Interaction	.22	.11	.08		1.22	-.06, .28
4. Social Support	Constant		4.78	.80			
	Age		.04	.04	.07	.94	-.04, .12
	Gender		.21	.22	.07	.97	-.22, .65
	ESL		-.02	.28	-.00	-.05	-.57, .54
$F(4, 165)=1.26$	Stressor	.006	-.09	.05	-.14	-1.92	-.19,-.003
	Social Identification		.47	.09	.38	5.32^{***}	.29, .64
$F(6, 163)=6.38^{***}$	Prototypicality Manipulation	.16	-.18	.10	-.13	-1.77	-.39, .02
$F(7, 162)=5.53^{***}$	Interaction	.16	.06	.09	.05	.73	-.11, .24
5. Social Connectedness	Constant		4.85	.60			
	Age		.04	.03	.10	1.47	-.02, .10
	Gender		.25	.17	.10	1.49	-.08, .57
	ESL		-.06	.21	-.02	-.28	-.47, .36
$F(4, 165)=1.54$	Stressor	.01	-.07	.04	-.14	-1.99^{*}	-.14,-.00
	Social Identification		.44	.07	.46	6.68^{***}	.31, .57
$F(6, 163)=9.15^{***}$	Prototypicality Manipulation	.22	-.13	.08	-.11	-1.61	-.28, .03
$F(7, 162)=8.26^{***}$	Interaction	.23	.10	.07	.11	1.56	-.03, .23
6. Stress (DASS-S)	Constant		1.28	.39			
	Age		.02	.02	.08	1.10	-.02, .06

		R^2	B	SE B	β	t	95% CI
	Gender		.21	.11	.14	1.95	-.00, .42
	ESL		-.25	.14	-.13	-1.81	-.51, .02
$F(4, 165)=5.92^{***}$	Stressor	.10	.08	.02	.26	3.59^{***}	.04, .13
	Social Identification		-.16	.04	-.27	-3.78^{**}	-.25, -.08
$F(6, 163)=6.70^{***}$	Prototypicality Manipulation	.17	.01	.05	.01	.18	-.09, .11
$F(7, 162)=5.72^{***}$	Interaction	.16	.01	.04	.02	.26	-.07, .10
7. Anxiety (DASS-A)	Constant		1.57	.35			
	Age		-.01	.02	-.05	-.62	-.05, .02
	Gender		.14	.10	.11	1.43	-.05, .33
	ESL		-.16	.12	-.09	-1.28	-.40, .09
$F(4, 165)=3.96^{**}$	Stressor	.07	.07	.02	.25	3.36^{***}	.03, .11
	Social Identification		-.13	.04	-.25	-3.38^{**}	-.21, -.05
$F(6, 163)=4.84^{***}$	Prototypicality Manipulation	.12	.02	.05	.04	.49	-.07, .11
$F(7, 162)=4.26^{***}$	Interaction	.12	.04	.04	.07	.91	-.04, .11
8. Depression (DASS-D)	Constant		1.55	.40			
	Age		.004	.02	.01	.18	-.04, .04
	Gender		-.008	.11	-.01	-.08	-.22, .21
	ESL		-.15	.14	-.08	-1.08	-.42, .12
$F(4, 165)=3.98^{**}$	Stressor	.07	.09	.02	.25	3.64^{***}	.04, .13
	Social Identification		-.24	.04	-.39	-5.56^{***}	-.33, -.16
$F(6, 163)=8.32^{***}$	Prototypicality Manipulation	.21	.02	.05	.03	.37	-.08, .12
$F(7, 162)=7.16^{***}$	Interaction	.20	-.03	.04	-.05	-.64	-.11, .06

		R^2	B	$SE\ B$	β	t	95% CI
9. Distress (DASS-21)	Constant		1.47	.33			
	Age		.01	.02	.02	.28	-.03, .04
	Gender		.11	.09	.09	1.22	-.07, .29
	ESL		-.18	.12	-.11	-1.58	-.42, .05
$F_{(4, 165)}=5.35^{***}$	Stressor	.09	.08	.02	.28	4.01***	.04, .12
	Social Identification		-.18	.04	-.34	-4.85***	-.25, -.11
$F_{(6, 163)}=8.08^{***}$	Prototypicality Manipulation	.20	.02	.04	.03	-.42	-.07, .10
$F_{(7, 162)}=6.89^{***}$	Interaction	.20	.01	.04	.01	.17	-.07, .08
10. Depression (CES-D)	Constant		1.52	.30			
	Age		.004	.02	.02	.26	-.03, .03
	Gender		.11	.08	.09	1.32	-.05, .27
	ESL		-.12	.10	-.08	-1.12	-.32, .09
$F_{(4, 165)}=5.01^{**}$	Stressor	.09	.07	.02	.27	4.03***	.04, .11
	Social Identification		-.21	.03	-.43	-6.40***	-.27, -.14
$F_{(6, 163)}=11.15^{***}$	Prototypicality Manipulation	.27	.02	.04	.04	.54	-.06, .10
$F_{(7, 162)}=9.50^{***}$	Interaction	.26	-.004	.03	-.01	-.12	-.07, .06

$^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$

For "ESL", English as a second language was coded as 1 and English as a first language was coded as 0.

For gender, male was coded 0 and female was coded 1.

For "Prototypicality Manipulation", low prototypicality was coded -1 and high prototypicality was coded +1.

Analyses Based on Measured Self-In-Group Prototypicality

Finally, the same analysis, but this time replacing the manipulation of prototypicality with the explicit measure of self-in-group prototypicality (the PSIPS),

was conducted. Again, responses to the PSIPS were entered as both a main effect and as an interaction term with social identification (each mean-centered before entering, Aiken & West, 1999). The results of these analyses are presented in Table 15.

The pattern of significant effects was equivalent to the previous analysis with some additions. Once again, after controlling for age, gender, English as a second language and recent stressor, social identification significantly predicted all the outcome variables ($p<.001$) except for negative affect (p=ns). In addition, a significant main effect was also found for prototypicality for social support, anxiety (all $p<.05$)., both measures of depression (DASS-D and CDS-E) ($p<.01$) and psychological distress (DASS-21) ($p<.05$). Participants in this sample, with higher scores on the PSIPS, reported lower perceptions of social support and higher depression, anxiety and overall psychological distress. The explicit measure of prototypicality also moderated the positive impact of higher social identification on negative affect. The interaction is presented in Figure 20, with values estimated at one standard deviation above and below the mean.

Table 15.

Models Tested in Study 5 (Measured Prototypicality)

Outcome Variables		AdjR^2 change	B	Std. Error	β	t	CI 95%
1.Positive Affect	Constant		2.69	.45			
	Age		-.01	.02	-.03	-.43	-.05, .03
	Gender		-.21	.13	-.13	-1.68	-.46, .04
	ESL		.26	.16	.12	1.59	-.06, .57
$F(4, 165)=1.03$	Stressor	.001	.02	.03	.05	.63	-.04, .07
	Social Identification		.23	.07	.34	3.40***	.10, .37
$F(6, 163)=3.86$**	Prototypicality	.09	.02	.06	.04	.37	-.10, .15
$F(7, 162)=3.68$**	Interaction	.10	.05	.04	.12	1.54	-.02, .12
2.Negative Affect	Constant		1.48	.40			
	Age		-.01	.02	-.03	-.42	-.05, .03
	Gender		-.04	.11	-.03	-.38	-.26, .17
	ESL		.01	.14	.01	.06	-.27, .28
$F(4, 165)=3.22$*	Stressor	.05	.09	.02	.27	3.64***	.04, .13
	Social Identification		-.05	.06	-.09	-.89	-.17, .06
$F(6, 163)=2.81$*	Prototypicality	.06	.06	.06	.11	1.16	-.04, .17
$F(7, 162)=3.81$**	Interaction	.10	.09	.03	.24	3.00**	.03, .15
3. Satisfaction with Life	Constant		4.38	.80			
	Age		.03	.04	.06	.78	-.05, .11
	Gender		.18	.22	.06	.80	-.26, .62
	ESL		-.49	.28	-.12	-1.70	-1.05, .08

$F(4, 165)=3.56^{**}$	Stressor	.06	-.15	.05	-.22	-3.13^{**}	-.25, -.05
	Social Identification		.59	.12	.47	4.90^{***}	.35, .83
$F(6\ 163)=8.77^{***}$	Prototypicality	.22	-.10	.11	-.08	-.91	-.32, .12
$F(7, 162)=7.47^{***}$	Interaction	.21	.01	.06	.01	.18	-.11, .14
4. Social Support	Constant		4.91	.79			
	Age		.03	.04	.05	.73	-.05, .11
	Gender		.26	.22	.08	1.17	-.18, .69
	ESL		-.08	.28	-.02	-.29	-.63, .47
$F(4, 165)=1.26$	Stressor	.01	-.08	.05	-.12	-1.65	-.17, .02
	Social Identification		.63	.12	.52	5.31^{***}	.40, .86
$F(6, 163)=7.01^{***}$	Prototypicality	.18	-.27	.11	-.22	-2.44^{*}	-.48, -.05
$F(7, 162)=6.01^{***}$	Interaction	.17	-.03	.06	-.04	-.47	-.15, .09
5. Social Connectedness	Constant		4.99	.60			
	Age		.03	.03	.08	1.15	-.02, .09
	Gender		.27	.17	.12	1.72	-.04, .61
	ESL		-.10	.21	-.03	-.48	-.52, .32
$F(4, 165)=1.54$	Stressor	.01	-.06	.04	-.11	-1.65	-.13, .01
	Social Identification		.52	.09	.55	5.82^{***}	.35, .70
$F(6, 163)=9.27^{***}$	Prototypicality	.23	-.14	.08	-.15	-1.70	-.31, .02
$F(7, 162)=7.91^{***}$	Interaction	.22	-.02	.05	-.02	-.32	-.12, .08
6. Stress (DASS-S)	Constant		1.28	.38			
	Age		.02	.02	.08	1.08	-.02, .06
	Gender		.20	.11	.13	1.87	-.01, .40
	ESL		-.23	.13	-.12	-1.71	-.50, .04

$F_{(4, 165)}=5.92^{***}$	Stressor	.10	.08	.02	.25	3.60^{***}	.04, .13
	Social Identification		-.20	.06	-.34	-3.50^{***}	-.31, -.09
$F_{(6, 163)}=7.33^{***}$	Prototypicality	.18	.09	.05	.15	1.67	-.02, .19
$F_{(7, 162)}=6.47^{***}$	Interaction	.19	.03	.03	.09	1.12	-.02, .09
7. Anxiety (DASS-A)	Constant		1.57	.34			
	Age		-.01	.02	-.06	-.76	-.05, .02
	Gender		.13	.10	.10	1.33	-.06, .31
	ESL		-.14	.12	-.09	-1.18	-.38, .10
$F_{(4, 165)}=3.96^{**}$	Stressor	.07	.07	.02	.25	3.45^{***}	.03, .11
	Social Identification		-.17	.05	-.33	-3.35^{***}	-.27, -.07
$F_{(6, 163)}=5.73^{***}$	Prototypicality	.14	.10	.05	.19	2.08^{+}	.005, .19
$F_{(7, 162)}=5.33^{***}$	Interaction	.15	.04	.03	.12	1.61	-.01, .10
8. Depression (DASS-D)	Constant		1.52	.39			
	Age		.01	.02	.02	.31	-.03, .04
	Gender		-.02	.11	-.02	-.15	-.23, .20
	ESL		-.12	.14	-.06	-.85	-.39, .15
$F_{(4, 165)}=3.98^{**}$	Stressor	.07	.08	.02	.24	3.45^{**}	.03, .13
	Social Identification		-.33	.06	-.53	-5.64^{***}	-.44, -.21
$F_{(6, 163)}=9.79^{***}$	Prototypicality	.24	.14	.05	.23	2.60^{**}	.03, .25
$F_{(7, 162)}=8.35^{***}$	Interaction	.23	.01	.03	.02	.22	-.05, .07
9. Distress (DASS-21)	Constant		1.45	.32			
	Age		.004	.02	.02	.28	-.03, .04
	Gender		.10	.09	.08	1.14	-.08, .28

		R^2	B	SE B	β	t	95% CI
	ESL		-.16	.12	-.10	-1.42	-.39, .06
$F(4, 165)=5.35^{***}$	Stressor	.09	.08	.02	.27	3.99***	.04, .12
	Social Identification		-.23	.05	-.45	-4.78***	-.33, -.14
$F(6, 163)=9.39^{***}$	Prototypicality	.23	.11	.05	.21	2.41*	.02, .20
$F(7, 162)=8.23^{***}$	Interaction	.23	.03	.03	.08	1.09	-.02, .08
10. Depression (CES-D)	Constant		1.49	.29			
	Age		.004	.01	.02	.29	-.02, .03
	Gender		.09	.08	.08	1.16	-.07, .25
	ESL		-.09	.10	-.06	-.93	-.29, .11
$F(4, 165)=5.01^{**}$	Stressor	.09	.07	.02	.26	4.03***	.04, .10
	Social Identification		-.26	.04	-.54	-6.03***	-.34, -.17
$F(6, 163)=13.07^{***}$	Prototypicality	.30	.11	.04	.23	2.79**	.03, .19
$F(7, 162)=11.80^{***}$	Interaction	.31	.04	.02	.12	1.77	-.01, .08

$^*p<.05$, $^{**}p<.01$, $^{***}p<.001$

For "ESL", English as a second language was coded as 1 and English as a first language was coded as 0.

For gender, male was coded 0 and female was coded 1.

Measured prototypicality moderated the positive impact of higher social identification on negative affect. The slope of the line for lower prototypicality was statistically significant $t(126)=-2.53$, $p<.05$, but not the slope of the line for higher prototypicality $t(126)=.053$, $p=.59$. Interestingly, for this negative indicator of psychological well-being it appears low prototypicality was not so much *enhancing* the negative relationship between social identification and negative affect, but enabling it to emerge, but only for those highly identified.
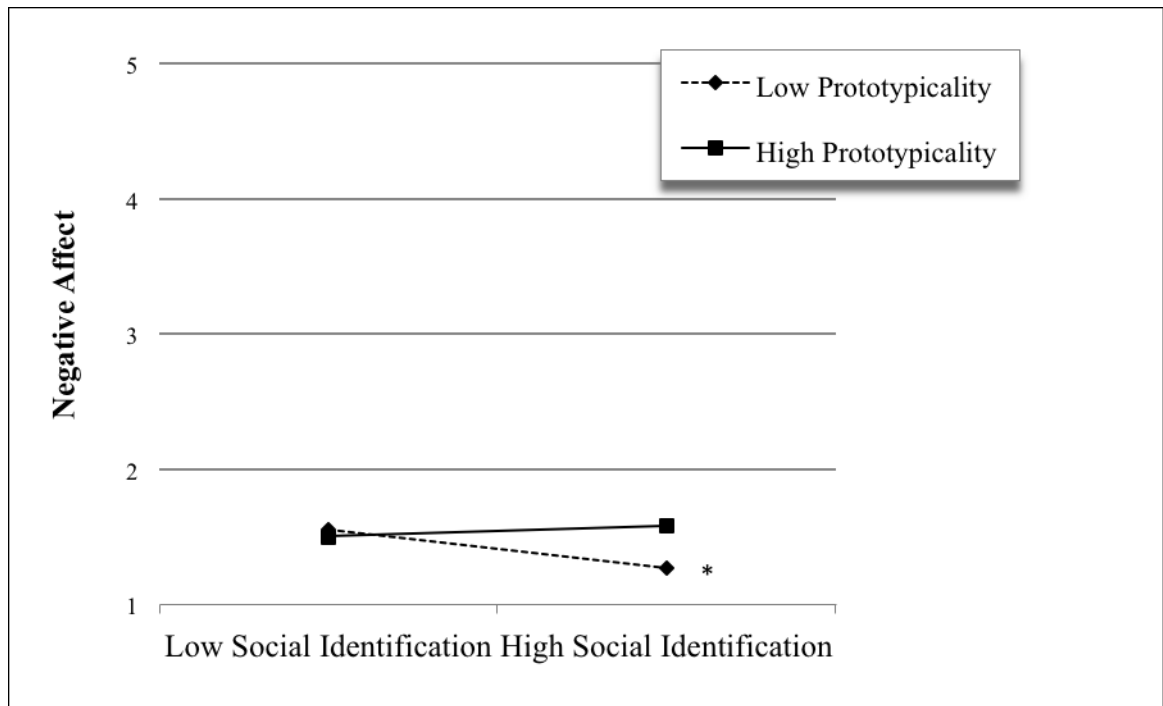
Figure 20. Study 5 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on negative affect

Note: * denotes significant slope

Discussion Study 5

The results of Study 5 support the main effects model for social identification (H2). Social identification significantly predicted scores on all of the psychological well-being measures. However, despite the manipulation of self-in-group prototypicality not significantly predicting any outcome variables independently, in Study 5 we found a significant main effect for measured prototypicality on a clinical measure of overall distress, both measures of depression, anxiety and social support. This provides considerable evidence to support Hypothesis 3 that prototypicality independently predicts psychological well-being. However, given these results demonstrating a main effect for prototypicality are inconsistent with the findings of the previous three studies contained in the current thesis, they are to be treated cautiously, especially given we do not find the same effect for the manipulated prototypicality variable. It is possible that the manipulation of prototypicality may have also influenced responses on the PSIPS. Finally, the results of Study 5 show that measured self-in-group prototypicality moderated the positive effects of social identification on

psychological well-being (H4), but for only one outcome variable – negative affect. Relatively lower perceived self-in-group prototypicality predicted significantly less negative affect when participants were relatively higher in identification.

General Discussion

I set out in the current chapter to evaluate the predictive role of relative levels of social identification and perceived self-in-group prototypicality on various measures of psychological well-being. In particular, the experimental design of Studies 4 and 5 sought to specifically determine if there was any causal influence of perceived self-in-group prototypicality on psychological well-being. Drawing on findings in the literature, I hypothesised that higher levels of both social identification and prototypically, either separately or multiplicatively, would predict increased psychological well-being. In the end, the results of the two studies confirmed the previous findings of a positive relationship between social identification and psychological well-being. Manipulated perceived self-in-group prototypicality did not predict any psychological well-being measures independently, however it was shown to enhance the positive effects of social identification on several measures, including positive affect and depression in Study 4, but for no outcome measures in Study 5. This is an important finding given the manipulation of prototypicality accurately predicted both positive and negative psychological well-being measures. This result was further supported by finding that measured prototypicality enhanced the effects of social identification on positive affect and depression in Study 4, (albeit with a different measure of depression). For the first time we find causal evidence that self-in-group prototypicality interacts with social identification to predict psychological well-being. However, unfortunately we do not find a consistency of these results with those found in Study 5. This is possibly a function of a different manipulation task being used in Study 5 (although the bogus feedback about self-prototypicality was presented in the same format in both studies), however we can not be certain. However, given that in both studies participants assigned to either the high/low prototypicality conditions did not have corresponding scores on the prototypicality measure (PSIPS), this raises questions around whether the manipulation was actually successful in changing participants' self-perception of prototypicality. Below I will discuss issues relating to manipulation of self-in-group prototypicality and its measurement before considering

the pattern of results evident from the analysis that included the measured prototypicality variable.

While similar attempts to manipulate social self-attitudes have been used in previous studies in similar ways (e.g., Hogg, 2001; Platow & van Knippenberg, 2001) the current studies' manipulations did not predict responses on the PSIPS. There are a number of reasons which may have contributed to this that should be considered here. Firstly, the manipulation task for Study 4 (the IAT) and for Study 5 (the PAT) may simply not have been convincing enough; participants may have not accepted the task was actually measuring what it said it was and, hence, the feedback that they were high/low in prototypicality was not believable. If this occurred then participants may have simply ignored it. Given how difficult it can be to get participants to accept that their perceptions of their own prototypicality are incorrect (i.e., they actually see themselves as highly prototypical but the feedback informs them they are low in prototypicality), this would not have been an entirely unexpected result. In fact, participants, instead of simply discounting the feedback, may have reacted to being provided feedback about their prototypicality status in a defensive way. Certainly for those who care about the degree to which they are a prototypical group member (high identifiers), being provided feedback that they were *low* in prototypicality may have done just that, largely because this would have been considered an undesirable state for these individuals. They may have actively denied the results of the manipulation to protect their psychological well-being. Consistent with the self categorisation analysis presented in this thesis, peoples' reactions to being told they are not prototypical may be negative, as low prototypicality may also signal increased threat of exclusion as a consequence of the individual maintaining a peripheral or marginal position in the group (Ellemers & Jetten, 2013). Combined with evidence that individuals are motivated to maintain a good impression of themselves and the impressions others have of them (Leary & Kowalski, 1990), we can see these factors are likely to have had a contributing effect to responses on the PSIPS, which did not coincide with the effects of the prototypicality condition alone. In addition, because both Studies 4 and 5 were conducted on participants' personal computers, wherever participants chose (i.e. not in a laboratory setting), we cannot rule out that the presence of others may have influenced participants' responses to being told they were low in prototypicality. It could also be that the task made participants feel as if they were being 'tested' and or judged and this itself influenced psychological well-being rather than prototypicality. Certainly, future

studies that intend to manipulate self-in-group prototypicality should consider these aspects in their study and manipulation design to determine which, if any, of these possible impacts contributes to the manipulation's successful alteration of perceptions of one's own prototypicality.

A fundamental requirement of the self-categorisation analysis of psychological well-being outlined in this thesis is that social identification and perceived self-in-group prototypicality (as I conceptualise it) can be measured separately. Indeed, if I found this was not the case, I would not be able to examine the effects of these factors (independently or multiplicatively) on psychological well-being. As in Studies 1, 2 and 3, I find here that the PSIPS scale items measured a construct separate from the social identification scale items. One aspect of the order of the presentation of the PSIPS in the study design, however, may have had a number of unforeseen consequences. The first is that because the PSIPS needed to be administered prior to the outcome measures, it is possible this altered the effect of the manipulation on participants' responses to the psychological well-being measures. While I acknowledge this potentially confounding aspect of the study design, there was little that could have been done about it, except by altering the order of administration of this scale too, which would have had its own complications. For instance, it could have influenced participants' responses on other measures included in the study and hence reduced the ability to compare results between each empirical study within the current thesis. Removing the scale all together would have posed its own problems as well, because an aim of the current work was to determine if prototypicality could be measured separately from social identification. Once again, this issue will be an important consideration in future study designs.

Let us now consider the pattern of results of both studies in terms of the measured prototypicality variable (the PSIPS) alone. We find three key features. First, social identification was further demonstrated to be a strong independent predictor of positive psychological well-being across a variety of outcome measures. Second, for the first time perceived self-in-group prototypicality was found to have an independent effect on a number of outcome variables. Third, relative perceived self-in-group prototypicality tended to moderate social identification's effects on a number of outcome measures, including positive affect and depression. Below I consider each one of these in turn.

On their own, participants' relative levels of social identification played a prominent role in predicting psychological well-being in both studies. In the case of

Study 4, social identification was a significant predictor of only two variables (satisfaction with life and social support). In Study 5, social identification predicted all of the positive well-being (social connectedness and positive affect) and negative well-being outcome measures (overall distress, both measures of depression, anxiety and stress). The exact pattern is not wholly consistent across both studies, although, when taken together, the results are consistent with the original observations that social identification is largely beneficial to psychological well-being. In Study 4, we find social identification only predicts social support and satisfaction with life and not the affect and distress related measures of psychological well-being. This leads us to ponder why and examine the differences between Study 4 and Study 5 to determine this. It could be that the manipulation task itself directly influenced the category content or meaning of the identity, participants' degree of identification as an ANU student, or their actual self-in-group prototypicality judgment. For instance, in Study 4 a low status out-group comparison was included in the IAT task, and academically positive qualities were ascribed to the ANU student category. Both of these artefacts of the manipulation task could have enhanced identification and reduced the effect of the prototypicality feedback to manipulate actual perceptions of participants.

In contrast to the findings of Studies 2 and 3, the results of the studies presented in this chapter show perceived self-in-group prototypicality can make an independent contribution to a number of well-being measures. This is an important finding and suggests further interrogation of the prototypicality concept is warranted and required. Indeed, finding perceived self-in-group prototypicality has an effect on psychological well-being separate to social identification provides further evidence for the need to measure these two concepts separately. It could be that prototypicality represents an equally important route to psychological well-being as social identification, one that has been overlooked prior to now. Finding a main effect for prototypicality in no way detracts from the importance of social identification to psychological well-being. Instead it provides support for the consideration of another aspect of self-categorisation. Certainly, this thesis represents the first step in this direction, and suggests prototypicality may assist us to explain the differential effects of social identification on psychological well-being demonstrated in the literature. Certainly the results of the current empirical work potentially validates the relative power of perceived self-in-group prototypicality in determining the effects of social identification on psychological well-being.

Finally, let us consider when perceived self-in-group prototypicality moderated the effects of social identification. While in Study 4 we find significant multiplicative effects for both variables on psychological well-being, specifically positive affect and depression, in Study 5 we find this effect only for negative affect. Individuals' psychological well-being is clearly being enhanced by participants' perceiving themselves as high in relative prototypicality. For these people, their group membership was likely to be particularly powerful in defining who they are and higher prototypicality enhanced the value of this to their psychological well-being. However, as noted above, these effects were inconsistent across the two studies. Once again, the effects of the different manipulation tasks on the measures administered subsequently (i.e. being either told about one's degree of self-in-group prototypicality, or having prototypicality tested), could be playing a part in these observed inconsistencies across the studies. It is also a fundamental premise of the social identity approach that the groups with which people identify vary in normative meanings (Turner et al., 1987) and comparative fit processes (in-particular the nature of the out-group in relation to the salient social identity). Certainly, Studies 4 and 5 do differ in regards to this second point. This points to other social and psychological processes that need to be considered in future work. Finally, we find the significant moderation effects for depression and negative affect were in a surprising direction. The positive benefits of high identification (predicting less negative affect and depression) were only revealed when participants also saw themselves as lower in prototypicality. Despite this, the strongest finding of the current studies was that manipulated prototypicality, significantly moderated the effects of high identification on scores on the depression measure. The positive effects of high identification on depression were only able to be seen once we considered self-judgments of prototypicality.

Conclusion

In summary, the two studies that were presented in the current chapter provide evidence to support the social identity analysis of psychological well-being presented in the current thesis. Having relatively higher social identification is clearly associated with greater psychological well-being. Moreover, and as a novel contribution of the current work, these positive effects were shown to be enhanced multiplicatively when people also saw themselves as relatively highly in-group prototypical in some instances

and relatively lower in-group prototypical in other instances. As discussed, there are a number of reasons that could occur including the category content or meaning of the social identity, valence of the social identity itself and individual factors including impression management. In addition, we find that participants' assigned to the higher prototypicality condition, who were also highly identified as an ANU student, endorsed significantly less symptoms of depression than those who reported being lower in identification (only in Study 4). In addition, those assigned to the higher prototypicality condition, who were also lower in identification , endorsed significantly less positive affect (once again only in Study 4). It is worth noting here, however, that while the range of the scores on the measure of depression were at no time indicative of clinical levels of depression (i.e. diagnosable depression) higher prototypicality significantly enhanced the positive effects of social identification in reducing endorsement of overall depression symptoms. This result is particularly noteworthy as it provides the first *causal* evidence for prototypicality moderating of the positive effects of social identification on psychological well-being.

On a final note, Studies 4 and 5 also demonstrated that seeing oneself as a highly prototypical group member (as measured by the PSIPS) in some cases also independently predicted higher psychological well-being. This further highlights the importance of considering prototypicality in the social identity analysis of psychological well-being provided by this thesis. While the results of the studies reported here support previous evidence that higher social identification with a salient psychological (and positively valenced) group is positively related to psychological well-being, it demonstrates for the first time that seeing oneself as relatively prototypical of an important social identity can both enable these effects to be seen and is in some instances equally important to psychological well-being as social identification itself.

CHAPTER 9

Study 6: Social Identification and perceived self-in-group prototypicality predicts overall psychological well-being

Chapter Overview

The four empirical studies reported in the previous two chapters of this thesis aimed to examine the role of social factors in psychological well-being by examining two self-categorisation theory concepts, social identification and prototypicality. Overall, the results provide evidence to support the empirical hypotheses that prototypicality and social identification independently and multiplicatively explain the differential impacts of social group membership on people's psychological well-being. However, as previously mentioned, there are some inconsistencies in the patterns of results found across each of the previously reported studies (e.g., each study found significant effects on different outcome measures and social identification and self-in-group prototypicality interacted in a number of ways). Thus, in one final study, Study 6, I combined the data from each of the empirical studies conducted, into one large data set and conduct a final hierarchical regression (consistent with the used in the individuals studies) to test the consistency and validity of the effects. Therefore, this study enabled evaluation of the same hypotheses with a much larger sample size. Specifically for the outcome variables - satisfaction with life, social support and social connection (N=569), positive affect, negative affect and depression (N=464), stress, anxiety, depression and distress – as measured by the DASS-21 (N=398) and self esteem (N=274).

Because the current study utilised the same measures employed in the previous four studies (reported in the previous two chapters), I do not repeat them here. Instead, please refer to previous chapters for a detailed description. Note however that not all measures were employed across all studies, resulting in differences in the sample size for each outcome variable reported in this study. Social support, social connectedness and satisfaction with life were measured across all four studies; positive and negative

affect, depression (CES-D) and (DASS-21) were measured in three studies; and self esteem was measured in only two studies.

Method

Participants. Two hundred and forty-nine male and three hundred and twenty female (N=569) ANU students voluntarily participated in three separate samples that measured the same variables. Of the final data set, sample 1 comprised 171 participants (30%), sample 2, 103 participants (18%), sample 3, 125 participants (22%) and sample 4, 170 (30%). Ages ranged from 17 to 49 years (median=19 years). Four hundred and seventy-three (83%) participants reported English was their first language.

Results

As I tested whether the social identity and prototypicality scale items measured separate constructs previously (see Study 1 of this thesis) I do not report this again here, but simply note that the measurement model of these scales items supported hypothesis 1, that they do indeed measure separate constructs.

Thus, I calculated an average of the items within the social identity and prototypicality scales for each participant. I also calculated the average of each of the other multi-item measures that were used and examined their relationship with other scales. Table 16 presents Cronbach's alphas, means, standard deviations and pair-wise correlations for each scale.

As can be seen, reported social identification was significantly higher than the midpoint of the scale, $t(568)=33.5$, $p<.001$, suggesting participants strongly identified as an ANU Student or University Hall Resident across the entire dataset. Similarly, self-in-group prototypicality was significantly higher than the scale's midpoint (which was 4), suggesting participants saw themselves as generally highly prototypical group members. Participants also had significantly higher levels of social identification than prototypicality, $t(568)=18.32$, $p<.001$. Satisfaction with life, social support, social connectedness, positive affect, and self-esteem ($ps<.001$) were all significantly greater than the sale mid-point; whereas the depression measures (i.e., CES-D, all the DASS-21 subscales and negative affect (as measured by the PANAS)) were all significantly lower than their respective scale mid-points ($ps<.001$).

The negative psychological well-being measures (i.e., stress, anxiety, depression and psychological distress) all significantly negatively correlated with each of the positive well-being measures (i.e., positive affect, satisfaction with life, social support, social connectedness, and self-esteem). Each negative well-being measure also positively correlated with each other, suggesting divergent and convergent validity between the well-being scales. Social identification and self-in-group prototypicality were also significantly correlated with each other ($p<.001$). Closer examination of the collinearity statistics (tolerance and variance inflation factors (VIF)) found these were all within acceptable limits (VIF < 2) and the assumption for multi-collinearity was met (Coakes, 2005; Hair et al., 2012).

PROTOTYPICALITY & PSYCHOLOGICAL WELL-BEING

184

Table 16. *Study 6 means, standard deviations, Cronbach's alphas and correlations between variables*

Scale	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12
1. Social Identification[!]	5.62[a]	1.20	.85	-											
2. Prototypicality (PSIPS)[!]	4.42[a]	1.17	.83	.60***	-										
3. Positive Affect[$]	2.68[b]	.82	.88	.25***	.20***	-									
4. Negative Affect[$]	1.89[b]	.81	.86	-.06	-.02	-.12**	-								
5. Satisfaction with Life[!]	4.81[a]	1.40	.87	.39***	.24***	.27***	-.22***	-							
6. Social Support[!]	5.36[a]	1.23	.90	.42***	.24***	.18***	-.23***	.50***	-						
7. Social Connectedness[!]	5.58[a]	1.05	.70	.49***	.20***	.23***	-.11**	.35***	.51***	-					
8. Stress (DASS-S)[@]	1.99[c]	.70	.88	-.14***	-.10	-.16***	.41***	-.33***	-.27***	-.15***	-				
9. Anxiety (DASS-A)[@]	1.63[c]	.59	.86	-.12**	-.05	-.08	.46***	-.32***	-.30***	-.20***	.75***	-			
10. Depression(DASS-D)[@]	1.84[c]	.75	.84	-.28***	-.15***	-.27***	.37***	-.53***	-.38***	-.26***	.73***	.67***	-		
11. Distress (DASS-21)[@]	1.82[c]	.61	.90	-.21***	-.11**	-.20***	.45***	-.44***	-.36***	-.23***	.92***	.88***	.90***	-	
12. Depression (CES-D)[$]	1.86[c]	.54	.88	-.30***	-.15***	-.14**	.34***	-.45***	-.39***	-.29***	.76***	.74***	.85***	.87***	-
13. Self-Esteem[#]	4.68[a]	1.65	---	.17***	.05	.30***	-.47***	.58***	.37***	.30***	-.41***	-.41***	-.48***	-.49***	-.50***

**p<.01, ***p<.001; [a]Measured on a scale from 1 – 7; [b]Measured on a scale from 1 – 5; [c]Measured on a scale from 1- 4. [!] N=569; [$] N=464; [@] N=398 ; [#] N=274. Note: correlations between the DASS-21 and its subcomponents are inflated as the full DASS-21 includes those subcomponents

Main Analysis

To analyse the relationship between social identification, prototypicality and measures of psychological well-being, I conducted a series of linear hierarchical regressions following the same models I used in the previous chapters. As noted in the individual descriptions of each study, some measures were not employed across all samples, so the sample size for each model varied. However, each of these sample sizes were deemed adequate for the large number of independent variables included in each analysis (Tabachnick & Fidell, 2007). It should also be noted that in Studies 4 and 5, an experimental manipulation of prototypicality as well as the explicit measure of prototypicality (PSIPS) was employed. As reported in Chapter 6 of this thesis, because the manipulation did not significantly predict responses on the PSIPS, this suggests the manipulation had not been successful. Thus, the explicit measure of prototypicality (PSIPS) was used in all models in this study. Each of the predictors and their interaction were grand mean-centred (Aiken & West, 1991) prior to entering them into the models.

A four stage multiple hierarchical regression was then conducted for each of the measures of psychological well-being, with the same predictors entered at the same stages in each hierarchical regression model. Firstly, I included the sample from which the data were derived to control for differences across samples. Second, age, gender, English as a first language and whether the participant had experienced a major life stressor in the past six months were entered. Third, social identification and prototypicality were entered and then the interaction between them was entered in the final step. I conducted a total of eleven hierarchical regression analyses, the results of which are presented in Table 17.

The results of the hierarchical multiple regression revealed that whether participants had a stressor in the last six months significantly predicted self-esteem, satisfaction with life, both measures of depression (CES-D) and (DASS-D), stress, anxiety, negative affect and overall distress (DASS-21). The mean differences between men (*M*=1.99, *SD*=.90) and women (*M*=1.68, *SD*=.72) for negative affect were significant (*p*<.05), as was the mean difference between men (*M*=1.78, *SD*=.48) and women (*M*=1.89, *SD*=.55) for depression (*p*<.05) and social connectedness between men (*M*=1.67, *SD*=.44) and women (*M*=1.87, *SD*=.57)(*p*<.05). Women were more likely to endorse higher levels of negative affect, depression symptoms and social connectedness. The mean difference was also significant between those who have

English as a second language (ESL) (*M*=5.24, *SD*=.96) compared to those whose first language was English (EFL) (*M*=5.48, *SD*=1.03) on: social connectedness; stress ESL (*M*=1.74, *SD*=.59), EFL (*M*=1.98, *SD*=.72); depression (DASS-D) ESL (*M*=1.62, *SD*=.66), EFL (*M*=1.81, *SD*=.73), and distress ESL (*M*=1.63, *SD*=.52), EFL (*M*=1.80, *SD*=.61).

Participants' relative levels of social identification served as a significant predictor for all the outcome variables (*ps*<.001), except negative affect. This occurred even after controlling for sample, age, gender, English as a second language and the recent experience of a major life stressor. Higher levels of social identification with a university student or university dormitory predicted higher levels of psychological well-being. Prototypicality was also found to be significantly and *independently* related to anxiety (*p*<.05) and marginally related to positive and negative affect. Higher perceived relative in-group prototypicality predicted lower levels of anxiety symptoms. In addition, prototypicality significantly moderated the effects of social identification on self-esteem, satisfaction with life, social connectedness, depression (CES-D), anxiety, stress, and positive affect. These interactions are presented in Figures 21a – 21f, with values estimated at one standard deviation above and below the mean.

Table 17.

Models Tested in Study 6

Outcome Variables		AdjR^2 change	B	Std. Error	β	t	95% CI
1. Self-esteem	Constant		2.32	.99			
$F_{(1, 272)}=5.79^*$	Sample 2	.02	-.23	.22	-.07	-1.04	-.68, .21
	Age		.13	.05	.16	2.52*	.03, .23
	Gender		.05	.20	.02	.25	-.33, .43
	ESL		.19	.27	.04	.71	-.34, .73
$F_{(5, 268)}=3.03^*$	Stressor	.04	-.11	.05	-.04	-2.36*	-.21, -.02
	Social Identification		.41	.12	.28	3.29**	.17, .65
$F_{(7, 266)}=3.33^{**}$	Prototypicality	.06	-.15	.11	-.10	-1.38	-.36, .06
$F_{(8, 265)}=3.47^{**}$	Interaction	.07	.14	.07	.13	2.03*	.004, .27
2. Satisfaction with Life	Constant		4.58	.49			
	Sample 2		-.28	.17	-.08	-.169	-.61, .05
	Sample 3		.20	.17	.06	1.21	-.12, .52
$F_{(3, 565)}=9.83^{***}$	Sample 4	.05	-.26	.15	-.08	-1.77	-.55, .03
	Age		-.26	.02	.05	1.25	-.02, .08
	Gender		.04	.11	.01	.33	-.18, .25
	ESL		-.12	.14	-.03	-.82	-.40, .16

Models Tested in Study 6

	Predictor	R^2	B	SE	β	t	CI
$F(7, 561)=6.52^{***}$	Stressor	.06	-.10	.03	-.15	-3.91***	-.15, -.05
	Social Identification		.51	.07	.43	7.81***	.40, .63
$F(9, 559)=14.72^{***}$	Prototypicality	.18	-.04	.06	-.04	-.71	-.16, .07
$F(10, 558)=13.91^{***}$	Interaction	.19	.08	.03	.10	2.36*	.01, .14
3. Social Support	Constant		4.70	.43			
	Sample 2		.02	.15	.01	.11	-.27, .31
	Sample 3		.46	.15	.15	3.17**	-.18, .74
$F(3, 565)=4.40^{*}$	Sample 4	.02	.23	.13	.08	1.74	-.03, .48
	Age		.03	.02	.05	1.30	-.01, .07
	Gender		.08	.10	.03	.81	-.11, .27
	ESL		-.02	.13	-.00	-.12	-.26, .23
$F(7, 521)=2.37^{*}$	Stressor	.02	-.03	.02	-.05	-1.43	-.08, .01
	Social Identification		.56	.06	.53	9.73***	.45, .67
$F(9, 559)=15.97^{***}$	Prototypicality	.19	-.09	.05	-.09	-1.77	-.19, .01
$F(10, 558)=14.72^{***}$	Interaction	.20	.05	.03	.07	1.72	-.01, .10
4. Social Connectedness	Constant		5.01	.33			
	Sample 2		-.12	.11	-.05	-1.10	-.34, .10
	Sample 3		-.42	.11	-.17	-3.82***	-.64, -.21
$F(3, 565)=19.85^{***}$	Sample 4	.09	.22	.10	.10	2.22*	.03, .41

		R^2	B	SE	β	t	95% CI
	Age		.02	.02	.05	1.44	-.01, .06
	Gender		.15	.07	.07	1.99*	.01, .29
	ESL		-.19	.10	-.07	-2.01*	-.38, -.01
$F(7, 561)=10.10$***	Stressor	.10	-.02	.02	-.04	-1.21	-.06, .01
	Social Identification		.49	.04	.57	11.16***	.40, .57
$F(9, 559)=28.58$***	Prototypicality	.30	-.07	.04	-.08	-1.69	-.14, .01
$F(10, 558)=26.36$***	Interaction	.31	.05	.02	.08	2.15*	.01, .09
5. Depression (CES-D)	Constant		1.47	.20			
	Sample 3		-.09	.06	-.07	-1.42	-.21, .03
$F(2, 463)=.65$	Sample 4	-.001	-.06	.06	-.06	-1.09	-.17, .05
	Age		.01	.01	.03	.60	-.01, .03
	Gender		.13	.05	.12	2.89**	.04, .22
	ESL		-.12	.06	-.09	-2.08*	-.23, -.01
$F(6,459)=9.14$***	Stressor	.10	.07	.01	.30	7.00***	.05, .09
	Social Identification		-.15	.03	-.35	-5.68***	-.21, -.10
$F(8,457)=14.56$***	Prototypicality	.19	.04	.02	.08	1.49	-.11, .08
$F(9, 456)=13.47$***	Interaction	.19	.03	.01	.09	2.00*	.00, .05
6. Positive Affect	Constant		2.77	.33			
	Sample 2		.42	.11	.22	3.84***	.21, .64

		R^2	B	SE	β	t	CI
$F(2, 395)=9.74^{***}$	Sample 4	.04	-.03	.10	-.02	-.35	-.22, .15
	Age		-.01	.02	-.03	-.62	-.04, .02
	Gender		-.05	.08	-.09	-1.85	-.31, .01
	ESL		.18	.10	.08	1.77	-.02, .38
$F(6, 391)=4.17^{***}$	Stressor	.05	.01	.02	.03	.65	-.03, .05
	Social Identification		.19	.05	.27	4.17^{***}	.10, .28
$F(8, 389)=7.50^{***}$	Prototypicality	.12	.08	.04	.12	1.92^{+}	-.00, .16
$F(9, 388)=7.98^{***}$	Interaction	.14	.07	.02	.17	3.22^{**}	.03, .12
7. Negative Affect	Constant		1.43	.33			
	Sample 2		.62	.11	.34	5.74^{***}	.41, .84
$F(2, 395)=24.15^{***}$	Sample 4	.10	.06	.09	.04	.67	-.12, .25
	Age		.00	.02	.01	.22	-.03, .04
	Gender		-.20	.08	-.12	-2.56^{*}	-.36, -.05
	ESL		.07	.10	.03	.73	-.13, .27
$F(6, 391)=10.65^{***}$	Stressor	.13	-.06	.02	.14	2.97^{**}	.02, .10
	Social Identification		-.04	.05	-.05	-.84	-.13, .05
$F(8, 389)=8.41^{***}$	Prototypicality	.13	.08	.04	.13	1.94^{+}	-.00, .16
$F(9, 388)=7.93^{***}$	Interaction	.14	.04	.02	.10	1.91^{+}	-.00, .09
8. Overall Distress (DASS-21)	Constant		1.73	.25			

		R^2	B	SE	β	t	95% CI
	Sample 2		.10	.08	.07	1.23	-.06, .28
$F(2, 395)=3.82^*$	Sample 4	.01	.21	.07	.17	3.01^{**}	.07, .35
	Age		-.02	.01	-.07	-1.52	-.04, .01
	Gender		-.01	.06	.01	.18	-.11, .13
	ESL		-.16	.08	-.10	-2.06^*	-.30, .01
$F(6, 391)=7.08^{***}$	Stressor	.08	.08	.01	.26	5.51^{***}	.05, .11
	Social Identification		-.12	.03	-.23	-3.55^{***}	-.18, -.05
$F(8, 389)=7.99^{***}$	Prototypicality	.12	.05	.03	.12	1.78	-.01, .12
$F(9, 388)=7.36^{***}$	Interaction	.13	.02	.02	.08	1.48	-.01, .06
9. Depression (DASS-D)	Constant		1.74	.29			
	Sample 2		.10	.10	.06	1.02	-.09, .29
$F(2, 395)=2.64$	Sample 4	.01	.21	.08	.14	2.51^*	.05, .37
	Age		-.02	.01	-.06	-1.25	-.05, .01
	Gender		-.03	.07	-.02	-.41	-.17, .11
	ESL		-.18	.09	-.09	-1.97^*	-.35, .00
$F(6, 391)=5.17^{***}$	Stressor	.06	.08	.02	.22	4.67^{***}	-.05, .11
	Social Identification		-.19	.04	-.31	-4.85^{***}	-.27, -.12
$F(8, 389)=8.54^{***}$	Prototypicality	.13	.07	.04	.12	1.81	-.01, .14
$F(9, 388)=7.71^{***}$	Interaction	.13	.02	.02	.06	1.05	-.02, .06

	Predictor	R^2	B	SE	β	t	95% CI
10. Anxiety (DASS-A)	Constant		1.73	.24			
	Sample 2		.14	.08	.11	1.83	-.01, .30
$F(2, 395)=2.49$	Sample 4	.01	.18	.07	.15	2.64**	.05, .31
	Age		-.03	.01	-.11	-2.31*	-.05, .00
	Gender		.04	.06	.03	.69	-.07, .15
	ESL		-.06	.07	-.04	-.81	-.20, .09
$F(6, 391)=5.20***$	Stressor	.06	.07	.01	.24	4.90***	.04, .10
	Social Identification		-.08	.03	-.15	-2.20*	-.14, -.01
$F(8, 389)=5.08***$	Prototypicality	.08	.06	.03	.14	2.05*	.00, .12
$F(9, 388)=5.08***$	Interaction	.09	.03	.02	.12	2.16*	.00, .07
11. Stress (DASS-S)	Constant		1.72	.29			
	Sample 2		.05	.10	.03	2.31	-.14, .24
$F(2, 395)=4.45*$	Sample 4	.02	.24	.08	.17	2.89**	.08, .40
	Age		-.01	.01	-.03	-.69	-.04, .02
	Gender		.02	.07	.01	.29	-.12, .16
	ESL		-.23	.09	-.12	-2.56*	-.40, -.05
$F(6, 391)=7.34**$	Stressor	.09	.09	.02	.25	5.19***	.05, .12
	Social Identification		-.09	.04	-.15	-2.28*	-.17, -.01
$F(8, 389)=6.63***$	Prototypicality	.10	.04	.04	.07	.99	-.04, .11

$F_{(9, 388)}=5.98^{***}$	Interaction	.10	.02	.02	.05	.90	-.02, .06

$^+$p<.10, *p<.05, **p<.01, ***p<.001

For "ESL", English as a second language was coded as 1 and English as a first language was coded as 0.

For gender, male was coded 0 and female was coded 1.

As can be seen, the relationship between social identification and various indicators of psychological well-being was moderated by the degree to which participants saw themselves as a prototypical group member. Overall, participants reported higher levels of psychological well-being (specifically higher levels of self-esteem, positive affect, satisfaction with life, social connectedness and lower levels of depression and anxiety as social identification and perceived self-in-group prototypical also increased). In the case of self-esteem, the slope of the lines for both higher prototypicality ($t(271)=3.41$, $p<.001$) and lower prototypicality ($t(271)=2.28$, $p<.05$) were significant. For satisfaction with life, the slope of the lines for both higher prototypicality ($t(567)=7.19$, $p<.001$) and lower prototypicality ($t(567)=6.88$, $p<.001$) were significant. For social connectedness the slope of the lines for both higher prototypicality ($t(567)=9.81$, $p<.001$) and lower prototypicality ($t(567)=10.46$, $p<.001$) were significant. Nevertheless for these three outcome variables (self-esteem, satisfaction with life and social connectedness), higher prototypicality enhanced the negative effects of lower social identification on psychological well-being (as evidenced by the significant interaction).

For positive affect, the slope of the lines for both higher prototypicality ($t(396)=4.63$, $p<.001$) and lower prototypicality ($t(396)=2.68$, $p<.01$) were significant. In the case of this outcome variable, higher prototypicality enhanced the positive effects of higher social identification on psychological well-being.

For anxiety, the slope of the line for lower prototypicality was significant ($t(396)=-3.35$, $p<.001$) but not that for higher prototypicality ($t(396)=-.94$, $p=.35$). For depression, the slope of the lines for both higher prototypicality ($t(465)=-3.80$, $p<.001$) and lower prototypicality ($t(465)=-6.87$, $p<.001$) were significant. Surprisingly, for these two negative well-being measures lower prototypicality enhanced the protective effect of high identification on psychological well-being.
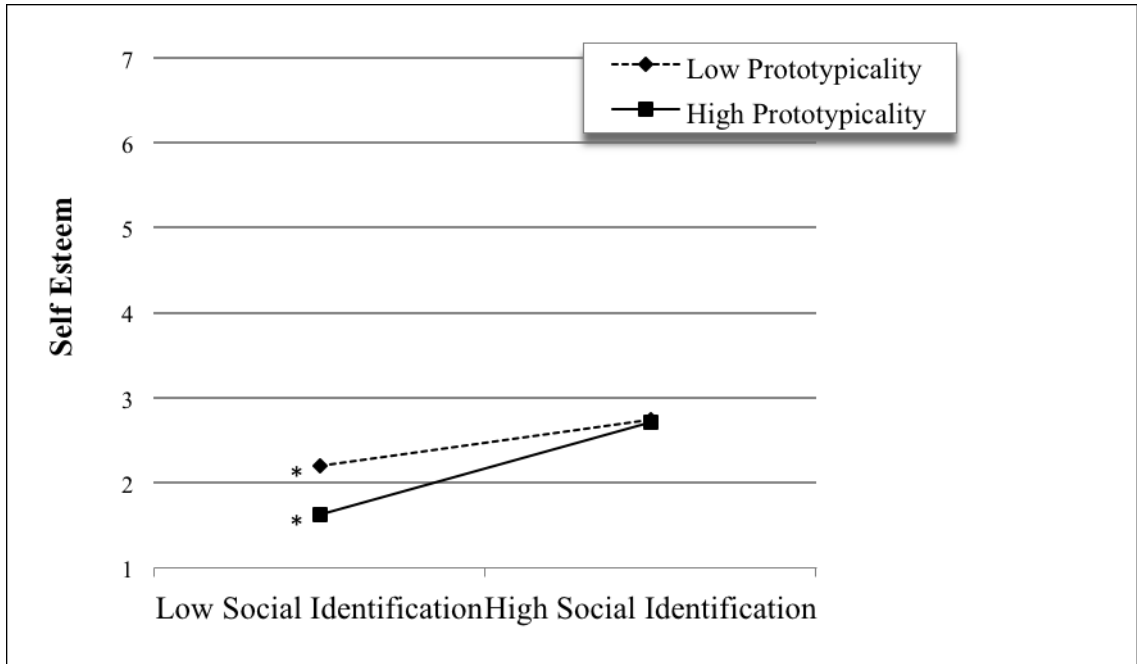
Figure 21a. Study 6 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on self-esteem
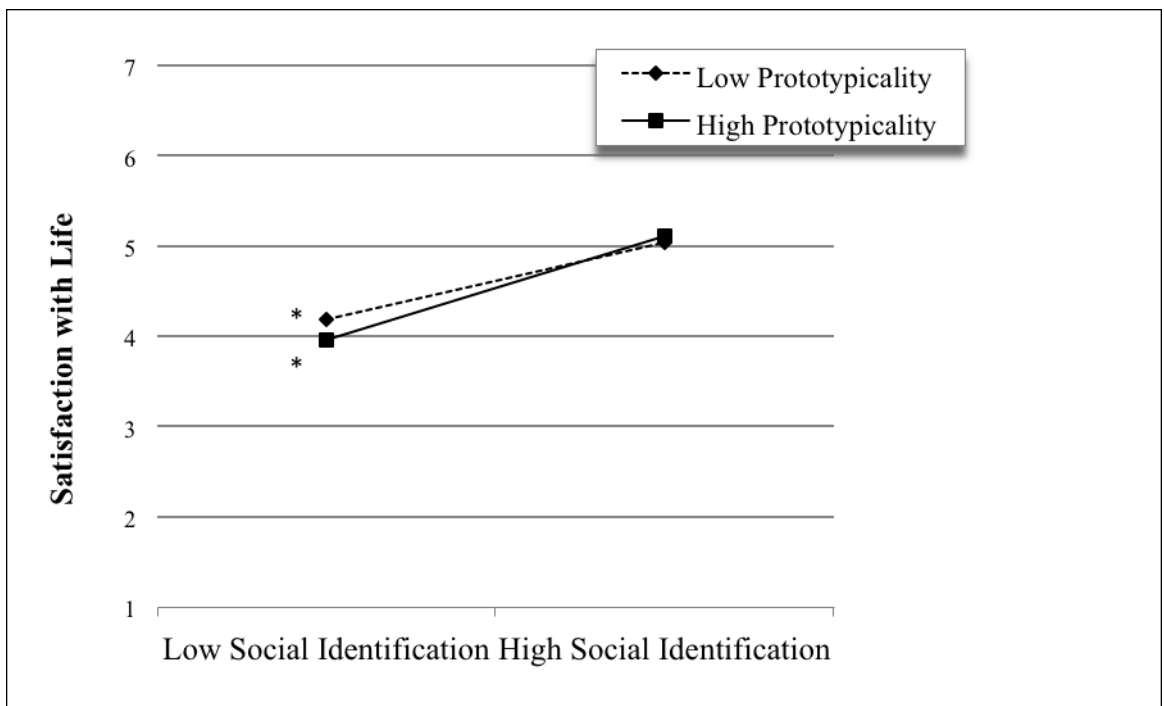
Note: * denotes significant slope

Figure 21b. Study 6 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on satisfaction with life

Note: * denotes significant slope
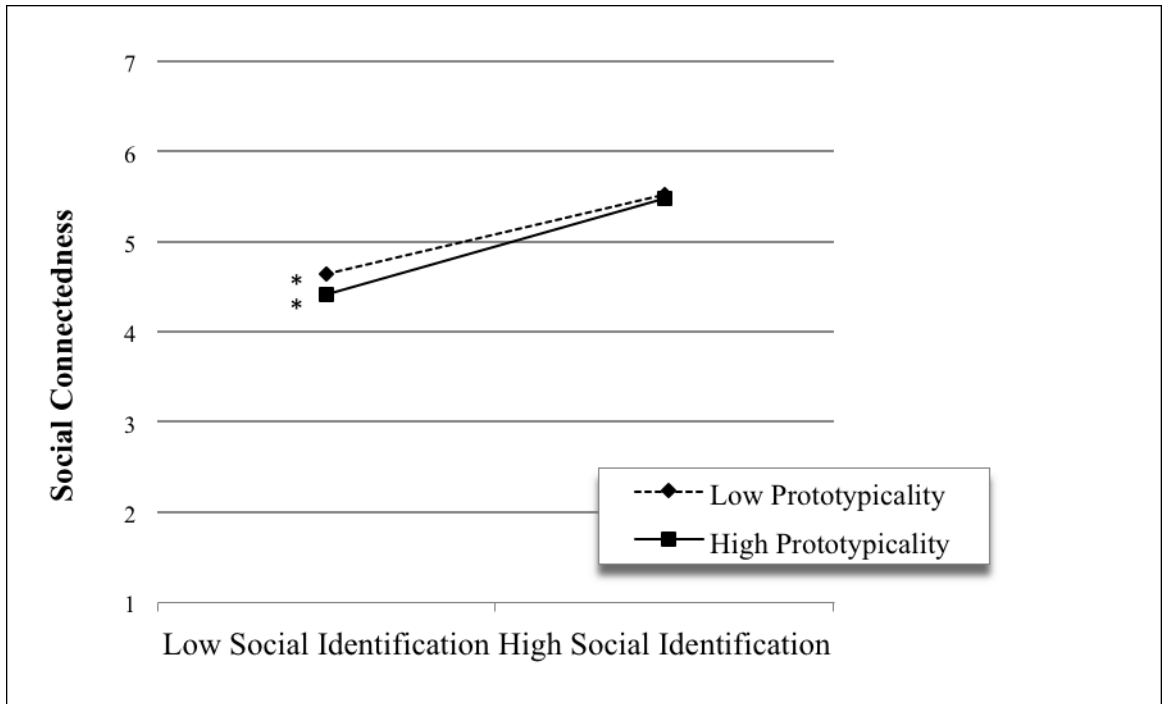
Figure 21c. Study 6 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on social connectedness

Note: * denotes significant slope

Figure 21d. Study 6 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on positive affect

Note: * denotes significant slope

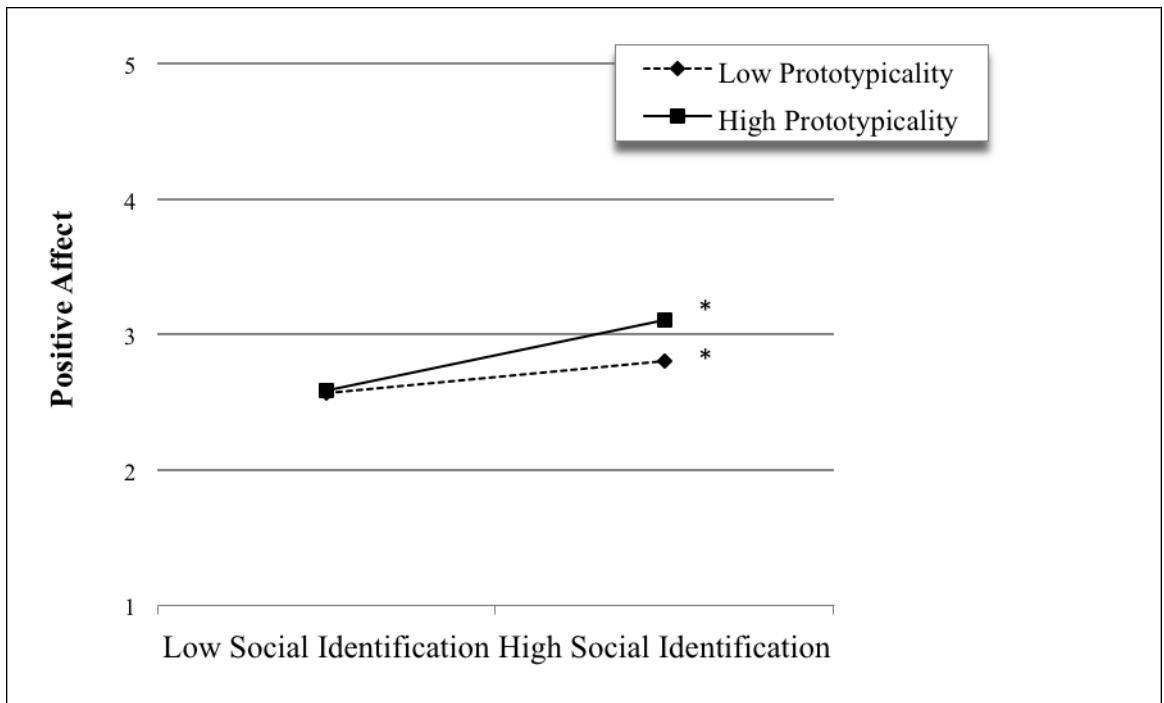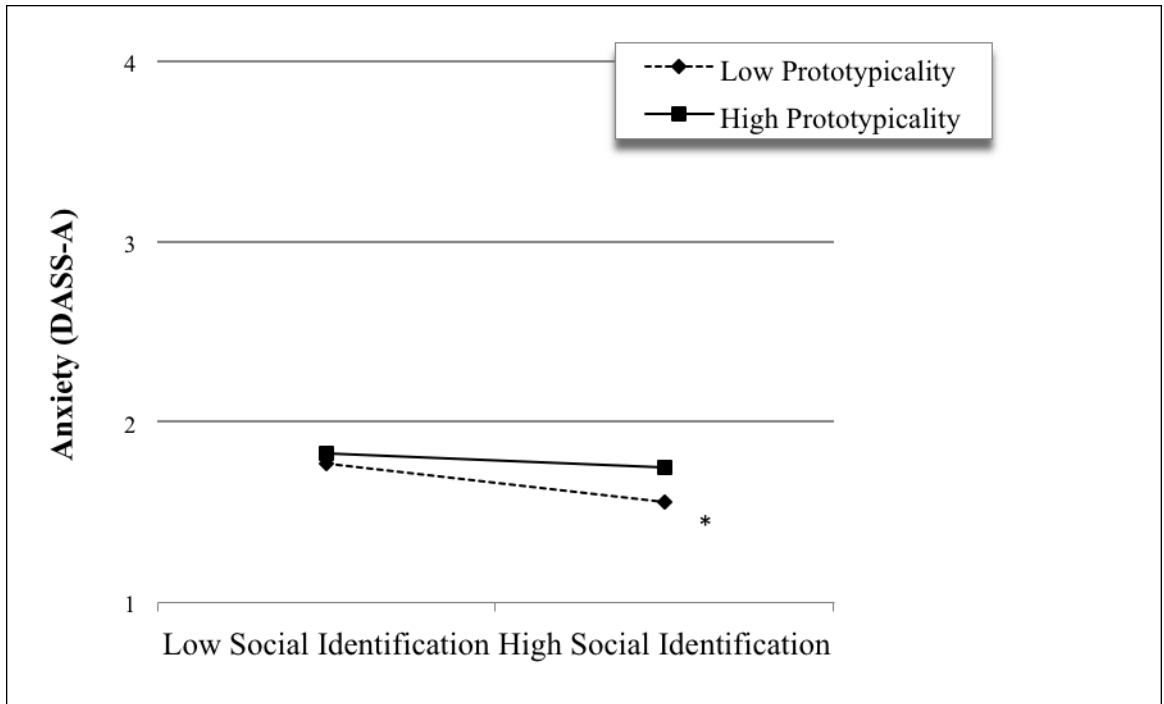*Figure 21e.* Study 6 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on anxiety
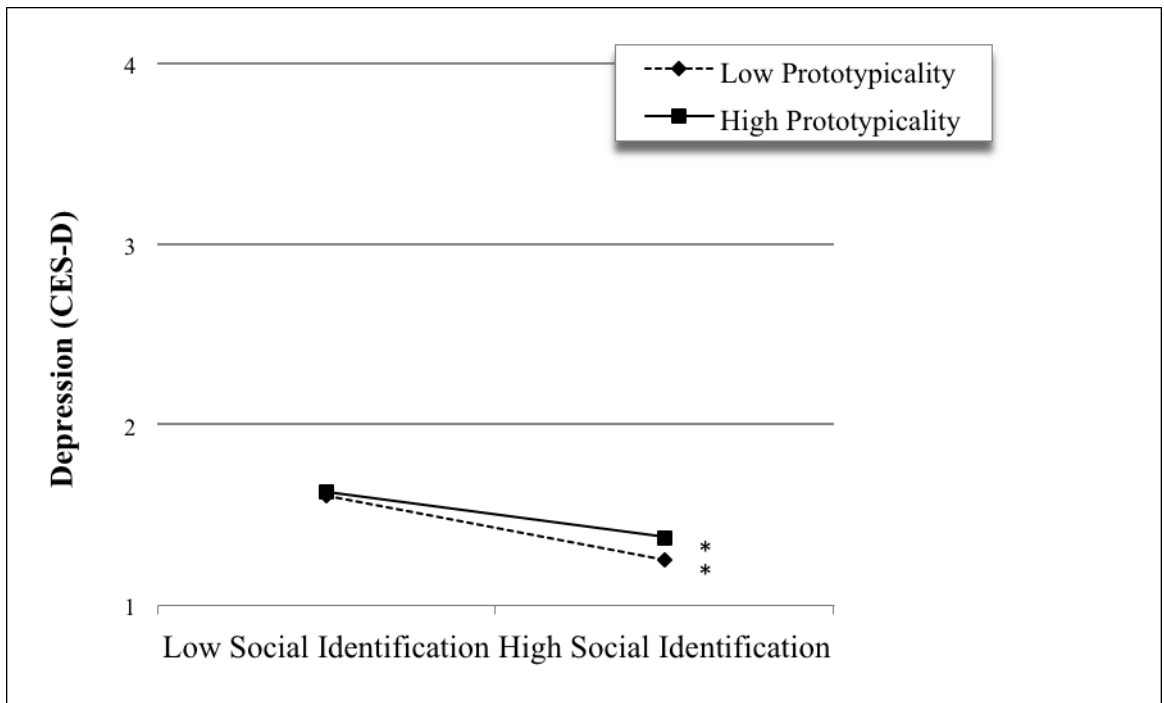
Note: * denotes significant slope

Figure 21f. Study 6 statistically significant interaction between salient social identity and perceived self-in-group prototypicality on depression

Note: * denotes significant slope

Discussion Study 6

The results of this final study (which combined the data from four separate studies) confirms the findings obtained in the individual studies that social identification is an important predictor of several measures of positive and negative psychological well-being (H2). Prototypicality was also shown to independently predict anxiety, supporting (H3). These results extend previous work by providing evidence for support of Hypothesis 4, that prototypicality moderates *the positive effects of social identification* on several measures of psychological well-being. However, the pattern of these moderation effects were not entirely consistent with the pattern of effects in the single studies for a number of outcome variables. For the first time in this thesis, findings of empirical work revealed the negative effects of low social identification on psychological well-being were enhanced when participants perceived themselves to be relatively higher in prototypicality. Reasons for this are examined further in the discussion.

I set out in the current chapter to more fully elucidate the predictive role of relative levels of social identification and perceived self-in-group prototypicality on various measures of psychological well-being. As was the case in previous studies reported in this thesis, I anticipated that social identification would serve as a significant predictor of this well-being, and that perceived self-in-group prototypicality would moderate this effect in a number of possible ways. In the end, the results of this study confirmed the previous findings of a positive relationship between social identification and psychological well-being for a number of outcome variables. Higher prototypicality also enhanced the positive effects of higher social identification on positive affect, depression and anxiety. Indeed, once again, the findings indicated that without including perceived self-in-group prototypicality, the full impact of social identification processes would not have been revealed. Most importantly, this study, by virtue of its large sample size, enabled greater confidence in the results and, hence, clearer understanding of the possible nature of the moderating role of perceived self-in-group prototypicality. However, it is important to note that combing the data from the four empirical studies also increased the chance that the same participant may have been counted more than once in Study 6. Certainly efforts were made to limit this (i.e. studies were conducted over a 2 year period, only first year students were included in later studies and slightly different identities aimed to target different participants).

Additionally, combining studies, within which 'different' identities were made salient, may have made comparability an issue. However because the nature of the identities, in each study, were similar (i.e. all of the salient identities where based on being a member of largely positive university social groups and average levels of identification across all studies were high) this suggests it was legitimate to combine the data from each single study in Study 6. This also served to increase validity through comparing the effect of the construct of identification itself, as opposed to any one group identity alone. The findings suggest that not only is it beneficial to identify with one's social group, it is also beneficial (at least for those who *do* strongly identify) to see oneself as a prototypical member of that group. However, in addition, it could be beneficial for those who identify *less* strongly (marginal group members) to see oneself as a *less* prototypical member of that group.

Consistent with the findings of Studies 2-5 reported in this thesis, Study 6 found relatively higher social identification was positively associated with psychological well-being, even after accounting for the sample from which the data was obtained and the covariates of age, gender, English as a second language, and recent experience of a major life stressor. This is important to note, because even after accounting for these effects in Study 6, I find the main effect for social identification remains significant. The ubiquitous effects of social identification still held true when the data from all the studies were combined. Of course, it was important to account for differences across the studies, in terms of the effects of the manipulation in studies 4 and 5 or differences in the identities and comparative out-groups, to ensure any differences between samples were accounted for.

Comparing the pattern of moderation effects in Study 6 to those obtained in the previous studies revealed prototypicality moderated the effects of social identification on psychological well-being in similar ways, but for some outcome variables in a way previously not found (i.e., consistent with Figure 5 depicted in Chapter 4). More specifically, relatively higher prototypicality was shown to have *enhanced* the *negative* effect of low social identification on psychological well-being for a number of outcome measures. This is a pattern of interaction effect uniquely found in Study 6. It appears that, only once the data from all the empirical studies was combined, and analysed as one large dataset, the significance of this effect was revealed. This is an important finding for a number of reasons. First, it demonstrates that prototypicality is relevant for

those highly identified, *and* for those who are relatively less identified. While consistent with recent evidence and theorising that prototypicality is likely to only have an effect for those social group members who are high in social identification (Schmitt & Branscombe, 2001; Steffens et al., 2015), these results additionally suggest that it is also important to consider the effects of prototypicality judgements at varying degrees of identification. In Study 6, for those relatively lower in social identification, it may be that the group was still important to how they saw themselves, but when they also perceived their position in the group as more central (i.e., high prototypicality) this enhanced the negative effects of lower social identification on psychological well-being. These significant moderation effects are consistent with the prediction depicted in Figure 5 (see Chapter 4), where the moderating effects of prototypicality are predicted to occur for those relatively lower in social identification.

How then might one understand the nature of this effect? It could be that if individuals feel less affinity with a social identity (lower social identification), then being highly prototypical of the same identity could be undesirable. The threat of being representative of a social identity which one is not emotionally invested in, could represent a threat of being categorised in a way in which the individual is not happy about. In such cases, being highly prototypical possibly represents being more 'in' a group which one does not necessarily desire to be a member of. The findings of Study 6 therefore demonstrate for the first time that self-judgements of prototypicality do indeed influence psychological well-being for individuals with relatively lower social identification, as well as those with relatively higher identification.

The results of Study 6 also demonstrated social identification can predict both positive and negative well-being measures, and prototypicality moderates the positive effects of social identification on both positive and negative well-being measures. This is inconsistent with Steffens et al.'s (2015) assertion that prototypicality may be related to positive well-being measures alone and instead suggests that social identity processes are also very important to mental health, consistent with the analysis of Cruwys et al. (2014).

Conclusion

The results of this study confirmed previous findings of a positive relationship between social identification and psychological well-being. In addition, it confirmed the findings of the previous studies which comprise the empirical work of this thesis, that

prototypicality significantly moderated the effects of social identification on psychological well-being. The most significant finding of Study 6 was that prototypicality significantly moderated the positive effect of higher social identification on positive affect, depression and anxiety. This supports previous evidence that prototypicality is particulary important for high identifiers (Schmitt & Branscombe, 2001). In the case of positive affect, we find higher prototypicality *enabled* us to see the positive impact of higher identification on psychological well-being. In addition, lower prototypicality *enabled* us to see the positive impact of high social identification on psychological ill-health (i.e. depression and anxiety). For the first time, we also found that higher prototypicality also *enhanced* the negative effects of lower identification to psychological well-being. A particular strength of these findings derives from the large sample size provided by combing data from four independent samples. At the same time, the correlational nature of the study design serves to qualify any causal conclusions. This suggests that replication of these results is required to fully establish the nature of the relationship between social identification, prototypicality and psychological well-being, particularly in relation to self-judgments of prototypicality.

CHAPTER 10

General Discussion

Chapter Overview

In the final chapter, I review the aims and objectives of the current thesis, reiterate the hypotheses developed and tested, and summarise the findings of the empirical work. I then consider some of the theoretical and practical implications of this work, particularly in relation to the biopsychosocial model of psychological-wellbeing. In doing so, I examine how we might apply the knowledge obtained from the current thesis to benefit human-kind's psychological well-being. Finally, limitations of the current research, as well as directions for future research are discussed.

Review of Thesis Aims and Objectives

This thesis set out to use a social identity analysis to bring together the disparate social perspectives in the biopsychosocial model of psychological well-being. It was observed that social factors are very important to psychological well-being and previous attempts to account for these effects have failed to provide a single cohesive conceptual approach. It was argued that a social identity approach is able to address many of the shortcomings of existing work by articulating a mechanism through which societal, group and individualistic levels of analysis interact to explain the role of social factors in psychological well-being. In other words, it was argued that the existing theoretical framework of the social identity approach (SIA) is able to account for how social factors at all levels of analysis are psychologically represented and there-fore come to influence psychological well-being.

In order to test the applicability of this framework in the psychological well-being domain, three broad theoretical hypotheses were directly derived from the social identity approach. These were: 1) the social affinity people feel towards social groups they are a member of (social identification) will enhance psychological well-being, 2) perceiving oneself to be representative of a social group, or embodying the characteristics of group members, or being in a central position within a social group

(prototypicality), will enhance psychological well-being and, 3) the relationship between the social affinity people feel towards social groups (social identification) and psychological well-being will be moderated by perceptions of representativeness or position within a social group (prototypicality).

Certainly previous work demonstrated that *social identification* is largely positively related to psychological well-being. However, some work also demonstrated this is not always the case. In this current thesis I therefore proposed another social identity concept, *prototypicality*, may be used to examine the differences observed in the effect of social identification on psychological well-being. Although the concept of relative in-group prototypicality is well-grounded in extant theory (e.g., McGarty, 1999; Turner et al., 1987) and research (e.g., Koivisto et al., 2013; Platow et al., 2006), the operationalisation of the construct has largely focused on others' perceptions of an individual's prototypicality and typicality (as defined by the intra-group comparison alone). Therefore, I first set out to develop a measure that would examine perceptions of one's own self-in-group prototypicality and determine if this scale would measure prototypicality separately from social identification.

While social identification and prototypicality had been shown to interact to afford differential effects on followers' endorsement of leaders (Steffens et al, 2015), and impact group inclusionary behaviours for marginal group members (Ellemers & Jetten, 2013), little was known about the relationship between these factors and psychological well-being. Similar to evidence that suggested overall higher identification is beneficial to psychological well-being (Jetten et al., 2012), I proposed that higher prototypicality may also be beneficial to psychological well-being. Prototypicality had been suggested to signal to an individual their 'position within the in-group', as a result of increased perceptions that one substantially embodies the characteristics of a group member (Ellemers & Jetten, 2013), or 'fits in' the group. Some work also predicted that higher and lower prototypicality would have different effects on psychological well-being depending on an individual's degree of identification with the group (Steffens et al., 2015). I proposed that prototypicality would moderate the positive effect of social identification on psychological well-being for high identifiers and for low identifiers in different ways. Most broadly, relatively higher identification and higher prototypicality combined were expected to enhance psychological well-being, whereas lower identification and lower prototypicality

combined were expected to predict reduced psychological well-being. Indeed, this is exactly what I found across four unique data sets and a fifth that combined the data from each of these studies. I now examine the pattern of the effects found.

Summary of Empirical Findings

The social identity analysis concepts of social identification and prototypicality explain how social factors come to be psychologically represented, and how this could come to influence psychological well-being. Designed to assess self-judgments of prototypicality, which has not been explored extensively in the past, the Perceived self-in-group Prototypicality scale (PSIPS) was developed and described in depth in Chapter 4. Across four studies and 569 participants, a confirmatory factor analysis demonstrated this 5-item scale measured a separate construct from social identification and had excellent internal consistency. Overall, the empirical work presented in Chapter 4 represents a substantial contribution to the literature by demonstrating self-judgements of prototypicality can be measured using this scale, and this concept can be measured separately from social identification.

The pattern of results, across the empirical studies, were overall consistent with the self-categorisation analysis presented and confirmed the empirical hypotheses of this thesis. These were, 1) social identification and prototypicality can be measured separately, 2) social identification will be positively related to psychological well-being, 3) perceived self-in-group prototypicality will be positively related to psychological well-being and, 4) perceived self-in-group prototypicality would moderate the positive effect of social identification on psychological well-being in a number of possible ways.

The empirical findings from Study 1 demonstrated that perceived self-in-group prototypicality can indeed be measured separately from social identification, confirming Hypothesis 1. The correlational approach of Studies 2 and 3 and the experimental design of Studies 4 and 5 complemented each other and provided evidence to support both hypotheses 2 and 3. Specifically, that social identification and psychological well-being would be positively related (Hypothesis 2) and perceived self-in-group prototypicality would moderate the effects of social identification on psychological well-being in a number of ways (Hypothesis 4). The combination of the data from all four empirical studies in one final analysis in Study 6 provided further support for the same two hypotheses. Overall, the findings confirmed previous empirical work that demonstrated a strong positive relationship between social identification and an

individual's psychological well-being (Jetten et al., 2012). In addition, they revealed that an individual's perceptions of their own degree of prototypicality significantly moderated the positive effects of social identification on psychological well-being, confirming Hypothesis 4. While in most cases this moderation effect *enhanced* the already positive effect of social identification on psychological well-being, in others it appeared to *enable* the effect to be seen. The pattern of significant effects across each of the studies presented in this thesis are summarized in Table 18 and 19. As can be seen in Table 18, the results of studies 2, 3, 4, 5 and 6 a significant main effect of social identification for almost all of the positive and negative measures of psychological well-being. In Studies 5 and 6, a significant main effect for prototypicality was revealed on a number of well-being measures. However, the limited consistency of the main effect for prototypicality across studies and especially when the larger data size enhanced statistical power (in Study 6), suggested these effects must be interpreted with caution. In contrast, a significant moderation effect of prototypicality on social identification was shown across all studies, albeit for different outcome variables and with a different pattern of significant effects found across studies. The inconsistency between studies, in terms of the pattern of moderation effects found, led to the decision to combine the data from Studies 2- 5 in one final analysis (i.e. Study 6) to determine the most robust effects.

Table 18.

Summary of significant effects across all five studies

	Main effect for Social Identification	Main effect for Prototypicality	Moderation effect for Prototypicality on Social identification
Study 2	Self Esteem Social Support Satisfaction with Life Social Connectedness Depression (CES-D)	none	Social Support Social Connectedness
Study 3	Social Support Social Connectedness Satisfaction with Life Positive Affect Distress (DASS-21) Depression (DASS-D)	none	Satisfaction with Life Social Connectedness Negative Affect Positive Affect
Study 4 (Manipulated Prototypicality)	Social Support Social Connectedness Satisfaction with Life Positive Affect	none	Positive Affect Depression (DASS-D)
Study 4 (Measured Prototypicality)	Satisfaction with Life Social Support	Positive Affect	Positive Affect Depression (CES-D) Anxiety (DASS-A)[++]
Study 5 (Manipulated Prototypicality)	Satisfaction with Life Social Support Social Connectedness Distress (DASS-21) Depression (DASS-D) Depression (CES-D) Anxiety (DASS-A) Stress (DASS-S) Positive Affect	None	None

Study 5 (Measured Prototypicality)	Satisfaction with Life	Social Support	Negative Affect
	Social Support	Distress (DASS-21)	
	Social Connectedness	Depression (DASS-D)	
	Distress (DASS-21)	Depression (CES-D)	
	Depression (DASS-D)	Anxiety (DASS-A)	
	Depression (CES-D)		
	Anxiety (DASS-A)		
	Stress (DASS-S)		
	Positive Affect		
Study 6	Self Esteem	Anxiety (DASS-A)	Self-Esteem
	Satisfaction with Life		Satisfaction with Life
	Social Support		Social Connectedness
	Social Connectedness Distress (DASS-21)		Positive Affect
	Depression (DASS-D)		Depression (CES-D)
	Depression (CES-D)		Anxiety (DASS-A)
	Anxiety (DASS-A)		
	Stress (DASS-S)		
	Positive Affect		

In Table 19, I present a summary of the significant moderation effects found across all the studies. I compare each moderation effect with the hypotheses outlined in Chapter 5 where the possible nature of the moderation effect was pictorially represented in four possible combinations (Figures 4-7). These figures are re-presented here for ease of reference. Figures 4 and 5 represent the possible differential effect of higher/lower prototypicality occurring for those higher in identification. In contrast, Figures 6 and 7 represent the possible relationship between these variables for those lower in identification. As we can see, the majority of significant moderation effects took the form of Figures 4 and 5, in which higher prototypicality either 1) significantly *enhanced* the positive effect of social identification on psychological well-being, but only for higher identified group members or, 2) *enabled* the positive effect of social identification on psychological well-being, but only for higher identified group members.
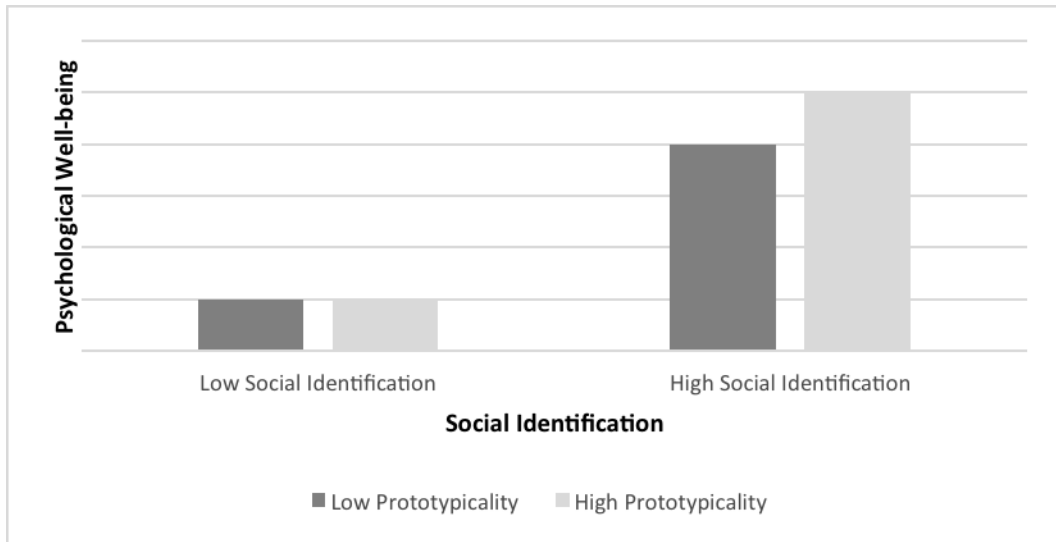
Figure 4. High-perceived self-in-group prototypicality enhances the positive effect of high social identification on psychological well-being.

In a number of cases (all of which were found in Study 6), we find perceived relative in-group-prototypicality predicted psychological well-being for those lower in social identification (consistent with Figure 6). In this case, lower prototypicality reduced the negative impacts of lower identification on psychological well-being on three outcome variables across the five studies. As can be seen in Table 19 no significant moderation effect consistent with Figure 7 were found in any of the studies.
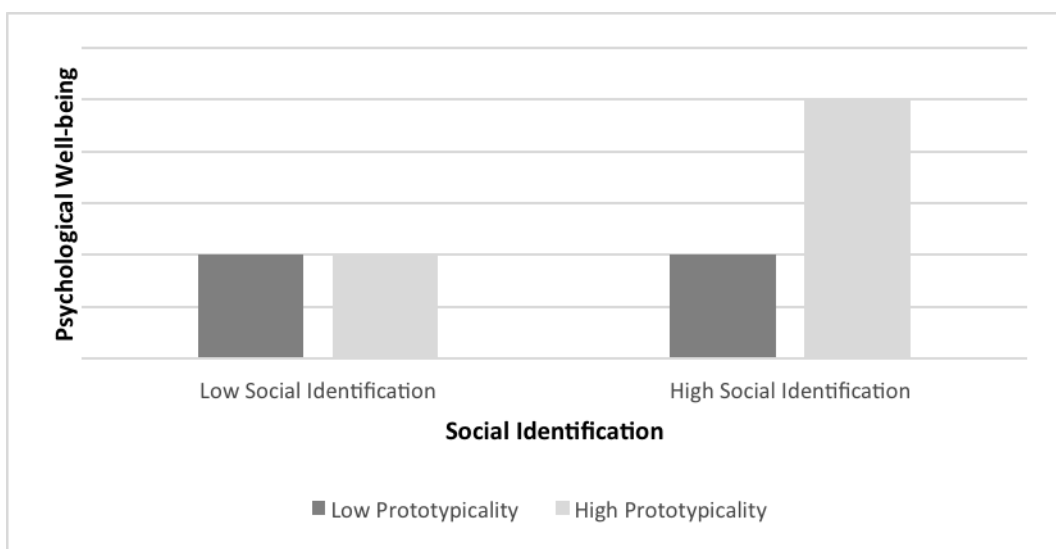

Figure 5. High perceived self-in-group prototypicality enables the positive effect of high social identification on psychological well-being.

Table 19. Nature of Significant Moderation effects across all five studies

	Figure 4 enhanced	Figure 5 enabled	Figure 6	Figure 7
1. Self- Esteem	-	-	✓	-
2. Satisfaction with Life	-	✓	✓	-
3. Social Support	✓	-	-	-
4. Social Connectedness	✓✓	-	✓	-
5. Depression (CES-D)	✓	-	-	-
6. Overall Distress (DASS-21)	-	-	-	-
7. Depression (DASS-D)	-	✓	-	-
8. Anxiety (DASS-A)	-	✓✓	-	-
9. Stress (DASS-S)	-	-	-	-
10. Positive Affect	✓	✓✓✓✓	-	-
11. Negative Affect	-	-	-	-

Overall, higher prototypicality consistently demonstrated greater effect on the psychological well-being of higher identified individuals, in line with predictions derived from recent theorizing by Ellemers and Jetten (2013) and Steffens et al. (2015). That being said, self-in-group prototypicality also moderated the negative impact of low social identification on psychological well-being in a number of instances consistent with Figure 6 shown below.
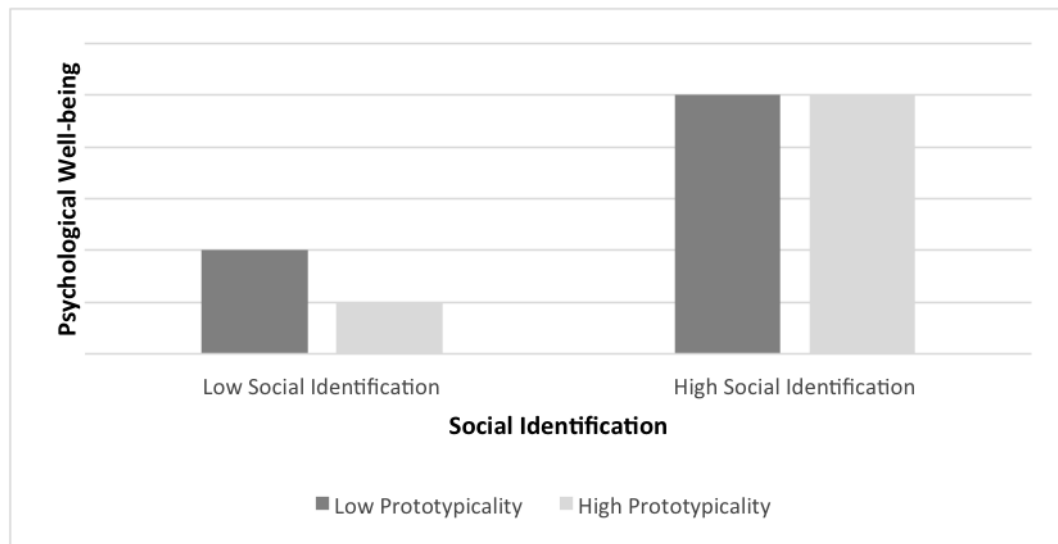
Figure 6. Significant interaction effect between social identification and prototypicality on psychological well-being, only when social identification is low

Closer examination of these effects showed that for those lower in identification, lower prototypicality was influencing their psychological well-being in a different way to higher identified individuals. Specifically, lower prototypicality reduced the negative effects of low identification on psychological well-being. This indicates that for lower identifiers, lower prototypicality may, in fact, be a more desired state. Lower prototypicality possibly allows those who are lower in social identification to maintain a positive self-concept, subsequently enhancing positive psychological well-being. While this was largely consistent with the self-categorisation analysis outlined in this thesis, which suggests higher prototypicality is of greater importance to high identifiers, however even when social identification was lower in Studies 1-6, individuals clearly were still highly identified overall. The results of the current work confirm previous work that suggests prototypicality is more important to higher identifiers (Schmitt & Branscombe, 2001) and additionally demonstrates that even among high identifiers, prototypicality may have differing effects depending on the degree of social identification. A final remark in relation to the finding that higher prototypicality enhanced the negative effect of lower social identification on psychological well-being is that this effect was only found in Study 6. In this study the combination of the data from all the studies provided a considerably larger sample size and hence more statistical power to find this effect. Thus, while this effect appears strong, the limited replication across all the studies, and the contra indication of this effect from the lack of

a similar pattern found in Studies 2-5, suggests further work is required to confirm this result. Despite this, we do find a number of possible theoretical explanations that could predict this effect. For example, the categorisation threat (see Branscombe et al., 1999), need for belongingness (Baumeister & Leary, 1999), and optimal distinctiveness (Brewer, 1991) perspectives provide a rationale for why the psychological well-being of particularly lower identified individuals may be further compromised by higher prototypicality. If we consider each in turn, we find that for those lower in identification, higher prototypicality could negatively impact psychological well-being through 1) signalling to the individual that they are being categorised in opposition to how they see themselves (which is identity threatening), 2) reducing feelings of belongingness or 3) being contrary to their goal for personal distinctive. However, the findings of the current thesis simply does not examine these mechanisms, so we do not know which is primarily involved. Instead the current work simply demonstrates that, without considering the impact of perceived self-in-group prototypicality, these effects would simply would not have been revealed.

The empirical work of the current thesis clearly demonstrates that prototypicality is an important variable to consider in terms of understanding when social identification will be beneficial to psychological well-being and when it may be less so. This addresses a gap in the current literature, in explaining when social identification may be beneficial or not to psychological well-being. More broadly, it demonstrates the usefulness of employing the framework of the social identity approach to understanding social factors in the biopsychosocial model of psychological well-being. The findings of the current work support previous evidence that it is largely beneficial to identify with one's social group. The findings add to this by demonstrating that in some instances (i.e., for those higher in social identification), it is also beneficial to see oneself as a prototypical member of that group, but in other instances (i.e., for those lower in social identification), it may be detrimental or not be beneficial at all.

Implications of Current Findings

Theoretical Issues

The empirical studies of this research program have, therefore, achieved three key outcomes that reflect on the social-psychological theory in which this thesis is

grounded. To summarise, these are 1) the demonstration that the SIA is a comprehensive, cohesive theoretical framework that can be used to explain the effects of social factors in the biopsychosocial model of psychological well-being, 2) the demonstration that social identification and prototypicality are related social identity constructs but can be measured separately and, 3) the demonstration that prototypicality moderates the largely positive effects of social identification on psychological well-being.

The clearest theoretical implication of this thesis derives from the finding that seeing oneself in terms of a social identity is positively related to psychological well-being. Indeed, social identification was a significant predictor of every outcome variable measured in this thesis. This is wholly consistent with the social identity analysis presented in this thesis, that people derive a sense of self from group memberships (Turner & Oakes, 1986) - a *social identity* - and this is largely beneficial to psychological well-being. This confirms evidence from a growing number of studies that demonstrate a strong positive relationship between social identification and health and well-being (Jetten et al., 2012; Steffens et al., 2016) and more specifically psychological well-being (Cruwys, 2014). This thesis therefore provides further support for the social identity analysis of psychological well-being.

In addition, the finding of a significant negative relationship between social identification and depression in a number of the studies in this thesis further highlights the value of social identification for psychological well-being. This is important, particularly in light of this effect being demonstrated for two different depression measures (i.e. the effect was not measure-dependent) and because these are the most severe mental-health measures included in the current work. Combined with the additional evidence of social identification's negative relationship with measures of anxiety, stress and overall distress (DASS-21), this finding provides strong evidence for the importance of social identification in mental health and accords with the conclusion of Cruwys et al. (2014, p. 223) that the "*negative association between social identification and depression appears not only to be moderately strong but also to be both reliable and robust.*"

The empirical work of this thesis also demonstrates that the strength and nature of the social identity – psychological well-being relationship differs even amongst those

highly identified. Across the board, participants in all the studies reported in this thesis endorsed relatively high levels of social identification. Hence, those who endorsed lower social identification all still identified strongly as a group member of the salient social category. Interestingly, despite this, the strength of the effect of social identification was still stronger for those highest in identification compared to those relatively lower in identification. This is important to note because it highlights that there are differences in the effects of even slight variations in levels of identification, not just differences between extremes of identification (high/low). This perspective has been championed by authors within the marginal group membership literature (Ellemers & Jetten, 2013; Cruwys, Berry, Cassells, Duncan, et al., 2013) and is supported by the findings of the current thesis. It is also important to note two more points. First, it is unclear what the effects of prototypicality might have been for those who did not identity at all, or identified very little with the university student identity. Second, we do not know what the pattern of results may have been if the valence of the social identity examined had been negative (for example, a stigmatised group). Indeed, the valence of social identities measured in each of the empirical studies of this thesis could largely be considered positive. In fact, if the social identity examined had been negatively valenced, we may have found completely different effects. Very recent work has shown that social identification with negatively valenced groups can, in fact, be associated with *poorer* psychological well-being (Kremisnski, Barry & Platow, 2018). This points to the fact that social identification is not an isolated concept and its effects could be influenced by a range of factors other than degree of prototypicality, including, category valence or content of social category, to name but a few. Indeed, when these aspects of a social identity are not measured, then we simply do not know what the meaning of the social identity may be to group members and hence may not accurately predict the effects of social identification on psychological well-being.

Other theoretical implications of this work relate directly to the social identity concept of prototypicality and its conceptualisation and operationalisation. Within the SIA, while social identification has received a considerable amount of work in terms of measurement (e.g., Cameron, 2004; Leach et al., 2008; Postmes et al., 2013), prototypicality has received comparatively little. Until recently the development of measures of prototypicality have largely been ad hoc and have focused on participants' perceptions of *others* prototypicality rather than their own (e.g., Steffens, et al., 2014; Platow & van Knippenberg, 2001). The current thesis provides a significant

contribution to this area of the literature through the development of a scale designed to specifically measure self-judgments of prototypicality, the PSIPS, and demonstrating its ability to measure this concept separately from social identification. These results support the assumption that prototypicality "is different from other related constructs such as group identification" and "while these constructs often covary, at times they can also be distinct" (Ellemers & Jetten, 2013, p 5).

These findings also support a multicomponent approach to measuring social identification, as posited by Leach et al. (2008), specifically in terms of the separate measurement of the concept of prototypicality. However, it is important to note that because the social identification scale chosen for use in this thesis did not include any items related to prototypicality (e.g. self-stereotyping), other work may find this is not always the case. Indeed, if the PSIPS items were compared to another measure of social identification, one which included an item that measured prototypicality, the same results may not have been found. Certainly, further development of this measurement tool (e.g., PSIPS) will assist clarification around these issues. Further to this, this thesis highlights an important consideration around how prototypicality could be successfully manipulated in experimental study designs. Unfortunately, in Studies 4 and 5 of this thesis, the manipulation of self-perceptions of prototypicality appeared to have limited success in altering the actual perceptions of one's degree of self-in-group prototypicality (as indicated by an absence of the manipulation significantly predicting scores on the PSIPS). As stated previously, it is possible this speaks to the difficulties in altering self-perceptions, which are clearly very difficult to do sometimes, so it may not be a surprising result. It should also be considered however that other factors such as the desire to maintain a good impression of oneself (Leary & Kowalski, 1990), the ability to use strategies such as social creativity and mobility to manage social group membership (Turner, 1982) and adherence to group norms (Jetten, Spears & Manstead, 1997) may have also been playing a role in participants' responses to the manipulation. Certainly, we cannot rule out the possibility other processes may have also contributed to how individuals responded to the PSIPS. Future work that empirical tests the PSIPS and employs study designs that incorporate the above mentioned factors may resolve the issues around the measurement of prototypicality identified here.

Finally, we must consider the theoretical implications of the finding that prototypicality moderated the effects of social identification on psychological well-

being. This was the most novel finding of the current thesis and directly speaks to the gap in the literature this thesis attempted to address – the question of when social identification might be beneficial to an individual's psychological well-being and when might it not be. The findings of the current thesis demonstrated that higher prototypicality afforded greater benefits to the psychological well-being of high identifiers than to those less identified. They also reveal that lower prototypicality buffered individuals against the negative effects that lower social identification can mean for psychological well-being. Combined, these findings suggest that self-judgements of prototypicality contribute to social identification's influence on psychological well-being, but prototypicality's contribution differs depending on the degree to which an individual identifies as a group member. These are important findings as they suggest that perceptions of one's representativeness as a group member, or one's position in the group relative to others, is an additionally important determinant of social identification's effects on the affective and cognitive processes which underlie psychological well-being. This has important implications for predicting which social factors (stressors or support) may be beneficial or detrimental to psychological well-being. It also increases our understanding of the underlying psychological processes by which social factors come to be important in the biopsychosocial model of psychological well-being. For instance, social identification and prototypicality predict when a social stressor or source of social support is likely to be beneficial or detrimental to psychological well-being. Also, when the cause of stress or support derives from an in-group member and that group is important to the self-concept of the individual, it is clearly more likely to influence one's psychological well-being. In addition, perceptions of one's position in the social category as being more peripheral or central (i.e. high or low prototypicality) may have differing effects depending on the content or valence of the social identity itself. The findings of this thesis represent an important step forward in the application of the social identity approach.

Practical Implications

The current research program has direct relevance for clinical psychological and socio-political interventions. One example derives from the demonstration of the importance of group membership to psychological well-being. This indicates a strategy for both enhancing the effectiveness of clinical psychological interventions (by considering the social identities important to individuals), and also a novel strategy for

identifying those at risk of developing psychological ill-health and better targeting prevention efforts. The Groups4Health intervention, developed by Haslam, and colleagues (2016) was derived from principles demonstrated in the Social Cure literature. This intervention aims to foster individuals social group memberships (with groups individuals identify as a member of) to improve psychological well-being. The empirical work conducted in this thesis demonstrates that interventions such as this may be enhanced by also attempting to increase participants' self-perceptions of prototypicality. This could possibly be achieved by highlighting the features, norms or attitudes of group members that a participant also holds, and/or discounting those that they do not match. If we consider both how prototypicality is conceptualised within the SIA, and the findings of the current thesis, we know that if indeed self-perceived prototypicality can be influenced in this way, it could enhance psychological well-being. Of course, the current study also supports evidence that through increasing participants' social identification with multiple social groups, interventions such as the Groups4Health program, are likely to afford real benefits to an individuals psychological well-being.

The empirical work conducted in this thesis further identified the negative implications that lower identification and prototypicality as a social group member can cause. This further suggests that highlighting the centrality or security of one's position in a social group, or at least downplaying the peripheral or insecure position one holds in a social group, may be valuable for clinical psychological intervention. Simply having other in-group members tell you that you are a valued member, 'just like them', or group members wearing displays of unity (ie. uniforms) could serve to increase perceptions of similarity and hence prototypicality. However, these suggestions of ways in which prototypicality may be influenced were not tested in the current thesis and clearly further work is required to identify the best possible means of influencing self-prototypicality judgements to improve psychological well-being. In addition, this thesis shows the relevance of social identity processes to psychological well-being and suggests that they are relevant for a range of social factors known to be important in psychological well-being interventions. For instance, social factors such as the clinician-patient relationship, social stressors and support, and even society wide factors such as social isolation, stigma, and discrimination, can be explained in terms of social identity processes.

Finally, a vital contribution of this thesis is the understanding that psychological representations of social groups that afford individuals a positive sense of self are important to psychological well-being. As mentioned previously, the vast majority of research on psychological well-being has focused on the biological and psychological factors, and the work on social factors has been ad-hoc or lacking in theoretical cohesiveness. A disturbing consequence of this is the lack of integration and application of the knowledge about the powerful effects of social factors on psychological well-being. The social-psychological approach taken in this thesis suggests several social identity concepts (i.e. social identification and prototypicality) that may be applied to interventions that aim to influence psychological well-being. Most notably this work demonstrates the value of integrating social identity principles in psychotherapy that aims to treat psychopathology. In particular, social identity principles would neatly align with therapies that integrate therapeutic alliance, identity, meaning making and social relationship perspectives into their therapeutic approach. An example of a direct translation of the findings of the current thesis would be the integration of social identification and self-judgments of prototypicality in the assessment or treatment of psychological well-being. For instance, underlying problematic social categories with which a patient identifies (i.e. I am a male) and their self-prototypicality related judgements in relationship to that identity (i.e. I am a 'weak' male because I cry) may lead to poorer psychological well-being for that individual. This knowledge can be used to inform specific interventions that could either highlight different aspects of ones social identity (i.e. men are brave) or prototypical behaviours exhibited in the past (i.e. when one hasn't cried) and this may protect the individuals' psychological well-being. Highlighting similarities rather than differences that exist between the patient and the clinician could also serve to strengthen feelings of shared identity and hence the therapeutic alliance with direct benefits to psychological well-being. Certainly the current work does not directly test the effectiveness of interventions such as those suggested here, however this work could inform the development of clinical interventions, or further develop interventions which have incorporated the evidence from within the SIA to treat psychopathology (Haslam, Cruwys, Haslam, Dingle, Chang, 2016).

The practical implications of the findings of the current thesis are also relevant to broader societal interventions and their effect on psychological well-being. For example, when the prevailing political discourse focuses on the differences between

social groups, this increases tensions between those groups (Tajfel & Turner, 1979), or represents a threat to a specific group. This can have serious implications for the psychological well-being of minority group members (Branscombe et al., 1999). Therefore, the social identity analysis presented in this thesis not only assists the identification of those most vulnerable in these situations, but also the development of interventions that may assist them.

Strengths, Limitations and Future Directions

It is important to note that the strong theoretical grounding of this program represents a considerable strength. This has enabled the current thesis to contribute substantially to the understanding of social factors in the biopsychological model of psychological well-being. As mentioned previously, this is particularly important given the largely disparate and disjointed theoretical approaches previously employed within this literature. The explicit use and articulation of assumptions form a cohesive theoretical framework, which has been established and well-validated, and this means we can have confidence in extrapolating the findings of the current work.

However, there are also some limitations of the empirical work reported here. These relate to three areas, 1) the measure developed to assess perceived self-in-group prototypicality (the PSIPS), 2) the experimental manipulation of prototypicality, and 3) the limited consistency of the pattern of moderation effects between each of the studies conducted. These issues are important to consider here, to examine in future research, and form the basis for a number of recommendations. I will now consider each in turn, before outlining possible future research directions.

First, given the PSIPS scale was not formally empirically tested prior to being employed in the empirical studies, this somewhat limits confidence in its applicability for subsequent studies. The PSIPS items were also only compared in relation to one social identity scale (Doosje et al., 1995). This social identity scale did not include items that explicitly measure typicality, or what Leach et al. (2008) consider 'self-stereotyping' components of social identification. This is a limitation of the PSIPS in terms of stating it is completely measure a construct separate from social identification. While this does not invalidate the findings of the current work, it is possible that if another social identity scale had been used, one may not have found the same result.

Although further validation of the PSIPS and its comparison with other social identity scales is certainly required, the development and use of the PSIPS has nevertheless been a useful contribution.

Second, a few factors contributed to a difficulty in confidently inferring causation from the current findings. The correlational design of the earlier studies and the limited success of the manipulation of prototypicality in the experimental studies are both limitations of the current research. It appears that manipulating prototypicality was particular difficult to achieve. Possibly because it attempted to convince participants of something that may have conflicted with their conscious beliefs. The form or manner of the bogus feedback (ie. manipulation material presented), the task upon which the feedback was osentiously derived (ie. the IAT and PAT) and the legitimacy and group membership of the perceived provider of the feedback are all likely to have influenced the 'believability' of the manipulation. In addition, self-presentation effects – the attempt to control images of oneself held by others (Schlenker, 1980) and social categorisation threat – the threat of being categorised negatively (Ellemers et al., 2012) could have confounded attempts to manipulate prototypicality. These factors are therefore important to consider in any future work that attempts to manipulate prototypicality.

Finally, a lack of consistency in the pattern of significant moderation effects of prototypicality on the social identification relationship across the various outcome variables employed and across the five studies conducted, represents another limitation. It is important for future research to further test the hypotheses about the relationship between social identification and prototypicality, and psychological well-being. This will be important for clarity and confidence in the current findings. Future research could expand upon the present findings in a number of important ways. In particular, future research could focus on the differences in effects of social identification and prototypicality on: 1) identities that are particularly important to individuals (e.g., gender, ethnic group); 2) negatively valenced identities; 3) groups where members possess more mixed levels of social identification and prototypicality, including non-prototypical individuals; and 4) different out-groups in the comparative context within which self-categorisation is derived. The current thesis almost solely focused on positive valenced social identities and relatively high in social identification. Future work that examines more mixed levels of social identification and even individuals who

are non-prototypical (ie. black sheep or marginalised group members) would assit to develop a deeper understanding of the effects of these variables. Future work could also examine how perceived self-in-group prototypicality may differ due to a range of other factors. For example, the social curse literature suggests that not all social group memberships are positively related to well-being. Therefore, examining the effects of negative valenced groups on prototypicality may possibly assist us to determine the SIA processes involved. Of course the role of prototypicality could also be examined in situations where schisms in groups form (Sani & Reicher, 1988) for, where group norms and values are changing in a fundamental manner we may also expect perceived self-in-group prototypicality to be involved. In addition, longitudinal research may also allow fuller exploration of causality (to some extent) and prototypicality judgments as they change over time. Future work which examines the social identity analysis of psychological well-being should aim to more fully elucidate the role that prototypicality plays in any one of the above processes. In particular, future studies which consider whether prototypicality is an antecedent of social identification, or whether social support is an antecedent to prototypicality and identification, via path analysis, would be beneficial to understand the causal relationships between these variables and psychological well-being. Unfortunately the current work could not examine all these factors, however, I recognise there is a need for future work to do so. However, the current thesis does provide an important first step towards this and has provided an important contribution to the social identity analysis of psychological well-being.

Conclusion

The current thesis provides evidence that applying a social identity analysis to the examination of social factors in psychological well-being is indeed valuable. Results from five studies provided support for all empirical hypotheses. It was demonstrated that not only is social identification positively associated with psychological well-being across a variety of outcome measures, but these effects were either *enhanced* or *enabled* to be seen when people also saw themselves as relatively highly in-group prototypical. Surprisingly, the findings also demonstrated that higher prototypicality also enhanced the negative implications of low identification on psychological well-being on a number of outcome measures. The effects of relative perceived self-in-group prototypicality do not seem to emerge independently of social identification but, instead, were predicated

upon and facilitate the effects of social identification. Not only is identifying strongly with a salient psychological (and positively valenced) group beneficial to our psychological well-being, but seeing ourselves as relatively prototypical is even more protective. The social identity analysis of psychological well-being employed in the current thesis both supports and extends current knowledge about the importance of social factors in the biopsychosocial model of psychological well-being. This work also has profound implications for how these social factors are conceived in clinical and societal level interventions which aim to enhance people's psychological well-being.

REFERENCES

Abramson, L. Y., & Alloy, L. B. (1981). Depression, nondepression, and cognitive illusions: Reply to Schwartz. *Journal of Experimental Psychology: General, 110*(3), 436-447. doi.10.1037/0096-3445.110.3.436

Acierno, R., Brady, K., Gray, M., Kilpatrick, D. G., Resnick, H., & Best, C. L. (2002). Psychopathology following interpersonal violence: A comparison of risk factors in older and younger adults. *Journal of Clinical Geropsychology*, *8*(1), 13-23.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Sage: London.

Ainsworth, M. D. S. (1978). The Bowlby-Ainsworth attachment theory. *Behavioral and Brain Sciences*, *1*(3), 436-438.

Alloy, L. B., & Ahrens, A. H. (1987). Depression and pessimism for the future: biased use of statistically relevant information in predictions for self versus others. *Journal of personality and social psychology*, *52*(2), 366.

Allport, F. H. (1920). The influence of the group upon association and thought. *Journal of experimental psychology*, *3*(3), 159.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Arlington, VA

Anderson, N. B., & Armstead, C. A. (1995). Toward understanding the association of socioeconomic status and health: A new challenge for the biopsychosocial approach. *Psychosomatic medicine*, *57*(3), 213-225.

Andersson, S., Krogstad, J. M., & Finset, A. (1999). Apathy and depressed mood in acquired brain damage: relationship to lesion localization and psychophysiological reactivity. *Psychological medicine*, *29*(2), 447-456.

Andrasik, F., Goodie, J. L., & Peterson, A. L. (Eds) (2015). *Biopsychosocial Assessment in Clinical Health Psychology*. Guilford: NY.

Andrews, G., Tennant, C., Hewson, D. M., & Vaillant, G.E. (1978). Life event stress, social support, coping style, and risk of psychological impairment. *Journal of Nervous and Mental Disease, 166*. 307–316.

Aneshensel, C. S., & Frerichs, R. R. (1982). Stress, support, and depression: A longitudinal causal model. *Journal of Community Psychology, 10*. 363–376.

Asch, S. E. (1956). Studies of independence and conformity: I. A minority of one against a unanimous majority. *Psychological monographs: General and applied*, *70*(9), 1.

Ashmore, R. D., Deaux, K., & McLaughlin-Volpe, T. (2004). An organizing framework for collective identity: articulation and significance of multidimensionality. *Psychological bulletin*, *130*(1), 80.

Åslund, C., Larm, P., Starrin, B., & Nilsson, K. W. (2014). The buffering effect of tangible social support on financial stress: influence on psychological well-being and psychosomatic symptoms in a large sample of the adult general population. *International Journal for Equity in Health*, *13*, 85. http://doi.org/10.1186/s12939-014-0085-3

Australian Psychological Society (2010). *Evidence Based Psychological Interventions in the treatment of Mental Disorders: A Literature Review* (3rd Ed.), APS: Victoria.

Bachman, J. G., O'Malley, P. M., Freedman-Doan, P., Trzesniewski, K. H., & Donnellan, M. B. (2011). Adolescent Self-Esteem: Differences by Race/Ethnicity, Gender, and Age. *Self and Identity : The Journal of the International Society for Self and Identity*, *10*(4), 445–473. http://doi.org/10.1080/15298861003794538

Bandura, A. (1969). *Principles of behavior modification*. Oxford, England: Holt, Rinehart, & Winston.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Barnett, P. A, Gotlib, I. H. (1988). Psychosocial functioning and depression: distinguishing among antecedents, concomitants, and consequences. *Psychology Bulletin*, 104, 97–126.

Baron-Cohen, S. (2008). *Autism and Asperger syndrome*. Oxford University Press.

Bartel, C., & Wiesenfeld, B. (2013). The social negotiation of group prototype ambiguity in dynamic organizational contexts. *Academy of Management Review,* 38, 503-524.

Bartlett, M. S. (1954). A note on the multiplying factors for various $\chi 2$ approximations. *Journal of the Royal Statistical Society. Series B (Methodological)*, 296-298.

Baumeister, R. F. (1991). *Meanings of life*. New York: Guilford Press

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 3, 497.

Baumeister, R. F., & Tice, D. M. (1990). Point-counterpoints: Anxiety and social exclusion. *Journal of Social and Clinical Psychology*, *9*(2), 165-195.

Bech, P. (2004). Measuring the dimension of psychological general well-being by the WHO-5. *Quality of Life Newsletter*, 15-16.

Bech, P., Olsen, L. R., Kjoller, M., & Rasmussen, N. K. (2003). Measuring wellbeing rather than the absence of distress symptoms: a comparison of the SF-36 Mental Health subscale and the WHOFive wellbeing scale. *International journal of methods in psychiatric research*, *12*(2), 85-91.

Beck, A. T. (1963). Thinking and depression: Pt. 1. Idiosyncratic content and cognitive distortions. *Archives of general psychiatry*, *9*(4), 324-333.

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. University of Pennsylvania Press

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression.* New York: Guilford Press.

Benazon, N. R., & Coyne, J. C. (2000). Living with a depressed spouse. *Journal of family Psychology*, *14*(1), 71.

Berkman, L. F. (1985). The relationship of social networks and social support to morbidity and mortality.

Berkman, L. F., & Glass, T. (2000). Social integration, social networks, social support, and health. In: Berkman LF, Kawachi I, (Eds.) *Social Epidemiology*. New York: Oxford University Press, p.137–173

Berkman, L. F., & Syme, S. L. (1979). Social networks, host resistance, and mortality: a nine-year follow-up study of Alameda County residents. *American journal of Epidemiology*, *109*(2), 186-204.

Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social science & medicine*, *51*(6), 843-857.

Berrios, G.E. (1996). *The History of Mental Symptoms: Descriptive Psychopathology since the 19th century.* Cambridge: Cambridge University Press.

Berry, H. L., & Welsh, J. A. (2010). Social capital and health in Australia: an overview from the household, income and labour dynamics in Australia survey. *Social science & medicine*, *70*(4), 588-596.

Berscheid, E., & Walster, E. (1969). Attitude change. *Experimental social psychology*, 121-232.

Bettencourt, B. A., & Dorr, N. (1997). Collective self-esteem as a mediator of the relationship between allocentrism and subjective well-being. *Personality and social psychology Bulletin*, *23*(9), 955-964.

Billings, A. G., & Moos, R. H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of behavioral medicine*, *4*(2), 139-157.

Birley, J. L. T., & Brown, G. W. (1970). Crises and life changes preceding the onset or relapse of acute schizophrenia: clinical aspects. *The British Journal of Psychiatry*, *116*(532), 327-333.

Bizumic, B., Reynolds, K. J., Turner, J. C., Bromhead, D., & Subasic, E. (2009). The Role of the group in individual functioning: School identification and the psychological well- being of staff and students. *Applied Psychology*, *58*(1), 171-192.

Blanz, M. (1999). Accessibility and fit as determinants of the salience of social categorizations. *European Journal of Social Psychology*, *29*(1), 43-74.

Blazer, D. G. (1982). Social support and mortality in an elderly community population. *American journal of epidemiology*, *115*(5), 684-694.

Bloom, B. L., White, S. W, & Asher, S. J. (1979). Marital disruption as a stressful life event. In G. Levinger & O. C. Moles (Eds.), *Divorce and separation: Context, causes, and consequences* (pp. 184-200). New York: Basic Books.

Bolger, N., DeLongis, A., Kessler, R. C., & Schilling, E. A. (1989). Effects of daily stress on negative mood. *Journal of personality and social psychology*, *57*(5), 808.

Bombardier, C. H., Fann, J. R., Temkin, N. R., Esselman, P. C., Barber, J., & Dikmen, S. S. (2010). Rates of major depressive disorder and clinical outcomes following traumatic brain injury. *Jama*, *303*(19), 1938-1945.

Borrell-Carrió, F., Suchman, A. L., & Epstein, R. M. (2004). The biopsychosocial model 25 years later: principles, practice, and scientific inquiry. *The Annals of Family Medicine*, *2*(6), 576-582.

Bovard, E. W. (1985). Brain mechanisms in effects of social support on viability. *Perspectives on behavioral medicine*, *2*, 103-129.

Bowlby, J. (1969). *Attachment and Loss: Attachment; John Bowlby*. NY: Basic Books.

Bowlby, J. (1980). *Attachment and loss: Loss* (vol. 3). NY, Basic Books.

Branscombe, N. R., & Miron, A. M. (2004). Interpreting the Ingroup's Negative Actions
    Toward Another Group: Emotional Reactions to Appraised Harm. In L. Z.
    Tiedens & C. W. Leach (Eds.), *The social life of emotion* (p. 314-335). New
    York: Cambridge University Press.

Branscombe, N. R., Ellemers, N., Spears, R., & Doosje, B. (1999). The context and
    content of social identity threat. *Social identity: Context, commitment, content*,
    35-58.

Branscombe, N. R., Fernandez, S., Gomez, A. & Cronin, T. (2012). Moving toward or
    away from a group identity: Different strategies for coping with pervasive
    discrimination. In Jetten, J., Haslam, C. & Haslam, S.A. *The Social Cure:
    Identity, Health and Well-being*. 115-131.

Branscombe, N. R., Schmitt, M. T., & Harvey, R. D. (1999). Perceiving pervasive
    discrimination among African Americans: Implications for group identification
    and well-being. *Journal of Personality and Social Psychology*, *77*(1) 135-149.

Brantley, P. J., Waggoner, C. D., Jones, G N., & Rappaport, N. B. (1987). "A daily
    stress inventory: Development, reliability, and validity". *Journal of Behavioral
    Medicine.* 10 (1): 61–73. doi:10.1007/BF00845128.

Brewer, M. B. (1991). The social self: On being the same and different at the same
    time. *Personality and Social Psychology Bulletin*, 17, 475-482.

Brewin, C. R., & Holmes, E. A. (2003). Psychological theories of posttraumatic stress
    disorder. *Clinical psychology review*, *23*(3), 339-376.

Brook, A. T., Garcia, J., & Fleming, M. A. (2008). The effects of multiple identities on
    psychological well-being. *Personality and Social Psychology Bulletin*, *34*(12),
    1588-1600.

Brown, G. W., & Birley, J. L. (1968). Crises and life changes and the onset of schizophrenia. *Journal of health and social behavior*, 203-214.

Burke, H. M., Davis, M. C., Otte, C., & Mohr, D. C. (2005). Depression and cortisol responses to psychological stress: a meta-analysis. *Psychoneuroendocrinology*, *30*(9), 846-856.

Burns, R. A. & Machin, M. A. (2013). Psychological wellbeing and the diathesis-stress hypothesis model: The role of psychological functioning and quality of relations in promoting subjective well-being in a life events study. *Personality and Individual Differences*, 54, 3, 321-326. doi.org/10.1016/j.paid.2012.09.017

Butler, J. & Kern, M. L. (2015). The PERMA-Profiler: A brief multidimensional measure of flourishing. *International Journal of Wellbeing, 6*(3), 1- 48. doi:10.5502/ijw.v6i3.1

Cacioppo JT, Hughes ME, Waite LJ, Hawkley LC, Thisted RA. (2006) Loneliness as a specific risk factor for depressive symptoms: Cross-sectional and longitudinal analyses. *Psychology and Aging, 21*:140–151.

Cacioppo, J. T., Hawkley, L. C., & Thisted, R. A. (2010). Perceived social isolation makes me sad: 5-year cross-lagged analyses of loneliness and depressive symptomatology in the Chicago Health, Aging, and Social Relations Study. *Psychology and aging*, *25*(2), 453.

Cameron, J. E. (2004). A three-component model of social identity. *Self and identity*, *3*(3), 239-262.

Camp, D. L., Finlay, W. M. L., & Lyons, E. (2002). Is low self-esteem an inevitable consequence of stigma? An example from women with chronic mental health problems. *Social science & medicine*, *55*(5), 823-834.

Campbell, D. T. (1958). Common fate, similarity, and other indices of the status of aggregates of persons as social entities. *Systems Research and Behavioral Science*, *3*(1), 14-25.

Carr, D., & Umberson, D. (2013). The Social Psychology of Stress, Health, and Coping. IN DeLamater, J., Ward, A. (eds.) *Handbooks of Sociology and Social Research*. Springer Netherlands. pp. 465–487. doi:10.1007/978-94-007-6772-0_16

Cassel, J. (1976). The contribution of the social environment to host-resistance. *American Journal of Epidemiology, 104*. 107–122.

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate behavioral research*, *1*(2), 245-276.

Chapman, A. J. (1973). Social facilitation of laughter in children. *Journal of Experimental Social Psychology*, *9*(6), 528-541.

Cherlin, A. (1981). *Marriage, divorce, remarriage: Changing patterns in the postwar United States.* Cambridge, MA: Harvard University.

Coakes, E. (Ed.). (2005). *Encyclopedia of communities of practice in information and knowledge management*. IGI Global.

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic medicine*, *38*(5), 300-314.

Cohen, S. (1988). Psychosocial models of the role of social support in the etiology of physical disease. *Health psychology*, *7*(3), 269.

Cohen, S. (2004). Social relationships and health. *American psychologist*, *59*(8), 676.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological bulletin*, *98*(2), 310.

Cohen, S., Kessler, R. C., & Gordon, L., (1997). *Measuring Stress: A Guide for Health and Social Scientists*. Oxford University Press. ISBN 9780190283889.

Collins, P. H. (1998). It's all in the family: Intersections of gender, race, and nation. *Hypatia*, *13*(3), 62-82.

Cornwell, E. Y., & Waite, L. J. (2009). Social disconnectedness, perceived isolation, and health among older adults. *Journal of health and social behavior*, *50*(1), 31-48.

Cottrell, N. B., Wack, D. L., Sekerak, G. J., & Rittle, R. H. (1968). Social facilitation of dominant responses by the presence of an audience and the mere presence of others. *Journal of personality and social psychology*, *9*(3), 245.

Couture, S. M., Penn, D. L., & Roberts, D. L. (2006). The functional significance of social cognition in schizophrenia: a review. *Schizophrenia bulletin*, *32*(suppl_1), S44-S63.

Cox, W. T., Abramson, L. Y., Devine, P. G., & Hollon, S. D. (2012). Stereotypes, prejudice, and depression: The integrated perspective. *Perspectives on Psychological Science*, *7*(5), 427-449.

Coyne, J. C. (1987). Depression, biology, marriage and marital therapy. *Journal of Marital and Family Therapy*, *13*(4), 393-407.

Coyne, J. C., & Downey, G. (1991). Social factors and psychopathology: Stress, social support, and coping processes. *Annual review of psychology*, *42*(1), 401-425.

Coyne, J. C., Kessler, R. C., Tal, M., Turnbull, J., Wortman, C. B., & Greden, J. F. (1987). Living with a depressed person. *Journal of consulting and clinical psychology*, *55*(3), 347.

Crabtree, J. W., Haslam, S. A., Postmes, T., & Haslam, C. (2010). Mental Health Support Groups, Stigma, and SelfEsteem: Positive and Negative Implications of Group Identification. *Journal of Social Issues*, *66*, 3, 553-569.

Crane, M. F., & Platow, M. J. (2010). Deviance as adherence to injunctive group norms: The overlooked role of social identification in deviance. *British Journal of Social Psychology*, *49*(4), 827-847.

Crawford, J. R., & Henry, J. D. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, *43*, 245-265.

Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological bulletin*, *52*(4), 281.

Cruwys, T., Berry, H., Cassells, R., Duncan, A., O'Brien, L., Sage, B., & D'Souza, G. (2013). *Marginalised Australians: Characteristics and predictors of exit over ten years 2001-10*.

Cruwys, T., Dingle, G. A., Haslam, C., Haslam, S. A., Jetten, J., & Morton, T. A. (2013). Social group memberships protect against future depression, alleviate depression symptoms and prevent depression relapse. *Social Science & Medicine*, *98*, 179-186.

Cruwys, T., Haslam, S. A., Dingle, G. A., Haslam, C., & Jetten, J. (2014). Depression and social identity: An integrative review. *Personality and Social Psychology Review*, *18*, 215-238.

Dalgleish, T. (2004). The Emotional Brain. *Nature Reviews Neuroscience*, 5, 583-589. doi:10.1038/nrn1432.

Dao, T. K., Lee, D., & Chang, H. L. (2007). Acculturation level, perceived English fluency, perceived social support level, and depression among Taiwanese international students. *College Student Journal*, *41*(2), 287.

DeLongis, A., & Holtzman, S. (2005). Coping in context: The role of stress, social support, and personality in coping. *Journal of personality*, *73*(6): 1633-1656.

DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: psychological and social resources as mediators. *Journal of personality and social psychology*, *54*(3): 486.

DeNiro DA. (1995). Perceived alienation in individuals with residual-type schizophrenia. *Issues Mental Health Nursing, 16*:185–200

Denson, T. F., Spanovic, M., & Miller, N. (2009). Cognitive appraisals and emotions predict cortisol and immune responses: a meta-analysis of acute laboratory social stressors and emotion inductions. *Psychological Bulletin, 135*(6): 823-53. doi: 10.1037/a0016909.

Diener, E. (1984) 'Subjective Well-Being', *Psychological Bulletin, 95*: 542-575

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of personality assessment*, *49*(1), 71-75.

Diener, E., & Chan, M. Y. (2011). Happy people live longer: Subjective well- being contributes to health and longevity. *Applied Psychology: Health and Well- Being*, *3*(1), 1-43.

Diener, E., Diener, M., & Diener, C. (2009). Factors predicting the subjective well-being of nations. In *Culture and well-being* (pp. 43-70). Springer Netherlands.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*, 71-75.

Diener, E., Sandvik, E., & Larsen, R. J. (1985). Age and sex effects for emotional intensity. *Developmental Psychology*, *21*(3), 542.

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological bulletin*, *125*(2), 276.

Dingle, G. A., Brander, C., Ballantyne, J., & Baker, F. A. (2013). 'To be heard': The social and mental health benefits of choir singing for disadvantaged adults. *Psychology of Music*, *41*, 4, 405-421.

Dodge, R., Daly, A. P., Huyton, J., & Sanders, L. D. (2012). The challenge of defining wellbeing. *International journal of wellbeing*, *2*(3): 223-225. doi:10.5502/ijw.v2i3.4

Doidge, N. (2010). *The Brain that Changes Itself* (Revised Edition), Australia, Scribe.

Doosje, B., Ellemers, N., & Spears, R. (1995). Perceived intragroup variability as a function of group status and identification. *Journal of Experimental Social Psychology*, *31*, 410-436.

Dube, S.R., Anda, R.F., Felitti, V.J., Edwards, V.J., Croft, J.B. (2002). *Addictive Behaviour,* 27(5): 713-25.

Durkheim, E. (1951). Suicide: a study in sociology [1897]. *Translated by JA Spaulding and G. Simpson (Glencoe, Illinois: The Free Press, 1951)*.

Durkheim, E. (1952). *Suicide: A study in sociology*. London: Routledge & K. Paul.

Eagly, A. H., Karau, S. J., & Makhijani, M. G. (1995). Gender and the effectiveness of leaders: a meta-analysis. *Psychological Bulletin, 117*, 1, 125-145.

Easterbrook, M., & Vignoles, V. L. (2013). What does it mean to belong? Interpersonal bonds and intragroup similarities as predictors of felt belonging in different types of groups. *European Journal of Social Psychology*, *43*(6), 455-462.

Eccleston, C. P. (2008). The Psychological and Physical Health Effects of Stigma: The Role of Selfthreats. *Social and Personality Psychology Compass*, *2*(3), 1345-1361.

Eisenbeiss, K. K., & Otten, S. (2008). When Do Employees Identify? An Analysis of CrossSectional and Longitudinal Predictors of Training Group and Organizational Identification1. *Journal of Applied Social Psychology*, *38*(8), 2132-2151.

Elder, G. H., Caspi, A., & Downey, G. (1986). Problem behavior and family relationships: Life course and intergenerational themes. *Human development and the life course: Multidisciplinary perspectives*, 293-340.

Ellemers, N., & Jetten, J. (2013). The many ways to be marginal in a group. *Personality and Social Psychology Review*, *17*(1), 3-21.

Ellemers, N., Kortekaas, P., & Ouwerkerk, J. W. (1999). Selfcategorisation, commitment to the group and group selfesteem as related but distinct aspects of social identity. *European journal of social psychology*, *29*(23), 371-389.

Ellemers, N., Spears, R., & Doosje, B. (2002). Self and social identity. *Annual review of psychology*, *53*(1), 161-186.

Elliot, T. S. (1948). *Notes towards the definition of culture*. Faber and Faber, London.

Ellis, A. (1962). *Reason and emotion in psychotherapy*. New York: Lyle Stuart.

Engel GL. (1960) A unified concept of health and disease. *Perspectives in Biology and Medicine,* 3:459-485.

Eron, L. D., & Peterson, R. A. (1982). Abnormal behavior: Social approaches. *Annual Review of Psychology*, *33*(1), 231-264.

Fernando, S. (1999). Ethnicity and mental health. In M. Ulas & A. Connor (eds.), *Mental Health and Social Work*. London: Jessica Kingsley.

Festinger, L. (1954). A theory of social comparison processes. *Human relations*, *7*(2), 117-140.

Fielding, K. S., & Hogg, M. A. (1997). Social identity, self-categorization, and leadership: A field study of small interactive groups. *Group dynamics: Theory, research, and practice*, *1*(1), 39.

Finfgeld, D. L. (2000). Therapeutic groups online: the good, the bad, and the unknown. *Issues in mental health nursing*, *21*(3), 241-255.

Fowler, J. H., & Christakis, N. A. (2008). Dynamic spread of happiness in a large social network: longitudinal analysis over 20 years in the Framingham Heart Study. *British Medical Journal*, *337*: 2338.

Freud, S. (1924). Group Psychology and the Analysis of the Ego. 1 Translation by James Strachey. The International Psychoanalytical Library, No. 6. *The Journal of Nervous and Mental Disease*, *59*(4), 442.

Frith, U., & Blakemore, S. (2006). Social Cognition. In Morris, R., Tarassenko, L & Kenward, M. (Ed) *Cognitive Systems- Information Processing meets Brain Science*, Elsevier, NY; p.138-162. doi.org/10.1016/B978-012088566-4/50012-X

Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology? *Review of General Psychology, 9*, 2, 103-110. doi: 10.1037/1089-2680.9.2.103.

Giessner, S. R., van Knippenberg, D., van Ginkel, W., & Sleebos, E. (2013). Team-oriented leadership: The interactive effects of leader group prototypicality, accountability, and team identification. *Journal of Applied Psychology*, *98*(4), 658.

Giessner, S.R., van Knippenberg, D., van Ginkel, W.P. & Sleebos, E (2013). Team-oriented leadership: The Interactive Effects of Leader Group Prototypicality, Accountability, and Team Identification. *Journal of Applied Psychology, 98* (4), 658-667. doi: http://dx.doi.org/10.1037/a0032445.

Gilbert, M. (1992). *On social facts*. Princeton, University Press.

Gilbert, P., Price, J., & Allan, S. (1995). Social comparison, social attractiveness and evolution: How might they be related?. *New ideas in Psychology*, *13*(2), 149-165.

Gleibs, I., Haslam, C., Jones, J., Haslam, S. A., McNeil, J., & Connolly, H. (2011). No country for old men? The role of a Gentlemen's Club in promoting social engagement and psychological well-being in residential care. *Aging and Mental Health*, 15, 465–466. doi:10.1080/13607863.2010.536137

Goldsmith, S.K., Pellmar, T.C., Kleinman, A.M., Bunney, W. E. (2002). *Reducing Suicide: A National Imperative.* Washington, DC: National Academy Press.

Grassian, S. (1983). Psychopathological effects of solitary confinement. *American Journal of Psychiatry*, *140*(11), 1450-1.

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: attitudes, self-esteem, and stereotypes. *Psychological review*, *102*(1), 4.

Greenwald, A. G., McGhee, D. E., and. Schwartz, J. L. K. (1998). Measuring Individual Differences in Implicit Cognition: The Implicit Association Test, *Journal of Personality and Social Psychology*, 74, 6, 1464-1480. doi: 0022-3514/98

Grey-Little, B., Williams, V. S. L, & Hancock, T. D. (1997). An item response theory analysis of the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin,* 23, 443-451.

Groth-Marnat, G. (2009). *Handbook of psychological assessment*. John Wiley & Sons.

Gurin, P., & Markus, H. (1988). Group identity: The psychological mechanisms of durable salience. *Revue Internationale de Psychologie Sociale*. 1, 257-274.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modelling in marketing research. *Journal of the academy of marketing science*, *40*(3), 414-433.

Hais, S. C., Hogg, M. A., & Duck, J. M. (1997). Self-categorization and leadership: Effects of group prototypicality and leader stereotypicality. *Personality and Social Psychology Bulletin*, *23*(10), 1087-1099.

Hall, A., & Wellman, B. (1985). Social networks and social support. In S. Cohen, & S. L. Syme, *Social Support and health* (p. 23-41). Orlando, Academic Press.

Hall, S., & Cheston, R. (2002). Mental health and identity: the evaluation of a drop- in centre. *Journal of community & applied social psychology*, *12*(1), 30-43.

Hankin, B. L., & Abela, J. R. (Eds.). (2005). *Development of psychopathology: A vulnerability-stress perspective*. Sage.

Harpham, T., Grant, E., & Thomas, E. (2002). Measuring social capital within health surveys: key issues. *Health policy and planning*, *17*(1), 106-111.

Haslam, C., Cruwys, T., Haslam, S. A., Dingle, G., & Chang, M. X. L. (2016). Groups 4 Health: Evidence that a social-identity intervention that builds and strengthens social group membership improves mental health. *Journal of affective disorders*, *194*, 188-195.

Haslam, C., Haslam, S. A., Jetten, J., Bevins, A., Ravenscroft, S., & Tonks, J. (2010). The social treatment: The benefits of group interventions in residential care setting. *Psychology and Aging*, 25, 157-167.

Haslam, C., Holme, A., Haslam, S. A., Iyer, A., Jetten, J., & Williams, W. H. (2008). Maintaining group memberships: Social identity continuity predicts well-being after stroke. *Neuropsychological Rehabilitation*, *18*(5-6), 671-691.

Haslam, S A, Reicher, S. D., & Levine, M. (2012). When other people are heaven, when other people are hell: How social identity determines the nature and impact of social support. In J. Jetten, C. Haslam, & S. A. Haslam (Eds.), *The Social Cure: Identity, health and well-being* (pp. 157–174). New York: Psychology Press.

Haslam, S. A. (2004). *Psychology in organizations*. London: Sage.

Haslam, S. A., & Reicher, S. (2006). Stressing the group: social identity and the unfolding dynamics of responses to stress. *Journal of applied psychology*, *91*(5), 1037.

Haslam, S. A., & Turner, J. C. (1995). Context-dependent variation in social stereotyping 2: The relationship between frame of reference, self-categorization and accentuation. *European Journal of Social Psychology, 22*, 251-277.

Haslam, S. A., Ellemers, N., Reicher, S. D., Reynolds, K. J., & Schmitt, M. T. (2010). The social identity perspective today: The impact of its defining ideas. In *Rediscovering social identity: Key readings*. Psychology Press, Taylor & Francis.

Haslam, S. A., Jetten, J., & Waghorn, C. (2009). Social identification, stress and citizenship in teams: a five‐ phase longitudinal study. *Stress and Health*, *25*(1), 21-30.

Haslam, S. A., Jetten, J., O'Brien, A., & Jacobs, E. (2004). Social identity, social influence and reactions to potentially stressful tasks: support for the selfcategorization model of stress. *Stress and Health*, *20*(1), 3-9.

Haslam, S. A., Jetten, J., Postmes, T., & Haslam, C. (2009). Social identity, health and wellbeing: an emerging agenda for applied psychology. *Applied Psychology*, *58*, 1, 1-23.

Haslam, S. A., O'Brien, A., Jetten, J., Vormedal, K., & Penna, S. (2005). Taking the strain: Social identity, social support, and the experience of stress. *British Journal of Social Psychology*, *44*, 3, 355-370.

Haslam, S. A., Oakes, P. J., McGarty, C., Turner, J. C., & Onorato, R. S. (1995). Contextual changes in the prototypicality of extreme and moderate outgroup members. *European Journal of Social Psychology*, *25*, 5, 509-530.

Haslam, S. A., Oakes, P. J., Reynolds, K. J., & Turner, J. C. (1999). Social identity salience and the emergence of stereotype consensus. *Personality and Social Psychology Bulletin*, *25*(7), 809-818.

Haslam, S. A., Oakes, P. J., Turner, J. C., & McGarty, C. (1995). Social categorization and group homogeneity: Changes in the perceived applicability of stereotype content as a function of comparative context and trait favourableness. *British Journal of Social Psychology*, *34*(2), 139-160.

Haslam, S. A., Powell, C., & Turner, J. C. (2000). Social identity, self-categorization, and work motivation: Rethinking the contribution of the group to positive and sustainable organisational outcomes. *Applied Psychology*, *49*, 319-339.

Haslam, S. A., Reicher, S., & Platow, M. J. (2011). *The new psychology of leadership: Identity, influence and power*. London: Psychology Press.

Haslam, S. A., van Knippenberg, D., Platow, M. J., & Ellemers, N. (Eds.). (2014). *Social identity at work: Developing theory for organisational practice*. N.Y. Psychology Press.

Heikkinen R-L, Kauppinen M. (2004). Depressive symptoms in late life: A 10-year follow-up. *Archives of Gerontology Geriatrics, 38*:239–250.

Heitzmann, C. A., & Kaplan, R. M. (1988). Assessment of methods for measuring social support. *Health Psychology*, *7*(1), 75-109.

Helgeson, V. S., Cohen, S., Schulz, R., & Yasko, J. (2000). Group support interventions for women with breast cancer: who benefits from what?. *Health psychology*, *19*(2), 107.

Helliwell, J. F., & Barrington-Leigh, C. P. (2010). Measuring and understanding subjective wellbeing. *Canadian Journal of Economics/Revue canadienne d'économique*, *43*(3), 729-753.

Henderson, S., Byrne, D. G., & Duncan-Jones, P. (1981). *Neurosis and the social environment* (Vol. 27). Academic Press.

Henry, J. D. & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non- clinical sample. *British Journal of Clinical Psychology*, *44*, 2, 227-239.

Henry, W. P., & Strupp, H. H. (1994). The therapeutic alliance as interpersonal process. *The working alliance: Theory, research, and practice*, 51-84.

Herman, J. L., Perry, C., & Van der Kolk, B. A. (1989). Childhood trauma in borderline personality disorder. *The American journal of psychiatry*, *146*(4), 490.

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 3, 319–340.

Hogg, M. A. (1993). Group cohesiveness: A critical review and some new directions. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (Vol. 4, pp. 85-111). Chichester, England: Wiley.

Hogg, M. A. (2001). Social categorization, depersonalization, and group behavior. In M. A. Hogg & R. S. Tindale (Eds.). *Blackwell Handbook of Social Psychology: Group Processes* (pp. 56-85). Oxford: Blackwell.

Hogg, M. A. (2001). Social identification, group protoytpiclaity, and emergent leadership. In M. A. Hogg & D. J. Terry (Eds), Social identity processes in organisational contexts, p. 197-212, Philladelphia, PA: Psychology Press.

Hogg, M. A., & Hardie, E. A. (1991). Social Attraction, Personal Attraction, and Self-Categorization, A Field Study. *Personality and Social Psychology Bulletin*, *17*(2), 175-180.

Hogg, M. A., & Hardie, E. A. (1992). Prototypicality, conformity and depersonalized attraction: A self-categorization analysis of group cohesiveness. *British Journal of Social Psychology,* 31, 41-56.

Hogg, M. A., CooperShaw, L., & Holzworth, D. W. (1993). Group prototypicality and depersonalized attraction in small interactive groups. *Personality and Social Psychology Bulletin*, *19*(4), 452-465.

Hogg, M. A., van Knippenberg, D., & Rast, D.E. III (2012). The social identity theory of leadership: theoretical origins, research findings, and conceptual developments. *European Review of Social Psychology,* 23, 258-304.

Holahan, C. J., & Moos, R. H. (1981). Social support and psychological distress: A longitudinal analysis. *Journal of Abnormal Psychology*, *90*(4), 365.

Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: a meta-analytic review. *PLoS Med*, *7*(7), e1000316 https://doi.org/10.1371/journal.pmed.1000316

Holt, M., & Espelage, D. (2005). Social support as a moderator between dating violence victimization and depression/anxiety among African American and Caucasian adolescent. *School Psychology Review*, 34, 309–328.

Hopkins, N., Regan, M., & Abell, J. (1997). On the context dependence of national stereotypes: Some Scottish data. *British Journal of Social Psychology*, *36*(4), 553-563.

House, J. S. (1987, December). Social support and social structure. In *Sociological forum* (Vol. 2, No. 1, pp. 135-146). Springer Netherlands.

House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science*, *241*(4865), 540.

House, J. S., Robbins, C., & Metzner, H. L. (1982). The association of social relationships and activities with mortality: prospective evidence from the Tecumseh Community Health Study. *American journal of epidemiology*, *116*(1), 123-140.

Hughes, M., & Demo, D. H (1989). Self-perceptions of Black Americans: Self esteem and personal efficacy. *American Journal of Sociology*, 95, 132-159.

Hughes, M., & Gove, W. R. (1981). Living alone, social integration, and mental health. *American Journal of Sociology*, *87*(1), 48-74.

Huppert, F. A. (2009). Psychological well‐being: Evidence regarding its causes and consequences. *Applied Psychology: Health and Well‐Being*, *1*(2), 137-164.

Huppert, F. A., & So, T. T. (2013). Flourishing across Europe: Application of a new conceptual framework for defining well-being. *Social Indicators Research*, *110*(3), 837-861.

Ilfeld, F. W. (1977). Current social stressors and symptoms of depression. *The American Journal of Psychiatry*. 34(2):161-6. DOI:10.1176/ajp.134.2.161

Ingham, A. G., Levinger, G., Graves, J., & Peckham, V. (1974). The Ringelmann effect: Studies of group size and group performance. *Journal of Experimental Social Psychology, 10*, 371-384.

Ingram, R. E., & Luxton, D. D. (2005). Vulnerability-stress models. In B. L. Hankin & J. R. Z. Abela (Eds.), *Development of psychopathology: A vulnerability-stress perspective*, 32-46. htttp://dx.doi.org/10.4135/9781452231655.n2

Iyer, A., Jetten, J., & Tsivrikos, D. (2008). Torn between identities: Predictors of adjustment to identity change. In F. Sani (Ed.), *Self-continuity: Individual and collective perspectives* (pp. 187–197). New York: Psychology Press.

Iyer, A., Jetten, J., Tsivrikos, D., Postmes, T., & Haslam, S. A. (2009). The more (and the more compatible) the merrier: Multiple group memberships and identity compatibility as predictors of adjustment after life transitions. *British Journal of Social Psychology*, *48*, 707-733.

Jackson, J. W. (2002). Intergroup attitudes as a function of different dimensions of group identification and perceived intergroup conflict. *Self and identity*, *1*(1), 11-33.

Jackson, L. A., Sullivan, L. A., Harnish, R., & Hodge, C. N. (1996). Achieving positive social identity: Social mobility, social creativity, and permeability of group boundaries. *Journal of Personality and Social Psychology*, *70*(2), 241.

Jacoby, A., Snape, D., & Baker, G. A. (2005). Epilepsy and social identity: the stigma of a chronic neurological disorder. *The Lancet Neurology*, *4*(3), 171-178.

Jahoda, M. (1958). *Current concepts of positive mental health*. New York: Basic Books

Jetten, J., Branscombe, N. R., & Spears, R. (2002). On being peripheral: effects of identity insecurity on personal and collective self-esteem. *European Journal of Social Psychology*, *32*, 105-123.

Jetten, J., Branscombe, N. R., Spears, R., & McKimmie, B. M. (2003). Predicting the paths of peripherals: The interaction of identification and future possibilities. *Personality and Social Psychology Bulletin*, *29*(1), 130-140.

Jetten, J., Haslam, C., & Haslam, A. S. (Eds.). (2012). *The social cure: Identity, health and well-being*. Psychology Press.

Jetten, J., Haslam, C., Pugliese, C., Tonks, J., & Haslam, S. A. (2010). Declining autobiographical memory and the loss of identity: Effects on well-being. *Journal of Clinical and Experimental Neuropsychology*, *32*(4), 408-416.

Jetten, J., Hogg, M. A., & Mullin, B.-A. (2000). In-group variability and motivation to reduce subjective uncertainty. *Group Dynamics: Theory, Research, and Practice*, *4*, 184-198.

Jetten, J., Spears, R., & Manstead, A. S. R. (1997). Distinctiveness threat and prototypicality: Combined effects on intergroup discrimination and collective self-esteem. *European Journal of Social Psychology*, *27*, 635-657.

Johnson, J. G., Cohen, P., Brown, J., Smailes, E. M., & Bernstein, D. P. (1999). Childhood maltreatment increases risk for personality disorders during early adulthood. *Archives of general psychiatry*, *56*(7), 600-606.

Johnson, S. A., & Ashforth, B. E. (2008). Externalization of employment in a service environment: the role of organizational and customer identification. *Journal of Organizational Behavior*, *29*(3), 287-309.

Jones, J. M., & Jetten, J. (2011). Recovering from strain and enduring pain: Multiple group memberships promote resilience in the face of physical challenges. *Social Psychological and Personality Science*, *2*, 239-244.

Jones, J. M., Williams, W. H., Jetten, J., Haslam, S. A., Harris, A., & Gleibs, I. H. (2012). The role of psychological symptoms and social group memberships in the development of posttraumatic stress after traumatic injury. *British journal of health psychology*, *17*(4), 798-811.

Jones, M. C. (1924). A laboratory study of fear: The case of Peter. *Pedagogical Seminary, 31*, 308–315.

Jung, E., Hecht, M. L., & Wadsworth, B. C. (2007). The role of identity in international students' psychological well-being in the United States: A model of depression level, identity gaps, discrimination, and acculturation. *International Journal of Intercultural Relations*, *31*(5), 605-624.

Kahneman, D., Diener, E., & Schwarz, N. (Eds.). (1999). *Well-being: Foundations of hedonic psychology*. Russell Sage Foundation.

Katz, D., & Braly, K. (1933). Racial stereotypes of one hundred college students. *The Journal of Abnormal and Social Psychology*, *28*(3), 280.

Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban health*, *78*(3), 458-467.

Kawasawa, M. (1991). Toward an assessment of social identity: The structure of group idenitifcation and its effects on in-group evaluations. *British Journal of Social Psychology, 30*, 293-307.

Kellezi, B. & Reicher, S. (2012). Social cure or social curse? The psychological impact of extreme events during the Kosovo conflict. In: J. Jetten, C. Haslam and A. Haslam, eds., *The social cure: identity, health and well-being.* Hove: Psychology Press, pp. 217-233. ISBN 9781848720213

Kenny, D. A. (2014). *Measuring Model Fit* (webpage) Retrieved Jan15 2017 from http://davidakenny.net/cm/respec.html.

Kessler, R. C., & McLeod, J. D. (1985). *Social support and mental health in community samples*. Academic Press.

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L., ... & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological medicine*, *32*(6), 959-976.

Kessler, R. C., Green, J. G., Gruber, M. J., Sampson, N. A., Bromet, E., Cuitan, M., ... & Lara, C. (2010). Screening for serious mental illness in the general population with the K6 screening scale: results from the WHO World Mental Health (WMH) survey initiative. *International journal of methods in psychiatric research*, *19*(S1), 4-22.

Kiecolt-Glaser, J. K., Malarkey, W. B., Chee, M., Newton, T., Cacioppo, J. T., Mao, H. Y., & Glaser, R. (1993). Negative behavior during marital conflict is associated with immunological down-regulation. *Psychosomatic medicine*, *55*(5), 395-409.

King, L. M. (1978). Social and cultural influences on psychopathology. *Annual Review of Psychology*, *29*(1), 405-433.

Kingsley, J., & Townsend, M. (2006). 'Dig in'to social capital: community gardens as mechanisms for growing urban social connectedness. *Urban Policy and Research*, *24*(4), 525-537.

Kitayama, S., Markus, H. R., & Matsumoto, H. (1995). Culture, self, and emotion: A cultural perspective on" self-conscious" emotions. In J. P. Tangney & K. W. Fischer (Eds.), *Self-conscious emotions: The psychology of shame, guilt, embarrassment, and pride* (pp. 439-464). New York: Guilford Press.

Klerman, G. L., & Weissman, M. M. (1994). *Interpersonal psychotherapy of depression: A brief, focused, specific strategy*. Jason Aronson, Incorporated.

Kline, T. (2005). *Psychological testing: A practical approach to design and evaluation*. UK: Sage.

Knight, C., Haslam, S. A., & Haslam, C. (2010). In home or at home? Evidence that collective decision making enhances older adults' social identification, well-being and use of communal space when moving to a new care facility. *Aging and Society, 30*, 1393–1418. doi:10.1017/ S0144686X10000656

Koch, E. J., & Shepperd, J. A. (2004). Is Self- Complexity Linked to Better Coping? A Review of the Literature. *Journal of personality*, *72*(4), 727-760.

Koivisto, S., & Lipponen, J. (2015). A leader's procedural justice, respect and extra-role behaviour: The roles of leader in-group prototypicality and identification. *Social Justice Research*, *28*, 187-206.

Koivisto, S., Lipponen, J., & Platow, M. J. (2013). Organizational and supervisory justice effects on experienced threat during change: The moderating role of leader in-group representativeness. *Leadership Quarterly*, *24*, 595-607.

Kopp, M. S., Szedmak, S., & Skrabski, A. (1998). Socioeconomic differences and psychosocial aspects of stress in a changing society. *Annals of the New York Academy of Sciences*, *851*(1), 538-543.

Koss, M. P. (1990). The women's mental health research agenda: Violence against women. *American Psychologist*, *45*(3), 374.

Kramer, R. M. (1998). Paranoid cognition in social systems: Thinking and acting in the shadow of doubt. *Personality and Social Psychology Review,* 2, 251-275.

Kreminski, M., Barry, M. & Platow, M. (2018). The effects of the incompatible 'solider' identity upon depression in former Australian Army Personnel. *Journal of Military and Veterans Health* (in press).

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The phq- 9. *Journal of general internal medicine*, *16*(9), 606-613.

Kuiper, N. A., & Derry, P. A. (1982). Depressed and nondepressed content self-reference in mild depressives. *Journal of personality*, *50*(1), 67-80.

Kyrios, M., Nelson, B., Ahern, C., Fuchs, T., Parnas, J. (Eds.) (2015). The self in Psychopathology, *Psychopathology, 48*, 5. doi:10.1159/isbn.978-3-318-05616-7

Lacey, R. E., Kumari, M., & Bartley, M. (2014). Social isolation in childhood and adult inflammation: Evidence from the National Child Development Study. *Psychoneuroendocrinology*, *50*, 85-94.

Leach, C. W., van Zomeren, M., Zebel, S., Vliek, M. L. W., Pennekamp, S. F., Doosje, B., Ouwerkerk, J. W., & Spears, R. (2008). Russell Group-level self-definition and self-investment: A hierarchical (multicomponent) model of in-group identification. *Journal of Personality and Social Psychology*, *95*, 144-165.

Leary, M. R, Tambor, E. S., Tredal, S. K., & Downs, D. L. (1995). Self esteem as an interpersonal monitor: The sociometer hypothesis, *Journal of Personality and Social Psychology, 68*, 518-530. Doi:10.1037/00223514.68.3.518

Leary, M. R. (1990). Responses to social exclusion: Social anxiety, jealousy, loneliness, depression, and low self-esteem. *Journal of Social and Clinical Psychology*, *9*(2), 221-229.

Leary, M. R., & Kowalski, R. M. (1990). Impression management: A literature review and two-component model. *Psychological bulletin*, *107*(1), 34.

Leary, M. R., & Springer, C. A. (2001) in *Behaving Badly: Aversive Behaviours in Interpersonal Relationships,* Kowalski, R. (Ed.), American Psychological Association: Washington, pp. 151–175.

Leavy, R. L. (1983). Social support and psychological disorder: A review. *Journal of community psychology*, *11*(1), 3-21.

Lee, R. M. & Robbins, S. B. (1998). The relationship between social connectedness and anxiety, self-esteem and social identity. *Journal of Counselling Psychology*, 45, 338-345.

Levine, R. M., & Reicher, S. D. (1996). Making sense of symptoms: Self- categorization and the meaning of illness and injury. *British Journal of Social Psychology*, *35*(2), 245-256.

Lewin, K. (1948). *Resolving social conflicts; selected papers on group dynamics*. NY: Harper & Row.

Lickel, B., Hamilton, D. L., Wieczorkowska, G., Lewis, A., Sherman, S. J., & Uhles, A. N. (2000). Varieties of groups and the perception of group entitativity. *Journal of personality and social psychology*, *78*(2), 223.

Lilly, J. C. (1956). Mental effects of reduction of ordinary levels of physical stimuli on intact, healthy persons. 13-20 & 44, *In illustrative Strategies for Research on Psychopathology in Mental health, Symposium No. 2. Group for the Advancement of Psychiatry*: NY, p.47.

Linville PW. (1985). Self-Complexity and affective extremity: Don't put all of your eggs in one cognitive basket. *Social Cognition*, 3:94–120.

Linville PW. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology,* 52(4):663–76.

Louis, M. R. (1980). Surprise and sense making: What newcomers experience in entering unfamiliar organisational settings. *Administrative Science Quarterly,* 25, 226-251.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behavioral Assessment*, *33*, 335-343.

Lowenthal, M. F, & Haven, C. (1968). Interaction and adaptation: Intimacy as a critical variable. *American Sociological Review*, 33, 20- 30.

Lucas, R. E. (2007). Adaptation and the set-point model of subjective well-being: Does happiness change after major life events? *Current Directions in Psychological Science*, *16*(2), 75-79.

Lucas, R. E., Diener, E., & Suh, E. (1996). Discriminant validity of well-being measures. *Journal of personality and social psychology*, *71*(3), 616.

Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and social psychology bulletin*, *18*(3), 302-318.

Mackie, D. M. (1986). Social identification effects in group polarization. *Journal of Personality and Social Psychology*, *50*(4), 720.

Major, B., & Eccleston, C. P. (2005). Stigma and Social Exclusion. In D. Abrams, M. A. Hogg, & J. M. Marques (Eds.), *The social psychology of inclusion and exclusion* (pp. 63-87). New York: Psychology Press.

Major, B., Quinton, W. J., & McCoy, S. K. (2002). Antecedents and consequences of attributions to discrimination: Theoretical and empirical advances. *Advances in experimental social psychology*, *34*, 251-330.

Mann, L. (1981). The baiting crowd in episodes or threatened suicide. *Journal of Personality and Social Psychology, 41*, 703-709.

Markus, H. R., & Kitayama, S. (1991). Cultural variation in the self-concept. *Multidisciplinary perspectives on the self*, In: Strauss J., Goethals G.R. (eds) The Self: Interdisciplinary Approaches. Springer, New York, NY: 18-48. https://doi.org/10.1007/978-1-4684-8264-5_2

Marmot, M. (2005). Social determinants of health inequalities. *The Lancet*, *365*(9464), 1099-1104.

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68*(3), 438-450. http://dx.doi.org/10.1037/0022-006X.68.3.438

Maslow, A. H. (1943). A theory of human motivation. *Psychological review*, *50*(4), 370: 382–383

Maslow, A. H. (1962). Some basic propositions of a growth and self-actualization psychology. *Perceiving, behaving, becoming: A new focus for education*, 34-49.

McConnell, A. R. (2011). The Multiple Self-Aspects Framework: Self-Concept Representation and Its Implications. *Personality and Social Psychology Review,* 15, 1, 3-27. doi: 10.1177/1088868310371101

McCoy, S. K., & Major, B. (2003). Group identification moderates emotional responses to perceived prejudice. *Personality and Social Psychology Bulletin*, *29*(8), 1005-1017.

McEwen, B. S. (2008). Central effects of stress hormones in health and disease: Understanding the protective and damaging effects of stress and stress mediators. *European journal of pharmacology*, *583*(2), 174-185.

McGarty, C. (1999). *Categorization in social psychology*. London: Sage.

McGarty, C., Turner, J. C., Hogg, M. A., David, B., & Wetherell, M. S. (1992). Group polarization as conformity to the prototypical group member. *British Journal of Social Psychology*, *31*, 1-19.

McGarty, C., Yzerbyt, V. Y., & Spears, R. (Eds.). (2002). *Stereotypes as explanations: The formation of meaningful beliefs about social groups*. Cambridge University Press.

McLaren, N. (1998). A critical review of the biopsychosocial model. *Australian & New Zealand Journal of Psychiatry*, *32*(1), 86-92.

McWilliams, N. (2004). *Psychoanalytic Psychotherapy: A practitioners, Guide.* Guilford Press.

Melchert, T. P. (2011). *Foundations of Professional Psychology: The End of Theoretical Orientations and the Emergence of the Biopsychosocial Approach*. Elsevier Insights, London.

Menninger, K. A. (1930). *The human mind.* Oxford: Knopf

Meyer, I. H. (2013). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence.

Mikulincer, M., *& Shaver, P. R. (2007). Attachment in adulthood: structure, dynamics, and change. New York: Guilford.*

Mitchell, R. E., Billings, A. G., & Moos, R. H. (1982). Social support and well-being: Implications for prevention programs. *Journal of Primary Prevention*, *3*(2), 77-98.

Molero, F., Fuster, M. J., Jetten, J., & Moriano, J. A. (2011). Living with HIV/AIDS: A psychosocial perspective on coping with prejudice and discrimination. *Journal of Applied Social Psychology*, *41*(3), 609-626.

Moreland, R. L. (1985). Social Categorisation and the assimilation of 'new' group members. *Journal of Personality and Social Psychology,* 48, 1173-1190.

Moreland, R. L., Hogg, M. A., & Hains, S. C. (1994). Back to the future: Social psychological research on groups. *Journal of Experimental Social Psychology*, *30,* 6, 527-555.

Moreland, R. L., Levine, J. M., & Cini, M. A. (1993). Group socialization: The role of commitment. In M. A. Hogg & D. Abrams (Eds.), *Group motivation: Social psychological perspectives* (pp. 105-129). Hertfordshire, HP2 7EZ, England: Harvester Wheatsheaf.

Morton, T., Wright, R., Peters, K., Reynolds, K. J., & Haslam, S. A. (2012). Social identity and the dynamics of organizational communication. *Handbook of intergroup communication*, 319-330.

Mossakowski, K. N. (2003). Coping with perceived discrimination: does ethnic identity protect mental health? *Journal of Health and Social Behavior*, 318-331.

Neeleman, J., Power, M. J. (1994). Social support and depression in three groups of psychiatric patients and a group of medical controls. *Society Psychiatry Psychiatric Epidemiology, 29*, 46–51.

Nisbett, R. E., & Masuda, T. (2003). Culture and point of view. *Proceedings of the National Academy of Sciences*, *100*(19), 11163-11170.

Noel, J. G., Wann, D. L., & Branscombe, N. R. (1995). Public Negativity Toward Outgroups. *Journal of Personality and Social Psychology*, *68*(1), 127-137.

Nutt, D. J. (2008). Relationship of neurotransmitters to the symptoms of major depressive disorder. *The Journal of clinical psychiatry*, *69*, 4-7.

O'Brien, G. E. (1986). *Psychology of work and unemployment*. John Wiley & Sons.

O'Brien, L. T., & Major, B. (2005). System-Justifying Beliefs and Psychological Well-Being: The Roles of Group Status and Identity, *Personality and Social Psychology Bulletin*, 31, 12, 1718 – 1729. doi.org/10.1177/0146167205278261

Oakes, P. J. (1987). The salience of social categories. In J.C. Turner, M.A. Hogg, P.J. Oakes, S. D. Reicher, & Wetherell (Eds.), *Rediscovering the social group: A Self Categorisation Theory* (pp. 118-141). Oxford: Blackwell.

Oakes, P. J., Haslam, S. A. & Turner, J. C. (1994). *Stereotyping and social reality*. Malden: Blackwell Publishing.

Oakes, P. J., Turner, J. C. & Haslam, S. A. (1991). Perceiving people as group members: The role of fit in the salience of social categorizations. *British Journal of Social Psychology, 30*, 125-144.

Outten, H. R., Schmitt, M. T., Garcia, D. M., & Branscombe, N. R. (2009). Coping Options: Missing Links between Minority Group Identification and Psychological Wellbeing. *Applied Psychology*, *58*(1), 146-170.

Packer, D. J. (2008). On being both with us and against us: A normative conflict model of dissent in social groups. *Personality and Social Psychology Review*, *12*(1), 50-72.

Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment*, *5*(2), 164.

Paykel, E. S. (1985). The Clinical Interview for Depression: development, reliability and validity. *Journal of Affective Disorders*, *9*(1), 85-96.

Pemberton, R., & Tyszkiewicz, M. D. F. (2016). Factors contributing to depressive mood states in everyday life: a systematic review. *Journal of affective disorders*, *200*, 103-110.

Peters, K., Ryan, M., Haslam, A., & Fernandes, H. (2012). To Belong or Not to Belong – Evidence that women's occupational dis-identification is promoted by lack of fit with masculine occupational prototypes. *Journal of Personnel Psychology, 11*, 3, 148-158. DOI: 10.1027/1866-5888/a000067.

Peterson, C., Maier, S. F., & Seligman, M. E. (1993). *Learned helplessness: A theory for the age of personal control*. Theory for the Age of Personal.

Phinney, J. S., Cantu, C. L., & Kurtz, D. A. (1997). Ethnic and American identity as predictors of self-esteem among African American, Latino, and White adolescents. *Journal of Youth and adolescence*, *26*(2), 165-185.

Pickett, C. L., & Brewer, M. B. (2005). The role of exclusion in maintaining ingroup inclusion. *The social psychology of inclusion and exclusion*, 89-112.

Plant, E., & Sachs-Ericsson, N. (2004). Racial and ethnic difference in depression: The roles of social support and meeting basic needs. *Journal of Consulting and Clinical Psychology*, 72, 41–52.

Platow, M. J. & Hunter, J. A. (2014). Necessarily collectivistic. *The Psychologist*, 27(11), 838-841.

Platow, M. J., & van Knippenberg, D. (2001). A social identity analysis of leadership endorsement: The effects of leader ingroup prototypicality and distributive intergroup fairness. *Personality and Social Psychology Bulletin*, *27*, 11, 1508-1519.

Platow, M. J., Byrne, L., & Ryan, M. K. (2005). Experimentally manipulated high in-group status can buffer personal self-esteem against discrimination. *European Journal of Social Psychology*, *35*, 599-608.

Platow, M. J., McClintock, C. G., & Liebrand, W. B. (1990). Predicting intergroup fairness and ingroup bias in the minimal group paradigm. *European Journal of Social Psychology*, 20(3), 221–239.

Platow, M. J., van Knippenberg, D., Haslam, S. A., van Knippenberg, B., & Spears, R. (2006). A special gift we bestow on you for being representative of us: Considering leader charisma from a self-categorization perspective. *British Journal of Social Psychology*, *45*, 303-320.

Platow, M. J., Voudouris, N. J., Gilford, N., Jamieson, R., Najdovski, L., Papaleo, N., & Terry, L. (2007). Ingroup reassurance in a pain setting produces lower levels of physiological arousal: direct support for a selfcategorization analysis of social influence. *European Journal of Social Psychology*, *37*(4), 649-660.

Postmes, T., Haslam, S. A., & Jans, L. (2013). A singleitem measure of social identification: Reliability, validity, and utility. *British journal of social psychology*, *52*(4), 597-617.

Postmes, T., Haslam, S. A., & Lise, J. (2013). A single-item measure of social identification: Reliability, validity, and utility. *British Journal of Social Psychology*, 52, 597-617.

Poteat, V.P, Mereish, E.H, Birkett, M. (2015). The negative effects of prejudice on interpersonal relationships within adolescent peer groups. *Developmental Psychology*, 51, 4, 544-53. doi: 10.1037/a0038914.

Putnam, R. D. (2001). *Bowling alone: The collapse and revival of American community*. Simon and Schuster.

Radloff, L.S. (1977). The CES-D scale: a self-report depression scale for research in the general population. *Applied Psychological Measurement*.1, 385-401.

Rafaeli-Mor, E., Gotlib, I. H., & Revelle, W. (1999). The meaning and measurement of self-complexity. *Personality and Individual Differences,* 16, 230–245.

Reicher, S., & Haslam, S. A. (2006). Rethinking the psychology of tyranny: The BBC prison study. *The British Journal of Social Psychology*, *45*, 1.

Reicher, S., & Sani, F. (1998). Introducing SAGA: Structural analysis of group arguments. *Group Dynamics: Theory, Research, and Practice*, *2*(4), 267.

Reynolds, K. J., Bizumic, B., Subasic, E., Turner, J. C., Branscombe, N., Mavor, K. I., & Batalha, L. (2012). Social identity and personality processes: Non- Aboriginal Australian identity and Neuroticism. *European Journal of Social Psychology*, *42*(2), 252-262.

Richman, N, E., Sokolove, R. L. (1992). The experience of aloneness, object representation, and evocative memory in borderline and neurotic patients. *Psychoanalytic Psychology*. 9 :77–91.

Roberts, R. E.,& Vernon, S. W. (1983). The Center for Epidemiologic Studies Depression Scale: its use in a community sample. American Journal of Psychiatry. 140, 1, 41-6.

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, *27*, 2, 151-161.

Rogers, C. R. (1951/2015). *Client-centred therapy*. London: Robinson. p. 489.

Rogers, C. R. (1959). *A theory of therapy, personality, and interpersonal relationships: As developed in the client-centered framework* (Vol. 3, pp. 184-256). New York: McGraw-Hill.

Rook, K. S. (1987). Social support versus companionship: Effects on life stress, loneliness, and evaluations by others. *Journal of Personality and Social Psychology*, 52, 1132-1147

Rook, K. S. (1990). Social relationships as a source of companionship: implications for older adults psychological well-being. In Sarason, B. R. Sarason, T. G. & Pierce, G. R. (Eds). *Social support: an interactional view* (p. 221-250). New York: Wiley

Rosenberg, M. (1965). *Society and the adolescent self-image* (Vol. 11, p. 326). Princeton, NJ: Princeton university press.

Rosenfield, S. (1999). Gender and Mental Health: Do Women Have More Psychopathology, Men More, or Both the Same (and Why). In Horwitz, A & Scheid, T (Ed). *In Handbook for Study of Mental Health.* Cambridge: Cambridge University Press.

Rothberg, J. M., & Jones, F. D. (1987). Suicide in the U.S. Army: Epidemiological and periodic aspects. *Suicide and Life-Threatening Behavior*, 17, 119-132

Ruble, L., Willis, H., & McLaughlin Crabtree, V. (2008). Social skills group therapy for autism spectrum disorders. *Clinical Case Studies*, *7*(4), 287-300.

Rush, A. J., Warden, D., Wisniewski, S. R., Fava, M., Trivedi, M. H., Gaynes, B. N. *et al*. (2009). *STAR*D: revising conventional wisdom. CNS Drugs*, 23, 627–647.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual review of psychology*, *52*(1), 141-166.

Ryan, R. M., Kuhl, J., & Deci, E. L. (1997). Nature and autonomy: An organizational view of social and neurobiological aspects of self-regulation in behavior and development. *Development and psychopathology*, *9*(4), 701-728.

Ryff, C. D., & Singer, B. (1996). Psychological well-being: Meaning, measurement, and implications for psychotherapy research. *Psychotherapy and psychosomatics*, *65*(1), 14-23.

Ryff, C.D. (1995). Psychological well-being in adult life. *Current Directions in Psychological Science, 4*, 99-104.

Ryff, C.D., & Keyes, C.L.M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719-727.

Ryff, C.D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry, 9*, 1-28.

Sani, F., & Reicher, S. (1998). When consensus fails: An analysis of the schism within the Italian Communist Party (1991). *European Journal of Social Psychology*, *28*(4), 623-645.

Sani, F., Herrera, M., Wakefield, J. R., Boroch, O., & Gulyas, C. (2012). Comparing social contact and group identification as predictors of mental health. *British Journal of Social Psychology*, *51*(4), 781-790.

Schachter, S. (1959). *The psychology of affiliation* (p. 141). Stanford, CA: Stanford University Press.

Schacter, S., (1959). *Psychology of Affiliation*, Palo Alto, CA: Stanford University Press.

Schenkler, B. R. (1980). Impression Management: The self-concept, social identity and interpersonal relations. Monterey, Calif: Brooks/Cole.

Schmitt, M. T., & Branscombe, N. R., (2001). The good, the bad, and the manly: Threats to one's prototypicality and evaluations of fellow in-group members. *Journal of Experimental Social Psychology*, *37*, 510-517.

Schmitt, M. T., Branscombe, N. R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: A meta-analytic review. *Psychological Bulletin*, *140*(4), 921.

Schmitt, M. T., Branscombe, N. R., Silvia, P. J., Garcia, D. M., & Spears, R. (2006). Categorizing at the group-level in response to intragroup social comparisons: a self-categorization theory integration of self-evaluation and social identity motives. *European Journal of Social Psychology*, *36*, 297-314.

Schmitt, M. T., Spears, R., & Branscombe, N. R. (2003). Constructing a minority group identity out of shared rejection: The case of international students. *European Journal of Social Psychology*, *33*(1), 1-12.

Schofield, P. E., Pattison, P. E., Hill, D. J., & Borland, R. (2003). Youth culture and smoking: Integrating social group processes and individual cognitive processes

in a model of health-related behaviours. *Journal of Health Psychology*, *8*(3), 291-306.

Scott, G., Ciarrochi, J., & Deane, F. P. (2004). Disadvantages of being an individualist in an individualistic culture: Idiocentrism, emotional competence, stress, and mental health. *Australian Psychologist*, *39*(2), 143-154.

Segrin C. (1999). Social skills, stressful events, and the development of psychosocial problems. *Journal of Social & Clinical Psychology, 18*: 14–34.

Seifert, T. A (2005). *The Ruff Scales of Psychological Well-being*. Retrieved from http://www.libertalarts.wabash.edu/ruff-scales/.

Seligman, M. E. (1975). *Helplessness: On depression, development, and death*. WH Freeman/Times Books/Henry Holt & Co.

Seligman, M. E. (2011). *Learned optimism: How to change your mind and your life*. Vintage, NY.

Sellers, R. M., Rowley, S. A., Chavous, T. M., Shelton, J. N., & Smith, M. A. (1997). Multidimensional Inventory of Black Identity: A preliminary investigation of reliability and construct validity. *Journal of personality and social psychology*, *73*(4), 805.

Sellers, R. M., Smith, M. A., Shelton, J. N., Rowley, S. A., & Chavous, T. M. (1998). Multidimensional model of racial identity: A reconceptualization of African American racial identity. *Personality and Social Psychology Review*, *2*(1), 18-39.

Shadden, B. B., & Agan, J. P. (2004). Renegotiation of identity: The social context of aphasia support groups. *Topics in language disorders*, *24*(3), 174-186.

Shaver, P., & Klinnert, M. (1982). Schachter's theories of affiliation and emotions: Implications of developmental research. *Review of personality and social psychology*, *3*, 37-71.

Sheeran, P., Abrams, D., & Orbel, S. (1995). Unemployment, self-esteem, and depression: A social comparison theory approach. *Basic and Applied Social Psychology*, *17*, 65-82.

Sherif, M. (1935). A study of some social factors in perception. *Archives of Psychology (Columbia University)*.

Sherif, M. (1937). An experimental approach to the study of attitudes. *Sociometry*, *1*(1/2), 90-98.

Sherif, M. (1953). The concept of reference groups in human relations. *Group relations at the crossroads*, 203-231.

Sherif, M., & Cantril, H. (1947). *The psychology of ego-involvements, social attitudes and identifications*. New York: Wiley.

Sherif, M., & Sherif, C. W. (1964). *Reference groups; exploration into conformity and deviation of adolescents*. Harper and Row.

Showers, C. J. (1999). Self-organization in emotional contexts. In J. P. Forgas (Ed.), *Feeling and thinking: The role of affect in social cognition* (pp. 283–307). Cambridge: Cambridge University Press.

Sibley, C. G., & Barlow, F. K. (2009). Ubiquity of whiteness in majority group national imagination: Australian= White, but New Zealander does not. *Australian Journal of Psychology*, *61*(3), 119-127.

Sidani, J. E., Shensa, A., Radovic, A., Miller, E., Colditz, J. B., Hoffman, B. L., ... & Primack, B. A. (2016). Association between social media use and depression among US young adults. *Depression and anxiety*, *33*(4), 323-331.

Simon, B., & Stürmer, S. (2003). Respect for group members: Intragroup determinants of collective identification and group-serving behavior. *Personality and Social Psychology Bulletin*, *29*(2), 183-193.

Skinner, B. F. (1953). *Science and human behavior.* New York: Free Press.

Social Exclusion Knowledge Network (2008). Popay, J., Escorel, S., Hernández, M., Johnston, H. Mathieson, J., Rispel, L., (Eds.). *Understanding and Tackling Social Exclusion Final Report to the WHO Commission on Social Determinants of Health From the Social Exclusion Knowledge Network*. Retrieved on the 3rd March, 2018. From http://www.who.int/social_determinants/themes/socialexclusion/en/

Spears, R., Doosje, B., & Ellemers, N. (1997). Self-stereotyping in the face of threats to group status and distinctiveness: The role of group identification. *Personality and Social Psychology Bulletin*, *23*, 5, 538-553.

Spitz, R. A. (1945). The psychoanalytic study of the child. New York, *International University Press, 1*, 53.

St Claire, L. S., & He, Y. (2009). How Do I Know if I Need a Hearing Aid? Further Support for the Self-Categorisation Approach to Symptom Perception. *Applied Psychology*, *58*(1), 24-41.

Stapel, D. A., & Suls, J. (2004). Method matters: effects of explicit versus implicit social comparisons on activation, behavior, and self-views. *Journal of Personality and Social Psychology*, *87*(6), 860.

Steel, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, *69*, 797-811.

Steffens, N. K., Haslam, S. A., Reicher, S. D., Platow, M. J., Fransen, K., Yang, J., Ryan, M. K., Jetten, J., Peters, K. O., & Boen, F. (2014). Leadership as social identity management: Introducing the identity leadership inventory (ILI) to assess and validate a four-dimensional model. *The Leadership Quarterly*, *25*, 1001-1024.

Steffens, N. K., Schuh, S. C., Haslam, S. A., Perez, A., & Dick, R. (2015). 'Of the group' and 'for the group': How followership is shaped by leaders' prototypicality and group identification. *European Journal of Social Psychology*, *45*(2), 180-190.

Stevenson, C., McNamara, N., & Muldoon, O. (2014). Stigmatised Identity and Service Usage in Disadvantaged Communities: Residents', community workers' and service providers' perspectives. *Journal of Community and Applied Social Psychology*, *24*(6), 453-466. DOI: 10.1002/casp.2184

Strauss, J. S. (1989). Subjective experiences of schizophrenia: Toward a new dynamic psychiatry: II. *Schizophrenia Bulletin*, *15*(2), 179.

Stroebe, W., & Stroebe, M. S. (1987). *Bereavement and health: The psychological and physical consequences of partner loss*. Cambridge University Press.

Ströhle, A. (2009). Physical activity, exercise, depression and anxiety disorders. *Journal of neural transmission*, *116*(6), 777.

Sullivan, P. F., Neale, M. C., & Kendler, K. S. (2000). Genetic epidemiology of major depression: review and meta-analysis. *American Journal of Psychiatry*, *157*(10), 1552-1562.

Suls, J., & Rothman, A. (2004). Evolution of the biopsychosocial model: prospects and challenges for health psychology. *Health Psychology*, *23*(2), 119.

Tabachnick, B. G., & Fidell, L. S. (2007). Multivariate analysis of variance and covariance. *Using multivariate statistics*, *3*, 402-407.

Tajfel, H. (1969). Cognitive aspects of prejudice. *Journal of Biosocial Science*, *1*(S1), 173-191.

Tajfel, H. (1972). Social categorization. English manuscript of 'La catégorisation sociale.' In S. Moscovici (Ed.), *Introduction à la Psychologie Sociale* (Vol. 1, pp. 272–302). Paris: Larousse

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. *The social psychology of intergroup relations*, *33*(47), 74.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behaviour. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (2nd ed., pp. 7-24). Chicago: Nelson-Hall.

Teicher, M. H. (2000). Wounds that time wouldn't heal: the neurobiology of childhood abuse. Cerebrum. 2: 50–67.

Tennant, C. (2002). Life events, stress and depression: a review of recent findings. *Australian and New Zealand Journal of Psychiatry*, *36*(2), 173-182.

Tew, J. (2005). Power relations, social order and mental distress. In J. Tew (ed.), *Social Perspectives in Mental Health*. London: Jessica Kingsley.

Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What next? *Journal of health and social behavior*, 53-79.

Thurstone, L. L. (1947). *Multiple factor analysis*. Chicago: University of Chicago Press.

Turner, I., Reynolds, K. J., Lee, E., Subasic, E., & Bromhead, D. (2014). Well-being, school climate, and the social identity process: A latent growth model study of bullying perpetration and peer victimization. *School Psychology Quarterly, 29*, 3, 320.

Turner, J. C. (1985). Social categorization and the self-concept: A social cognitive theory of group behavior. *Advances in group processes*, *2*, 77-122.

Turner, J. C. (1991). *Social influence*. Thomson Brooks/Cole Publishing Co.

Turner, J. C., & Oakes, P. J. (1986). The significance of the social identity concept for social psychology with reference to individualism, interactionism and social influence. *British Journal of Social Psychology*, *25*, 237-252.

Turner, J. C., Oakes, P. J., Haslam, S. A., & McGarty, C. (1994). Self and collective: Cognition and social context. *Personality and social psychology bulletin*, *20*(5), 454-463.

Turner, J.C., Hogg, M.A., Oakes, P.J., Reicher, S.D., & Wetherell, M.S. (1987). *Rediscovering the social group: A self-categorization theory.* Oxford: Blackwell.

Turner, R. J. (1981). Social support as a contingency in psychological well-being. *Journal of Health and Social Behavior, 22*, 357–367.

Turner, R. J. (1983). Direct, indirect, and moderating effects of social support upon psychological distress and associated conditions. In H. B. Kaplan (Ed.), *Psychosocial stress: Trends in theory and research*. New York: Academic Press.

van Dick, R., & Haslam, S. A. (2012). Stress and well-being in the workplace: Support for key propositions from the social identity approach. In J. Jetten, C. Haslam, & S. A. Haslam (Eds.), *The social cure: Identity, health and well-being* (pp. 175-194). New York: Psychology Press.

van Dijke, M., & De Cremer, D. (2008). How leader prototypicality affects followers' status: The role of procedural fairness. *European Journal of Work and Organizational Psychology*, 17(2), 226–250. doi: 10.1080/13594320701743491

van Kleef, G. A., Steinel, W., & Homan, A. C. (2013). On being peripheral and paying attention: Prototypicality and information processing in intergroup conflict. *Journal of Applied Psychology*, *98*, 63-79.

van Knippenberg, A., van Twuyver, M., & Pepels, J. (1994). Factors affecting social categorisation processes in memory. *British Journal of Social Psychology*, 33, 419-431.

van Knippenberg, B., & van Knippenberg, D. (2005). Leader self-sacrifice and leadership effectiveness; The Moderating role of leader prototypicality. *Journal of Applied Psychology*, 90, 25-37.

van Knippenberg, D. (2011). Embodying who we are: Leader group prototypicality and leadership effectiveness. *The Leadership Quarterly, 22*, 1078-1091.

van Knippenberg, D. V., & Wilke, H. (1992). Prototypicality of arguments and conformity to ingroup norms. *European Journal of Social Psychology*, *22*(2), 141-155.

van Knippenberg, D., & Hogg, M. A. (2003). A social identity model of leadership effectiveness in organizations. *Research in organizational behavior*, *25*, 243-295.

van Knippenberg, D., Lossie, N., & Wilke, H. (1994). Ingroup prototypicality and persuasion: Determinants of heuristic and systematic message processing. *British Journal of Social Psychology*, *33*(3), 289-300.

Van Maanen, J. (1977). Experiencing organisation: Notes on the meaning of careers and socialisation. In J. Van Maanen (Ed.), *Organisational careers: Some new perspectives* (pp.15-45) New York: Wiley.

Vega, W., Kolody, B., Valle, R., & Weir, J. (1991). Social networks, social support, and their relationship to depression among immigrant Mexican women. *Human organization*, *50*(2), 154-162.

Victor, C., Scambler, S., & Bond, J. (2009). Social exclusion and social isolation (p168-200). In *The Social World of Older People: understanding loneliness and social isolation in later life*. Maidenhead: Open University Press

Vignoles, V. L. Schwartz, S. J. & Luyckx, K. (2011). Introduction: Toward an integrative view of identity. In Schwartz, S., Luyckx, K., Vignoles, V. (Eds.) *Handbook of Identity Theory and Research*, Springer, NY.

Wann, D. L., & Branscombe, N. R. (1990). Die-hard and fair-weather fans: Effects of identification on BIRGing and CORFing tendencies. *Journal of Sport and Social issues*, *14*(2), 103-117.

Ware, J. E., & Sherbourne, C. D. (1992). The MOS 36-item Short-Form Health Survey (SF-36), I: conceptual framework and item selection. *Medical Care*, 30 (6) 473-483.

Waterman, A. S. (2008). Reconsidering happiness: A eudaimonist's perspective. *The Journal of Positive Psychology*, *3*(4), 234-252.

Waterman, A. S., Schwartz, S. J., Zamboanga, R. L., Ravert, R. D., Williams, M. K. et al. (2010). The Questionnaire for Eudiamonic Well-being: Psychometric

properties, demographic comparisons, and evidence of validity. *The Journal of Positive Psychology,* 5, 1, 41-61. doi.org/10.1080/17349760903435208.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063-1070.

Watson, J. B. (1924). The Unverbalized in Human Behavior. *Psychological Review*, *31*, 4, 273.

Wegge, J., & Haslam, S. A. (2003). Group goal setting, social identity, and self-categorization: Engaging the collective self to enhance group performance and organizational outcomes. In S. A. Haslam, D. van Knippenberg, M. J. Platow, & N. Ellemers (Eds.). *Social identity at work: Developing theory for organisational practice* (pp. 43-60). N.Y.: Psychology Press.

Wei M, Russell DW, Zakalik RA. (2005). Adult Attachment, Social Self-Efficacy, Self-Disclosure, Loneliness, and Subsequent Depression for Freshman College Students: A Longitudinal Study. *Journal of Counseling Psychology, 52*: 602–614.

Weiss, Y., & Willis, R. J. (1985). Children as collective goods and divorce settlements. *Journal of Labor Economics*, *3*(3), 268-292.

Weissman, M. M. (1987). Advances in psychiatric epidemiology: rates and risks for major depression. *American journal of public health*, *77*(4), 445-451.

Weitzman, L. J. (1985). The divorce revolution: The unexpected social and economic consequences for women and children in America. NY: The Free Press.

Wenzel, M., Mummendey, A., & Waldzus, S. (2008). Superordinate identities and intergroup conflict: The ingroup projection model. *European review of social psychology*, *18*(1), 331-372.

Wenzel, M., Mummendey, A., Weber, U., & Waldzus, S. (2003). The ingroup as pars pro toto: Projection from the in-group onto the inclusive category as a precursor to social discrimination. *Personality and Social Psychology Bulletin*, *29*, 461-473.

Widmeyer, W. N., Carron, A. V., & Brawley, L. R. (1985). The measurement of cohesion in sport teams: The Group Environment Questionnaire. *Canadian journal of sport sciences - Journal canadien des sciences du sport, 14(1), 55.*

Williams, A. W., Ware, J. E., Jr., & Donald, C. A. (1981). A model of cental health, life events, and social supports applicable to general populations. *Journal of Health and Social Behavior, 22*, 324–336.

Williams, D. R., Spencer, M. S., & Jackson, J. S. (1999). Race, stress, and physical health: the role of group identity. In R. J. Contrada & R. D. Ashmore (Eds.), *Rutgers series on self and social identity, Vol. 2. Self, social identity, and physical health: Interdisciplinary explorations* (pp. 71-100). New York: Oxford University Press.

Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health: Socio-economic status, stress and discrimination. *Journal of health psychology*, *2*(3), 335-351.

Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health: Socio-economic status, stress and discrimination. *Journal of Health Psychology*, *2*(3), 335-351.

Wingenfeld, K., Schaffrath, C., Rullkoetter, N., Mensebach, C., Schlosser, N., Beblo, T., ... & Meyer, B. (2011). Associations of childhood trauma, trauma in adulthood and previous-year stress with psychopathology in patients with major depression and borderline personality disorder. *Child Abuse & Neglect*, *35*(8), 647-654.

Wolff, L. S., Subramanian, S. V., Acevedo-Garcia, D., Weber, D., & Kawachi, I. (2010). Compared to whom? Subjective social status, self-rated health, and

referent group sensitivity in a diverse U.S. sample. *Social Science & Medicine (1982), 70*(12), 2019–2028. http://doi.org/10.1016/j.socscimed.2010.02.033

World Health Organization. (1977). *Manual of the International Statistical Classification and Cause of Death. 9th revision, Vol. 1*. Geneva: WHO.

World Health Organization. (2007). *Global age-friendly cities: A guide*. World Health Organization.

Wrightsman, L. S. (1960). Effects of waiting with others on changes in level of felt anxiety. *The Journal of Abnormal and Social Psychology*, *61*(2), 216.

Yapko, M. (2009). *Depression is contagious: How the most common mood disorder is spreading around the world and how to stop it*. NY: Simon and Schuster.

Zajonc, R. B. (1965). *"Social Facilitation"*. *Science*.149 (3681): 269–274. *doi:10.1126/science.149.3681.269.*

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta psychiatrica scandinavica*, *67*(6), 361-370.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, *52*, 30-41.

Zubin, J., Stuart, R. & Condray, R. (1992). Vulnerability to relapse in schizophrenia. *British Journal of Psychiatry, 161*, 13-18.

Zuckerman, M. (1999). *Vulnerability to psychopathology: A biosocial model*. Washington, DC, US: American Psychological Association. http://dx.doi.org/10.1037/10316-000