# The Relationship Between Self-Esteem and Psychological Health

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Für meine Familie

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Für Michael Riketta, meinen ersten Betreuer, Koautor und Freund. Michael wurde viel zu früh von uns genommen. Er wird allen die ihn kannten als großartiger Mensch und wahrer Wissenschaftler in Erinnerung bleiben.

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I am so thankful to my collaborators that it felt wrong to write the empirical chapters of this thesis in the first-person perspective. Thus, the empirical chapters are written in the third-person perspective. The research reported in the first empirical chapter was conducted together with Philip Broemer, Geoff Haddock, and Ulrich von Hecker. The research reported in the second empirical chapter was conducted together with Michael Riketta, Greg Maio, and Geoff Haddock. Finally, the research reported in the third empirical chapter was conducted together with Michael Riketta, Philip Broemer, and Greg Maio.

# Thesis Summary

This thesis examines the relationship between self-esteem and psychological health. In Chapter 1, I define self-esteem and psychological health, illustrate the prominence of these two psychological constructs, and review the literature on the relation between self-esteem and psychological health. As we will see, self-esteem can be defined as one's overall evaluation as a person, and psychological health can be defined as the absence of depression, anxiety, and negative affect together with the presence of life satisfaction and positive affect. Further, we will see that self-esteem and psychological health are among the most frequently researched psychological constructs. Thus, the corpus of research on the relationship between self-esteem and psychological health is massive. Nonetheless, the nature and dynamics of this relationship are complex and far from being fully understood. The empirical research presented in this thesis helps to better understand this relationship.

To this end, I have conducted three empirical lines of research. The three lines of research approach the same overarching goal from three very different angles. In the first empirical chapter (Chapter 2), I report a line of research in which my collaborators and I studied the impact of one facet of psychological health – i.e., chronic mood – on self-esteem when recalling positive and negative past selves. In four studies, we found that chronically happy people assimilated towards a recalled positive self and contrasted away from a recalled negative self, which in both cases lead to a relative increase in self-esteem. Chronically sad people, on the other hand, assimilated towards a recalled negative self and contrasted away from a recalled positive self, which in both cases lead to a relative decrease in self-esteem. Thus, this research shows that

psychological health in the form of chronic mood can impact self-esteem via the medium of recalling past selves.

The research reported in the second empirical chapter (Chapter 3) was motivated by the conviction that a full understanding of the relationship between self-esteem and psychological health can be obtained only by placing this relationship in a larger context involving other psychological variables. Past research suggests that belongingness is the one psychological construct that is particularly relevant in this respect. Thus, Chapter 3 reports a line of research studying the relations between belongingness, self-esteem, and psychological health. In three studies, we developed and validated a novel two-dimensional measure of people's perceptions of the belongingness they experience from other people. The measure assesses the amount of belongingness experienced and the degree to which people perceive this belongingness as being unconditional or conditional on their achievements and contributions. We extended past social psychological research by demonstrating that the unconditionality of belongingness explains variance in psychological health independent of the amount of belongingness. More importantly, the data showed that self-esteem plays a central role in these relationships. Specifically, the amount of self-esteem (e.g., global self-esteem) mediated the relationship between the amount of belongingness and psychological health, whereas the conditionality of self-esteem (i.e., global contingent self-esteem) mediates the relationship between the unconditionality of belongingness and psychological health.

In the final empirical chapter (Chapter 4), we wanted to elucidate why past empirical research failed to find a relationship between implicit measures of self-esteem and self-reported psychological health when controlling for explicit measures of self-esteem. One reason for this puzzling but consistent null result may be that existent

implicit measures of self-esteem assess domain-specific self-esteem, but not global self-esteem. Thus, Chapter 4 reports a line of research studying the relation between psychological health and a novel implicit measure of *global* self-esteem. Six studies developed and validated this new implicit measure, finding that our newly developed measure predicts higher psychological health even when controlling for explicitly measured self-esteem.

Finally, Chapter 5 reviews the contribution of the research presented in this thesis to our understanding of the relationship between self-esteem and psychological health. Overall, the research emphasises the complexity of the multi-faceted processes that underlie this relationship. Directions for future research are discussed.

# Contents

# Chapter 1
# Introduction

## 1.1    Chapter Overview

The primary purpose of this thesis is to contribute to the understanding of the relationship between self-esteem and psychological health. There have been various sceptical reactions to this aim from friends and colleagues. Some wondered, "Isn't your contribution negligible given that you focus on one in a billion relationships that occur in psychology?" Others asked, "Isn't it a bit pathetic to devote three years of your life to examining a single correlation between two variables?" Some people have been bemused: "And it took you really three years to figure this relationship out?" I am hopeful that this chapter clarifies these issues.

The scope of the chapter is threefold. First, I examine definitions of self-esteem and psychological health and show that these two constructs are among the most frequently researched constructs in psychology. Thus, we are not dealing with merely one randomly picked relationship out of a billion possible relationships.

Second, I will review the literature on the relationship between self-esteem and psychological health. This review will show that this relationship is among the most robust and most frequently demonstrated relationships in the social sciences. At the same time, I will show that the nature and dynamics of this relationship are multifaceted, complicated, and far from being fully understood. Thus, it is extremely worthwhile to build a dissertation on the multi-facetted questions around the relationship between self-esteem and psychological health. In fact, one could spend an entire lifetime examining the same issue, but even a life-long research program would not be able to solve the complete puzzle around this relationship.

The third aim of this chapter is to give a brief overview of the research that my collaborators and I have conducted in order to better understand the relationship between self-esteem and psychological health. This research demonstrates that (1) psychological health in the form of chronic mood can affect self-esteem when recalling positive and negative past selves (Chapter 2), (2) quantitative and qualitative differences in belongingness play a major role in the understanding of the relationship between self-esteem and psychological health (Chapter 3), and (3) implicit measures of self-esteem can predict psychological health over and above explicit measures of self-esteem (Chapter 4).

1.2 Self-Esteem and Psychological Health

This section will define self-esteem and illustrate its psychological relevance, and then define psychological health and illustrate its psychological relevance. I will then briefly review the literature on the causal role of self-esteem in the relationship between self-esteem and psychological health. This review reveals that high self-esteem is neither the cause of virtually every positive intrapersonal and interpersonal outcome nor is low self-esteem the cause of virtually every negative intrapersonal and interpersonal outcome, as has been assumed at large (see also Baumeister, Campbell, Krueger, & Vohs, 2003; Crocker & Park, 2004; Marsh & Craven, 2006; Scheff & Fearon, 2004). In fact, this review shows that one of the few strong and reliable outcomes of higher self-esteem is better psychological health, which illustrates the importance of understanding the processes underlying the relationship between self-esteem and psychological health. On the other hand, the literature review also reveals a lack of research on the causal effect of psychological health on self-esteem. Together then, the literature review points toward several exciting and timely topics of research

regarding the relationship between self-esteem and psychological health. Three of these

topics will be addressed in this thesis's three empirical chapters.

### 1.2.1 Self-Esteem

Global, personal self-esteem (hereafter simply 'self-esteem') is defined as one's

overall sense of worthiness as a person (e.g., Baumeister, 1998; Rosenberg, 1979;

Sedikides & Gregg, 2003). Self-esteem has been frequently labelled as one of the most

important psychological constructs (Baumeister, 1998; Sedikides & Gregg, 2003;

Swann, Chang-Schneider, & McClarty, 2007). In fact, self-esteem is the most

frequently researched trait in psychology (Judge, Erez, Bono, & Thoresen, 2002), and it

has been argued that high self-esteem is one of the most fundamental psychological

needs (Fiske, 2002; Sedikides & Gregg, 2003; Sedikides & Strube, 1997). Some

empirical evidence even indicates that high self-esteem is the single most important

psychological need (Sheldon, Elliot, Kim, & Kasser, 2001).

In addition, self-esteem lies at the heart of many of the most prominent theories

in social psychology. For example, Social Identity Theory (Tajfel & Turner; 1979; see

also Ellemers, Spears, & Doosje, 2002), Terror Management Theory (Greenberg,

Pyszczynski, & Solomon, 1986; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel,

2004), Sociometer Theory (Leary, 2006; Leary & Baumeister, 2000; Leary & Cox,

2007; Leary, Tambor, Terdal, & Downs, 1995), the SCENT model (Sedikides & Gregg,

2003; Sedikides & Strube, 1997), Self-Affirmation Theory (Sherman & Cohen, 2006;

Steele, 1988), the Self-Evaluation Maintenance Model (Tesser, 1988, 2000), and

Temporal Self-Appraisal Theory (Ross & Wilson, 2000; Wilson & Ross, 2001) are all

based on the assumption that people strive for self-esteem.

### 1.2.2 Psychological Health

There is no universally accepted definition of psychological health (World Health Report, 2001). There is disagreement among researchers about which psychological variables qualify as indicators of psychological health (cf. Ryff & Singer, 1998). However, the field broadly agrees upon several core elements of psychological health: the absence of depression and anxiety, low chronically negative affect, and the presence of life satisfaction and chronically positive affect (e.g., Beck, 1972; Diener, 1984; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004; Spielberger, 1966; Watson, Clark, & Tellegen, 1988). Some researchers also regard psychological health as subsuming various additional variables, including the absence of loneliness (Sedikides et al., 2004) the absence of neuroticism (Neiss, Stevenson, Sedikides, Kumashiro, Finkel, & Rusbult, 2005; Watson, Suls, & Haigh, 2002), and secure attachment (Simpson, 1990). In this thesis, I operationalize psychological health via different indicators of psychological health taken from the list of core indicators above.

The significance of psychological health in psychology has been labelled "unparalleled" (Ryan & Deci, 2001). Some have even argued that the justification of psychology as a discipline is that it promises to contribute to better psychological health (Kwan, Bond, & Singelis, 1997). Finding ways to improve psychological health is an urgent endeavour given that depression, a major component of psychological health, is the most frequent illness in Western societies, among both men and women. In fact, it has been estimated that the productivity loss due to depression in the US economy costs employers about $44 billion a year (Stewart, Ricci, Chee, Hahn, & Morganstein, 2003) and that the total cost of depression in Europe is about €118 billion per year (Sobocki, Jönsson, Angst, & Rehnberg, 2006). In fact, the motivation to be psychologically healthy is considered so fundamental that it is seldom regarded as a mere motive or

need, but rather as an underlying 'principle' (cf. pleasure principle; Freud, 1920; see

also Kahneman, Diener, & Schwarz, 1999; Sedikides & Gregg, 2008).

### 1.2.3   The Relation between Self-Esteem and Psychological Health

Abundant research has explored potential effects of self-esteem and

psychological health on numerous aspects of psychological functioning.  A lot of this

research is relevant to understanding the relation between self-esteem and

psychological health.  In this sub-section, I will consider the potential effects of each

variable on the other.

*Self-Esteem as a Causal Variable*

Given the aforementioned prominence of self-esteem in psychological theory

and research, it is not surprising that researchers, practitioners, and laypersons alike

have seen self-esteem as "the panacea of modern life" (Brown & Dutton, 1995). Hence,

it is intuitively appealing that self-esteem should cause a plethora of positive outcomes.

As such, high self-esteem has been thought of as an "antidote to poverty, drug use, and

under-achievement and lauded as the royal road to financial success, health, and

personal fulfilment" (Brown & Dutton, 1995, p. 712). This glorification of self-esteem

led to the so-called self-esteem movement, with a large number of offspring such as the

California Task Force to Promote Self-Esteem and Personal and Social Responsibility

(1989). The conviction that, with the construct of self-esteem, psychology has

discovered a "modern-day Holy Grail" (Swann et al., 2007) was so strong that leading

figures of the self-esteem movement wholeheartedly believed that "self-esteem has

profound consequences for *every* aspect of our existence" (Branden, 1994, p. 5 [italics

added]) and that "virtually *every* social problem can be traced to people's lack of self-

love" (Davis, 1988, p. 10 [italics added]).

The realization that self-esteem is neither a modern-day Holy Grail nor the panacea of modern life came only recently via empirical data, and this discovery was a shock to the many who were in love with self-love. Specifically, in a landmark paper, Baumeister and colleagues (2003) comprehensively reviewed the literature on the effects of self-esteem and came to a rather devastating conclusion: "most of the effects [of self-esteem] are weak to modest. Self-esteem is thus *not* a major predictor or cause of almost anything" and further, "we have *not* found evidence that boosting self-esteem (by therapeutic interventions or school programs) causes benefits. Our findings do *not* support continued widespread efforts to boost self-esteem in the hope that it will by itself foster improved outcomes." (Baumeister et al., 2003, ps. 37 and 1 [italics added]; for similar conclusions see Crocker & Park, 2004; Marsh & Craven, 2006; Scheff & Fearon, 2004).

As a reaction to Baumeister and colleagues' conclusions, researchers grew busy trying to restore the self-esteem's crippled image (Swann et al., 2007, Swann, Chang-Schneider, & McClarty, 2008). That is, many attempts have been undertaken to show that self-esteem does exert positive effects on major intrapersonal and interpersonal constructs. As a result, three longitudinal studies found that self-esteem predicts delinquency, antisocial behaviour, and aggressive behaviour, respectively (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). In addition, an 11-year longitudinal study showed that self-esteem significantly predicts tobacco dependence, criminal convictions, school dropout, and money and work problems (Trzesniewski, Donnellan, Moffitt, Robins, Poulton, & Caspi, 2006). Further, other longitudinal studies showed that self-esteem improved standardized test scores, reduced school disciplinary reports, and reduced use of drugs and alcohol (DuBois & Flay, 2004; Haney & Durlak, 1998). Finally, the OECD (Organisation for Economic Co-operation and Development)

concluded on the basis of their longitudinal work that self-concept and related

constructs are "closely tied to students' economic success and long-term health and

wellbeing" (OECD, 2003, p. 9). In all these studies, the effects of self-esteem held even

after controlling for several potential confounding variables. Thus, these more recent

findings shed a more positive light on the effects of self-esteem than the findings that

were available at the time of Baumeister and colleagues' review. Nonetheless, the

effects of self-esteem are considerably more moderate than initially assumed by

researchers and practitioners in the self-esteem movement.

There is one notable exception to this rule: self-esteem is strongly related to

psychological health. This conclusion was supported by Baumeister and colleagues'

(2003) review:

> "People with high self-esteem are significantly, substantially happier than other
>
> people. They are also less likely to be depressed, either in general or specifically
>
> in response to stressful, traumatic events. Many studies have confirmed this
>
> link." (p. 28)

In support of this claim, self-esteem is typically related more strongly to more chronic

positive affect (Aspinwall & Taylor, 1992; Brown & Dutton, 1995; Halamandaris &

Power, 1997; Hamid & Cheng, 1996; Lucas, Diener, & Suh, 1996; Tarlow & Haaga,

1996), higher life satisfaction (Diener & Diener, 1995; Lucas, Diener, & Suh, 1996;

Sedikides et al., 2004; Diener, 1984; Diener, Suh, Lucas, & Smith, 1999), less chronic

negative affect, (Aspinwall & Taylor, 1992; Brown & Dutton, 1995; Halamandaris &

Power, 1997; Hamid & Cheng, 1996; Lucas et al.,, 1996; Tarlow & Haaga, 1996),

lower levels of depression (Lewinsohn, Hoberman, & Rosenbaum, 1988; Butler,

Hokanson, & Flynn, 1994; Hankin, Lakdawalla, Carter, Abela, & Adams, 2007; Joiner,

1995; Joiner, Katz, & Lew, 1999; Kernis, Grannemann, & Mathis, 1991; Kernis et al.,

1998; Roberts & Gamble, 2001; Roberts & Monroe, 1992; Whisman & Kwon, 1993),

and less anxiety (Greenberg, Solomon, Pyszczynski, Rosenblatt, Burlin, Lyon, Pinel, &

Simon, 1992; Joiner, 1995; Ralph & Mineka, 1998; Watson et al., 2002).

In addition, numerous longitudinal studies have shown that self-esteem predicts

psychological health. For example, self-esteem has exhibited longitudinal effects on

depression (e.g., Abela, Webb, Wagner, Ho, & Adams, 2006; Fernandez, Mutran, &

Reitzes, 1998; Lewinsohn et al., 1988 [reanalyzing data reported in Lewinsohn,

Steinmetz, Larson, & Franklin, 1981]; Trzesniewski et al., 2006; Orth, Robins, &

Roberts, 2008), anxiety (DuBois, Burk-Braxton, Swenson, Tevendale, Lockerd, Moran,

2002; Neiss et al., 2005), and sadness (Ciarrochi, Heaven, & Davies, 2007).

*Psychological Health as a Causal Variable*

Given the centrality of psychological health for people's lives, it is not

surprising that psychological health is related to a plethora of other variables, such as

wealth (Diener & Biswas-Diener, 2002; Diener & Oishi, 20020), family satisfaction

(Diener & Diener, 1995), extraversion (Mayers & Diener, 1995), religiosity (Smith,

McCullough, & Poll, 2003), low educational qualification and a history of

unemployment (Clark, Georgellis, Lucas, & Diener, 2004), social support (Stroebe &

Stroebe, 1997), loneliness (Baumeister & Leary, 1995), fear of death (Wagner &

Lorion, 2006), optimism (Segerstrom, Taylor, Kemeny, & Fahey, 1998), and somatic

health problems (Stordal, Bjelland, Dahl, & Mykletun, 2003). However, the

consistently strongest correlate of psychological health is self-esteem (e.g., Diener &

Diener, 1995; Joiner et al., 1999; Judge et al., 2002; Watson et al., 2002; Sheldon et al.,

2001).

Nonetheless, the causal role of psychological health in its relationship to self-

esteem is vastly under-explored. Specifically, there is a large imbalance between

research and theory on the effects of self-esteem on psychological health and the effects

of psychological health on self-esteem. This imbalance reflects the underlying

assumption in social psychology that self-esteem plays a stronger causal role in the

relationship between self-esteem and psychological health than does psychological

health. Despite a total of over 10,000 studies on the relationship between self-esteem

and psychological health, Baumeister et al.'s (2003) review of the effects of self-esteem

indicated that not even a single study tested the causal effect of psychological health on

self-esteem. At the same time, Baumeister et al. (2003) noted that it is possible that

"happiness, in the sense of a temperament or disposition to feel good, causes high self-

esteem" (p. 28).

Since Baumeister et al.'s review, the situation has not changed much. A couple

of relevant longitudinal studies have emerged, but the findings are somewhat

contradictory. Specifically, Shahar and Davidson (2003) found a significant effect of

depression on self-esteem in a longitudinal design over four months. However, Ormel,

Oldehinkel, and Vollebergh (2004) and Orth et al. (2008) failed to replicate this finding

using longer time-intervals and larger sample-sizes in their longitudinal studies.

Further, the processes that underlie possible effects of psychological health on self-

esteem are not clear. Thus, research elucidating possible effects of psychological health

on self-esteem is badly needed.

The first empirical chapter (Chapter 2) in this thesis demonstrates causal effects

of psychological health (here: chronic mood) on self-esteem in a specific domain: when

recalling positive and negative personal traits and episodes. This line of research

particularly emphasizes the *process* that underlies an effect of chronic mood on self-

esteem when it comes to recalling valenced selves.

*Self-Esteem and Psychological Health as One Variable*

A third possibility that may explain the correlation between self-esteem and psychological health is that the two constructs are actually the same variable or at least are indicators of the same higher order concept. In fact, some empirical research supports this latter position. Specifically, three empirical papers have provided evidence that self-esteem and various markers of psychological health share the same underlying core. First, Judge et al. (2002) found that self-esteem, neuroticism, locus of control, and generalized self-efficacy are all highly correlated, load on a single higher order factor, display relatively poor discriminant validity, and account for little incremental variance in predicting external criteria relative to the higher order construct. Second, Watson et al. (2002) found correlations between self-esteem and the depression facet of neuroticism being as high as $r = -.86$. These authors suggested conceptualizing high self-esteem as representing the absence of depression. Finally, Neiss, Stevenson, Legrand, Iacono, and Sedikides (in press) tested the structure and magnitude of genetic and environmental influences on the overlap among self-esteem, negative emotionality, and major depression symptoms. Neiss et al. found that self-esteem, depression, and neuroticism represent aspects of a common temperamental core.

Given these findings, one may question the worth of treating self-esteem and psychological health as two separate constructs. And in fact, if one would base her judgment concerning this issue solely on the three aforementioned sets of data it may be sensible to conclude that treating self-esteem and psychological health as two separate constructs is unwarranted. However, on theoretical grounds, there is good reason to distinguish self-esteem and psychological health conceptually (see definitions above; see also Diener & Diener, 1995). In line with these theoretical considerations, there is a much larger corpus of empirical research than the aforementioned one that

fails to find exceedingly high correlations between self-esteem and psychological

health—including neuroticism, depression, and locus of control (e.g., Diener & Diener,

1995; Sedikides et al., 2004; Segerstrom et al., 1998). Moreover, longitudinal research

on the relationship between self-esteem and depression also supports the position that

the two constructs are not redundant (e.g., Orth et al., 2008). Overall then, it is

important to point toward the possibility of a common core underlying self-esteem and

psychological health and future research is needed to better explore this possibility.

However, as it currently stands, there is no reason to dismiss research that treats self-

esteem and psychological health as two related but distinct constructs. In fact, many of

the results of the empirical chapters presented in this thesis provide additional support

that self-esteem and psychological health are functionally not equivalent (see Chapter

2, 3, and 4).


### 1.2.4 Why does High Self-Esteem lead to Better Psychological Health?

The more recent research revealing positive effects of self-esteem on

psychological health has not investigated the mechanism underlying these effects.

Despite Baumeister and colleagues' (2003) suggestion that researchers should

thoroughly examine why high self-esteem leads to better psychological health, research

examining this question remains sparse.  As a result, the processes through which self-

esteem exerts the positive effects on psychological health are not fully understood.

Nonetheless, recent theories and evidence have provided promising beginnings.

A few theories provide compelling descriptions of the process through which high self-

esteem leads to better psychological health (e.g., Leary & Baumeister, 2000;

Pyszczynski et al., 2004). Perhaps the broadest and most actively discussed theory in

this respect is Sociometer Theory (Leary, 2006; Leary & Baumeister, 2000; Leary &

Cox, 2007; Leary et al., 1995). According to Sociometer Theory, self-esteem functions

as a meter of a person's belongingness status. That is, Sociometer Theory assumes that

high self-esteem is the affective manifestation of a sufficient degree of social bonds. As

such, the effects that self-esteem asserts on psychological health are spuriously caused

by the benefits of an optimal level of belongingness (i.e., sufficient social bonds,

availability of social support, lack of loneliness). In other words, self-esteem is an

epiphenomenon that has no causal effects itself, but reflects a person's belongingness

status (Leary, 2006; Leary & Baumeister, 2000; Leary & Cox, 2007; Leary et al.,

1995). Leary and colleagues argued for the evolutionary adaptiveness of self-esteem as

a meter of belongingness, by pointing towards the survival value of belongingness in

the prehistoric history of humankind (for a review, see Baumeister & Leary, 1995).

Sufficient social bonds were vital for the survival of our species in ancient history.

Thus, there would be high evolutionary value in having a sensitive system that monitors

one's belongingness status and motivates people to seek more belongingness when

one's belongingness status is critically low (Leary & Baumeister, 2000).

Several empirical studies support the sociometer hypothesis (Antony, Holmes,

& Wood, 2007; Buckley, Winkel, & Leary, 2004; Leary, Cottrell, & Phillips, 2001;

Leary, Gallagher, Fors, Buttermore, Baldwin, Lane, & Mills, 2003; Leary, Koch, &

Hechenbleikner, 2001; for a review see Leary & Cox, 2007). In addition, ample

research has shown that sufficient social bonds, availability of social support, and lack

of loneliness are all related to better psychological health (e.g., Argyle 1987, DeNeve,

1999; Lee & Ishii-Kuntz 1987; Myers 1999) and that this relationship is mediated by

self-esteem (e.g., DuBois et al., 2002; Grills & Ollendick, 2002; Simoni, Huang,

Goodry, Montoya, 2005; Symister & Friend, 2003; Wilkinson, 2004). In sum, the

evidence indicates that self-esteem predicts psychological health, and this may be due to self-esteem being an indicator of a person's belongingness status.

Although this conclusion may represent a significant step forward, it may also be a bit overly optimistic. The reason is that self-esteem varies not only in its amount (i.e., quantity), but also in its nature (i.e., quality). Recent studies have shown that, irrespective of the amount of self-esteem, people differ in the degree to which self-esteem is contingent on their achievements and contributions. For some people, self-esteem is relatively non-contingent on their achievements and contributions (i.e., contingent self-esteem; Kernis, 2003), and this high, non-contingent self-esteem has been called secure (Deci & Ryan, 1995) or optimal (Kernis, 2003) self-esteem.

This distinction between the amount of self-esteem and its perceived contingency has important consequences because of evidence that people with more contingency in their self-esteem show greater fluctuations in self-esteem over time (Kernis, 2008). More crucially here, contingent self-esteem is related to psychological health over and above amount of self-esteem (Kernis, 2008; Kernis, Lakey, & Heppner, 2005; as cited in Kernis & Goldman, 2006). Thus, the effect of self-esteem on psychological health cannot be fully understood unless research is able to link qualitative differences in self-esteem (e.g., stability and contingency of self-esteem) to the belongingness framework of self-esteem.

The second empirical chapter (Chapter 3) in this thesis demonstrates that belongingness research can be reconciled with the latest research showing that self-esteem does not only differ in its amount, but also in its contingency. Specifically, we introduce a novel dimension of belongingness: the degree to which belongingness is experienced as conditional on one's achievements and contributions versus the degree to which belongingness is experienced as unconditional. Whereas amount of self-

esteem is strongly linked to amount of belongingness, contingent self-esteem is strongly linked to unconditionality of belongingness. This pattern of results is central for the relationship between self-esteem and psychological health, because amount and unconditionality of belongingness showed independent effects on psychological health, with amount of self-esteem mediating the effect of amount of self-esteem on psychological health and contingent self-esteem mediating the effect of unconditionality of belongingness on psychological health.

### 1.2.5 Is the Relationship between Self-Esteem and Psychological Health Due to Common Method Variance and Social Desirability?

The very consistent evidence of a relationship between self-esteem and psychological health exclusively capitalizes on explicit (i.e., self-report) measures of self-esteem. When assessing self-esteem via implicit (i.e., indirect) measures, the picture concerning this relationship looks quite different. Previous studies found that implicit measures of self-esteem relate only inconsistently to psychological health (e.g., Bosson, Swann, & Pennebaker, 2000; Schimmack & Diener, 2003; Shimizu & Pelham, 2004). Furthermore, in the infrequent cases where a significant relationship between implicitly measured self-esteem and psychological health did occur, this relationship was rendered non-existent when controlling for explicitly measured self-esteem (e.g., Bosson et al., 2000).

This finding is puzzling and muddles the otherwise clear evidence that self-esteem relates to psychological health (Bosson et al., 2000; Schimmack & Diener, 2003). Two separate lines of thought about self-esteem are perturbed by this null relation. First, advocates of the *dual-attitude view of self-esteem* argue that people possess two distinct types of self-esteem, namely, implicit and explicit self-esteem

(e.g., Koole, Dijsterhuis, & van Knippenberg, 2001; Spalding & Hardin, 1999; Wilson,

Lindsey, & Schooler, 2000). According to dual-attitude theorists, implicit self-esteem is

assessed via implicit measures, whereas explicit self-esteem is assessed via explicit

measures. Dual-attitude theorists expect a positive relationship between implicit self-

esteem and self-reported psychological health because one's spontaneous, non-

conscious self-evaluations (i.e., implicit self-esteem) should manifest themselves in

behavioural outcomes (e.g., Fazio, 1990; Fazio & Towles-Schwen, 1999), which should

have direct effects on one's affective experiences (Bosson et al., 2000). Furthermore,

Baumeister et al. (2003, p. 25) made the point that "there is not even any meaningful or

realistic way to assert that someone can be mistaken about his or her happiness." By

definition, happiness is a conscious experience and, thus, the most valid way to assess it

is via self-reports (see Walker & Schimmack, 2008). As such, if implicit self-esteem

was unrelated to self-reported happiness, the psychological relevance and function of

implicit self-esteem would need to be questioned seriously (Sheldon et al., 2001). In

sum, advocates of the dual-attitude view of self-esteem expect at least a small but

reliable relationship between implicit self-esteem and self-reported psychological

health, and the absence of this relationship is puzzling.

The absence of the relationship between implicitly measured self-esteem and

psychological health is even more troubling for advocates of the *single-attitude view of*

*self-esteem* (Dijksterhuis, Albers, & Bongers, 2008; Farnham, Greenwald, & Banaji,

1999; Olson, Fazio, & Hermann, 2007; Tafarodi & Ho, 2006). Single-attitude theorists

assume that implicit and explicit measures of self-esteem assess the same construct,

namely, self-esteem, while also assuming that the two different measurement methods

(i.e., implicit vs. explicit) are divergently associated with different types of

measurement error. According to single-attitude theorists, the divergent association

with measurement error explains the low correlation between implicit and explicit measures of self-esteem. Single-attitude theorists of self-esteem dismiss the viability of assessing self-esteem via self-report measures, because these measures are biased by social desirability (for a review see Farnham et al., 1999) and require the respondent to possess conscious knowledge about his or her true self-esteem (Greenwald & Farnham, 2000). In Farnham et al.'s (1999) words, "self-report measures of self-esteem have questionable discriminant, convergent, and predictive validity. ... In order to measure genuine self-esteem, self-presentation must be avoided altogether through indirect measures of self-esteem." (p. 235). Single-attitude theorists therefore believe that explicit measures of self-esteem do not assess "genuine self-esteem" (Dijksterhuis et al., 2008).

This conclusion resonates with earlier assumptions that explicit measures of self-esteem tap the motive to outwardly present a positive attitude toward the self (Baumeister, Tice, & Hutton, 1989; Tice, 1991) and that people who claim to view themselves positively may be boasting to compensate for insecurity and low self-esteem (Horney, 1937). Given the argument that self-report measures of affect and happiness are valid due to the conscious nature of these constructs (Baumeister et al., 2003), the logical conclusion of single-attitude theorists of self-esteem is to question that genuine self-esteem really relates to psychological health, because implicit measures of self-esteem failed to find strong and reliable relationships with measures of psychological health in the past (Bosson et al., 2000; Schimmack & Diener, 2003, Shimuzu & Pelham, 2004).

Irrespective of whether the single-attitude view or the dual-attitude view matches reality better, both render it interesting to explain why past research failed to find a reliable relationship between implicitly measured self-esteem and psychological

health. The third empirical chapter (Chapter 4) in this thesis demonstrates that the

failure to find a reliable relationship between implicitly measured self-esteem and

psychological health occurred because existing implicit measures of self-esteem assess

only domain-specific rather than global self-esteem. My collaborators and I developed

an implicit measure of global self-esteem and showed that this measure reliably related

to psychological health. Together then, Baumeister et al.'s (2003) conclusion that there

is a strong relationship between self-esteem and psychological health is consistent with

longstanding empirical findings involving explicit measures of self-esteem as well as

our findings using the new implicit measure of self-esteem.


## 1.3   Overview of the Current Research

Together, the previous sections of this chapter presented evidence that the

popularity of self-esteem and psychological health in psychology as well as for

laypersons is justified and not at all surprising. At the same time, the relationship

between these two variables is one of the most frequently demonstrated and most robust

relationships between two psychological variables. Nonetheless, more research is

needed to assess how these constructs are related, and this thesis attempts to address

this issue in three different ways.

The first empirical chapter (Chapter 2) provides evidence in line with the

hypothesis that psychological health (in the form of chronic mood) has an effect on

self-esteem in the context of recalling positive and negative past selves. This line of

research focuses on the process that underlies the effect of chronic mood on self-esteem

when recalling valenced selves. In particular, my collaborators and I have devised a

Mood Congruence Model (MCM) of Temporal Comparison (see also Gebauer,

Broemer, Haddock, & von Hecker, 2008a). The MCM assumes that chronically happy

people assimilate towards recalled positive selves and contrast away from recalled negative selves. On the contrary, the MCM assumes that chronically sad people assimilate towards recalled negative selves and contrast away from recalled positive selves.

The provocative implication of the hypothesized pattern of assimilation and contrast is that recalling either a positive or a negative past self increases self-esteem for chronically happy people, but decreases self-esteem for chronically sad people. In four studies, my collaborators and I have provided empirical data that is in line with the MCM. These data focus on the reason why the expected patterns of assimilation and contrast occur. In brief, the data is in line with the hypothesis that mood congruence between the recalled self and the current self (i.e., positive recalled self for chronically happy people and negative recalled self for chronically sad people) causes feelings of temporal recency, which, in turn, foster assimilation effects of the recalled self on current self-esteem (cf. Schwarz & Bless, 1992, 2007; Schwarz & Strack, 1999). At the same time, our data is in line with the MCM's hypothesis that mood incongruence between the recalled self and the current self (i.e., negative recalled self for chronically happy people and positive recalled self for chronically sad people) causes feelings of temporal recency, which, in turn, foster contrast effects of the recalled self on current self-esteem (cf. Schwarz & Bless, 1992, 2007; Schwarz & Strack, 1999). As such, recalling valenced selves is one domain of life that contributes to the strong relationship between self-esteem and psychological health, while speaking for a causal role of psychological health in this relationship.

The second empirical chapter (Chapter 3) is an attempt to integrate contingent self-esteem into the belongingness framework of self-esteem. This endeavour may line out a way for Sociometer Theory (Leary, 2006; Leary & Baumeister, 2000; Leary &

Cox, 2007; Leary et al., 1995) to understand not only the effect of amount of self-esteem on psychological health, but also the effect of contingent self-esteem on psychological health (Deci & Ryan, 1995; Kernis, 2000, 2003; Kernis & Goldman, 2003, 2006; Kernis & Paradise, 2002). To this end, my collaborators and I have conducted three empirical studies in which we have developed a self-report scale of belongingness. The belongingness scale possesses two independent dimensions (subscales): amount of belongingness and unconditionality of belongingness. Both subscales proved to be reliable and valid. Further, both subscales predicted psychological health independently from each other.

More relevant for this thesis, the amount of self-esteem mediated the relationship between the amount of belongingness and psychological health, whereas contingent self-esteem mediated the relationship between unconditionality of belongingness and psychological health. As such, this line of research promises to integrate contingent self-esteem into the sociometer perspective on self-esteem. This endeavour may help to update Sociometer Theory in a manner that enables it to explain the effect of amount of self-esteem on psychological health *and* the effect of contingent self-esteem on psychological health.

Finally, in order to confidently maintain the position that self-esteem relates to psychological health, it is timely to explain why past research failed to show that implicit measures of self-esteem do not consistently relate to psychological health (as discussed above). The third empirical chapter (Chapter 4) provides an explanation for the null-result concerning the relationship between implicit measures of self-esteem and psychological health. Specifically, past research has revealed that implicit measures of self-esteem assess domain-specific rather than global self-esteem (Banaji, 1999; Bosson et al., 2000; Campbell, Bosson, Goheen, Lakey, & Kernis, 2007; Sakellaropoulo &

Baldwin, 2007; Wentura, Kulfanek, & Greve; 2005). My collaborators and I (see also

Gebauer, Riketta, Broemer, & Maio, 2008b) have argued that the domain-specificity of

existent implicit measures of self-esteem may explain why these measures are unrelated

to psychological health. It follows that an implicit measure of global self-esteem needs

to be developed, validated, and tested concerning its propensity to predict psychological

health.

Chapter 4 contains six studies that perform this test. As expected, these studies

show a reasonably high relationship between implicitly measured self-esteem and

psychological health. Furthermore, this relationship even holds when controlling for

explicitly measured self-esteem. In all, this research demonstrates that there is no need

to dismiss the validity and reliability of the relationship between self-esteem and

psychological health on grounds of implicit measures of self-esteem: a suitable implicit

measure can yield this relationship.

Together, the research presented in this thesis has a single goal: Elucidating the

relationship between self-esteem and psychological health. As argued above my

collaborators and I hold the conviction that one comprehensive way to examining the

relationship between self-esteem and psychological health is to approach this task from

very different angles at the same time. This endeavour resulted in three freestanding

papers, including two that have been published (Gebauer et al., 2008a, 2008b). The

diversity of the three lines of research makes it necessary to provide an extended

introduction to each of these lines of research at the beginning of each empirical

chapter. In the General Discussion chapter (Chapter 5), I will present and integrate the

divergent lessons learned from the three empirical chapters. I believe that this

integration contributes towards the goal to achieve a parsimonious and integrative view

of the relationship between self-esteem and psychological health.

# Chapter 2

# The Mood Congruence Model of Temporal Comparison

In collaboration with:

Philip Broemer (University of Vienna)

Geoffrey Haddock (Cardiff University)

Ulrich von Hecker (Cardiff University)

## 2.1    Chapter Overview

The research described in this chapter demonstrates that chronically happy

people show a relative increase in self-esteem by recalling either a positive *or* a

negative self. Chronically sad people, however, show a relative decrease in self-esteem

by recalling either a positive *or* a negative self. These effects are due to divergent

perceptions of mood congruence between the recalled self and the current self.

Specifically, happy people perceive high mood congruence between a recalled positive

self and the current self, but low mood congruence between a recalled negative self and

the current self. In contrast, sad people perceive high mood congruence between a

recalled negative self and the current self, but low mood congruence between a recalled

positive self and the current self. Independent of chronic mood, mood congruence leads

to perceptions of temporal recency, whereas mood incongruence leads to perceptions of

temporal distance. In line with the inclusion-exclusion model of social judgment,

perceived temporal recency elicits assimilation effects on self-esteem, whereas

perceived temporal distance elicits contrast effects on self-esteem. Together then, this

research is in line with the hypothesis that psychological health – in the form of chronic

mood – exerts effects on self-esteem via the medium of recalling valenced selves. As such, this research is among the first to provide evidence in line with the assumption that psychological health can have an impact on self-esteem, while putting a particularly strong focus on the processes that underlie this effect.

## 2.2     Introduction

Lay theories hold that thinking about personal glories increases self-esteem and subjective well-being, whereas thinking about personal failures decreases self-esteem and subjective well-being. Several psychological research-findings are congruent with this view. For example, Wildschut, Sedikides, Arndt, and Routledge (2006) showed that nostalgia (i.e., the recall of predominantly positively valenced episodes from one's personal past) is a means for self-esteem boost (see also Routledge, Arndt, Sedikides, & Wildschut, 2008; Sedikides et al., 2004). In the clinical realm, reminiscence therapy (Haight, 1988) seeks to increase subjective well-being by asking elderly clients to recall happy times from their past. Furthermore, recalling extremely positive episodes from one's personal past is frequently used to induce happy mood (e.g., see Martin, 1990; Sedikides, 1992). These findings all support the implicit notion that the current self is inevitably *assimilated* toward the recalled self. That is, remembering positive information from one's personal past is assumed to be included in one's current self-concept, resulting in higher self-esteem and/or subjective well-being. Put simply, thinking about our glorious past is assumed to make us feel like heroes in the present.

However, my collaborators and I believe that certain personality characteristics may prevent some people from assimilating towards recalled positive selves. In fact, we believe that some personality characteristics even render it likely that certain people *contrast* their current self away from recalled positive selves. In this chapter, I report

four experiments providing evidence that for some people, recalling positive

information operates as a standard of comparison against which the current self is

judged (cf. Blanton, 2001; Schwarz & Bless, 1992, 2007). Relative to this positive

comparison standard, the current self should appear negative, lowering self-esteem

and/or subjective well-being. In other words, thinking about one's glorious past makes

some people feel like losers in the present.

Who are the people who feel like heroes and who are the people who feel like

losers after thinking about glorious past selves? The overarching hypothesis in this

research is that recalling a positive past self leads to a relative increase in self-esteem

for *chronically happy people* but to a relative decrease in self-esteem for *chronically*

*sad people*. Thus, we hypothesize that, after recalling glorious past selves, chronically

happy people feel like heroes, whereas chronically sad people feel like losers. Together

then, this research demonstrates that psychological health, in the form of chronic mood,

has an impact on people's self-esteem, within the context of recalling valenced selves.

The rationale for this hypothesis is outlined below and illustrated in Figure 2.1, in what

my collaborators and I refer to as the Mood Congruence Model (MCM) of Temporal

Comparison.

*Figure 1.* The Mood Congruence Model (MCM) of Temporal Comparison.
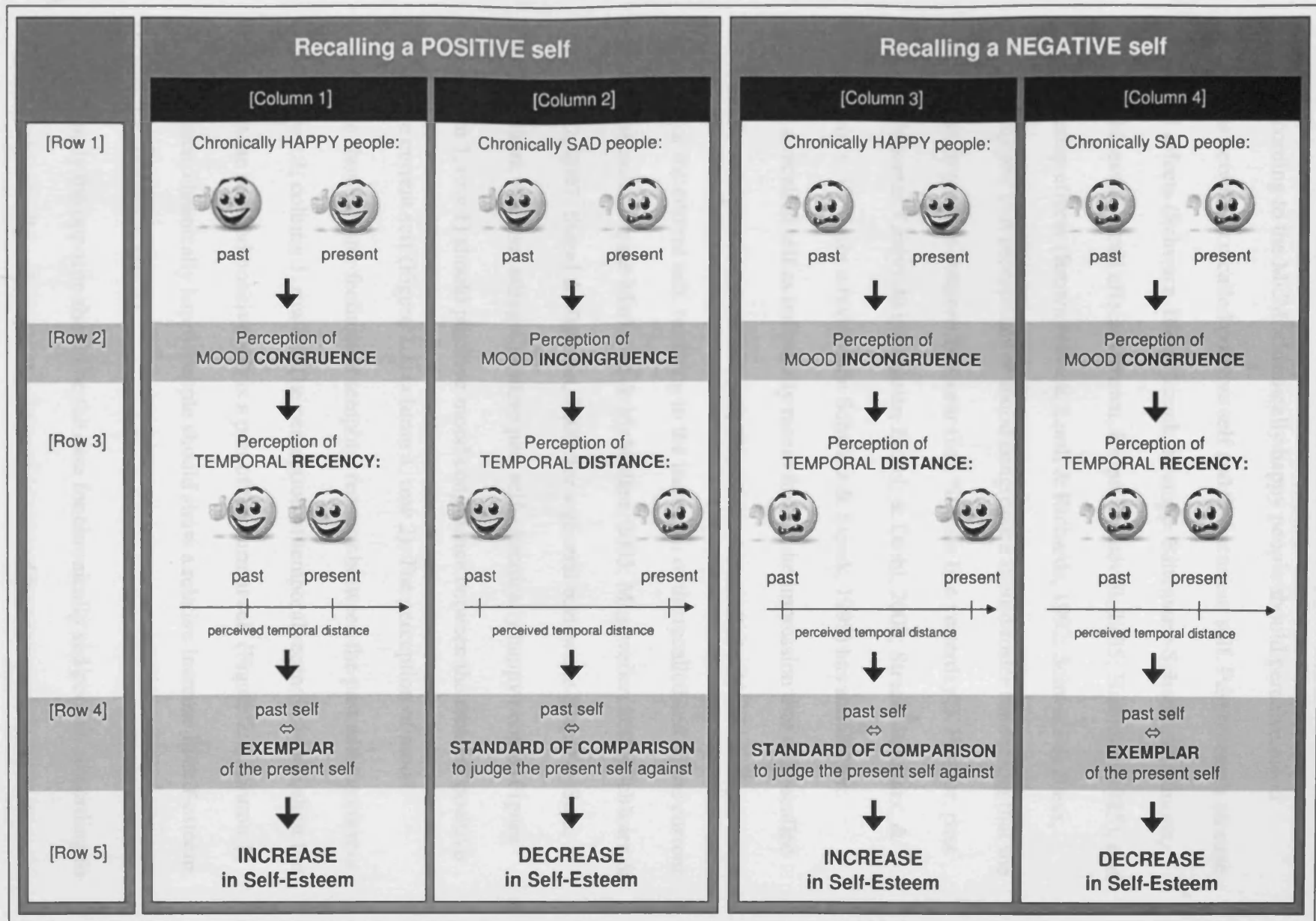
According to the MCM, chronically happy people should perceive *mood*

*congruence* between a recalled positive self and their current self. Past research on ease

of retrieval effects (Schwarz, Bless, Strack, Klumpp, Rittenauer-Schatka, & Simons,

1991), vividness of recall effects (Brown, Ripps, & Shevell, 1985; Hishitani, 1985), and

feature overlap effects (Brown Novick, Lord, & Richards, 1992; Schwarz & Bless,

2007) all suggest that perceptions of mood congruence should foster the feeling that the

recalled positive self is *temporally recent* (i.e., "it feels like yesterday"). Further, past

research (Broemer, Grabowski, Gebauer, Ermel, & Diehl, 2008; Strack, Schwarz, &

Gschneidinger, 1985; for a review see Schwarz & Strack, 1999) has shown that

perceiving a recalled self as temporally recent fosters the impression that this recalled

self is still a valid part of the current self. Therefore, the recalled self serves as an

exemplar for the current self, resulting in the inclusion of the recalled self in the current

self (i.e., assimilation; see Markman & McMullen, 2003; Mussweiler, 2003; Schwarz &

Bless, 1992, 2007; Stapel & Koomen, 2000; for a general review see Stapel & Suls,

2007). In short, when recalling a positive past self, chronically happy people (Figure

2.1, column 1, row 1) should perceive mood congruence between the recalled positive

self and the current self (Figure 2.1, column 1, row 2). The perception of mood

congruence should foster feelings of temporal recency between the past and the current

self (Figure 2.1, column 1, row 3). The perception of temporal recency should elicit the

feeling that the recalled positive self is a part of the current self (Figure 2.1, column 1,

row 4). Hence, chronically happy people should show a relative increase in self-esteem

(Figure 2.1, column 1, row 5).

Exactly the opposite should be the case for chronically sad people. According to

the MCM, chronically sad people should perceive *mood incongruence* between a

recalled positive self and their current self. As suggested by past research (see above),

perceptions of mood incongruence should foster the feeling that the recalled positive

self is *temporally distant* (i.e., "it feels like centuries ago"). Further, past research has

shown that perceiving a recalled self as temporally distant fosters the impression that

this recalled self is no longer a valid part of the current self. In this case, the recalled

self serves as a standard of comparison against which the current self is judged,

resulting in the exclusion of the recalled self from the current self (i.e., contrast). In

short, when recalling a positive past self, chronically sad people (Figure 2.1, column 2,

row 1) should perceive mood incongruence between the recalled positive self and the

current self (Figure 2.1, column 2, row 2). The perception of mood incongruence

should foster feelings of temporal distance between the past and the current self (Figure

2.1, column 2, row 3), and the perception of temporal distance should elicit the feeling

that the recalled positive self is no longer a part of the current self. Hence, the current

self should be compared to the positive past self (Figure 2.1, column 2, row 4), making

the current self look inferior in comparison. As such, chronically sad people should

show a relative decrease in self-esteem (Figure 2.1, column 2, row 5).

So far, I have outlined the implications of the MCM of recalling a positive past

self. Of course, the recall of past selves is not restricted to remembering past glories.

The MCM also forms predictions concerning the implications of recalling a negative

past self. Specifically, the MCM suggests that chronically happy people (Figure 2.1,

column 3, row 1) should perceive *mood incongruence* between a recalled negative self

and their current self (Figure 2.1, column 3, row 2). Perceptions of mood incongruence

should foster the feeling that the recalled positive self is *temporally distant* (Figure 2.1,

column 3, row 3), giving the impression that this recalled self is no longer a valid part

of the current self. Therefore, the recalled self serves as a standard of comparison

against which the current self is judged, resulting in the exclusion of the recalled self

from the current self (i.e., contrast) (Figure 2.1, column 3, row 4). Thus, chronically

happy people should show a relative increase in self-esteem (Figure 2.1, column 3, row

5).

Exactly the opposite should be the case for chronically sad people. The MCM

suggests that chronically sad people (Figure 2.1, column 4, row 1) should perceive

*mood congruence* between a recalled negative self and their current self (Figure 2.1,

column 4, row 2). Perceptions of mood congruence should foster the feeling that the

recalled positive self is *temporally recent* (Figure 2.1, column 4, row 3), giving the

impression that this recalled self is still a valid part of the current self. Therefore, the

recalled self serves as an exemplar for the current self, resulting in the inclusion of the

recalled self in the current self (i.e., assimilation) (Figure 2.1, column 4, row 4). Thus,

chronically sad people should show a relative decrease in self-esteem (Figure 2.1,

column 4, row 5).

The provocative implication of the MCM is that chronically happy people

should show a relative increase in self-esteem when recalling either a positive or a

negative past self, whereas chronically sad people should show a relative decrease in

self-esteem when recalling either a negative or a positive past self. In other words, the

MCM predicts that chronically happy people show a relative increase in self-esteem

whatever valenced self they recall, whereas chronically sad people show a relative

decrease in self-esteem whatever valenced self they recall. As such, the MCM points

towards a causal effect of psychological health, in the form of chronic mood, on self-

esteem, when it comes to recalling valenced selves.

As outlined in Chapter 1, research testing the effect of psychological health on

self-esteem is sparse (see also Baumeister et al., 2003). Further, this research does not

reveal the processes that explain why better psychological health fosters higher self-

esteem. One of the main strengths of the MCM is that it describes the precise processes

that underlie the effect of psychological health on self-esteem when recalling valenced

selves. A detailed description of these processes follows in the next section.

## 2.2.1   Processes Underlying the MCM

The processes that underlie the MCM have partly been suggested and supported

by other research. First, the Inclusion/Exclusion Model of Social Judgment (Schwarz &

Bless, 1992, 2007) forms the basis for predicting that perceived temporal recency

between a recalled and the current self evokes assimilation effects and that perceived

temporal distance evokes contrast effects (see link between rows 3, 4, and 5 in Figure

2.1), . In the present context, perceiving temporal recency between a recalled self and

the current self leads the recalled self to be included in the representation of the current

self, eliciting assimilation. However, perceiving temporal distance between a recalled

self and the current self leads the recalled self to be excluded from the representation of

the current self, eliciting contrast.

Moreover, the core of MCM – that perceived mood congruence between a

recalled self and the current self leads to feelings of temporal recency (see link between

rows 2 and 3 in Figure 1) – is in line with research investigating effects of ease of

retrieval (Schwarz et al., 1991), vividness of recall (Brown et al., 1985), and feature

overlap (Schwarz & Bless, 2007; Stapel, 2007). Interestingly, although these lines of

research all suggest that mood congruence between a recalled self and the current self

should lead to feelings of temporal recency, they differ in the suggested process

underlying this link. Research investigating the effects of ease of retrieval and vividness

of recall suggests that mood congruence increases the ease and the vividness with

which information is recalled (cf. mood-state-dependent retrieval effect; Blaney, 1986;

Bower, 1981; Kenealy, 1997). At the same time, research has shown that ease of

retrieval and vividness of recall are used as heuristics to judge temporal distance, with

easily retrieved and vividly recalled memories feeling temporally more recent than

memories that are difficult to retrieve or feel vague and fuzzy (e.g., Brown et al., 1985;

Herzog, Hansen, & Wänke, 2007; Sanna & Schwarz, 2003, 2004). Together then,

research investigating effects of ease of retrieval and vividness of recall suggests that

ease of retrieval and vividness of recall mediate the effect of mood congruence on

perceived temporal distance.

On the other hand, research investigating the effects of feature overlap (Schwarz

& Bless, 2007; Stapel, 2007) may also explain the effect of mood congruence on

perceived temporal distance. Specifically, affect should be an important feature when it

comes to valenced selves. This assumption is in line with the central role of the hedonic

principle in people's lives (Kahneman et al., 1999; Sedikides & Gregg, 2008). When

recalling *valenced* selves, mood should be an especially relevant feature and hence

mood congruence should be an important type of feature overlap. Of importance,

overlap between a recalled self and the current self has been assumed to foster feelings

of personality continuity, which have been tied to the perception of temporal recency

(cf. Beike & Niedenthal, 1998; Broemer et al., 2008). Together then, research

investigating effects of feature overlap suggests that mood congruence is a particularly

relevant type of feature overlap when recalling valenced selves and hence mood

congruence should have an effect on perceived temporal distance.

Both possible explanations for our assumption that mood congruence affects

perceived temporal distance are theoretically sound and not mutually exclusive. We

will test which of these explanations applies to our model.

## 2.2.2   The Temporal Distance Bias

While the primary aim of the research described in this chapter is to show that psychological health, in the form of chronic mood, exerts effects on self-esteem, the research also examines the mechanisms underlying the *temporal distance bias*. The temporal distance bias describes the phenomenon that people perceive positive past selves as temporally more recent than negative past selves. Prior research has suggested that the temporal distance bias is due to the motivation to self-enhance (Ross & Wilson, 2002). According to temporal self-appraisal theory (Ross & Wilson, 2000; Wilson & Ross, 2001), the general finding that a positive past self is perceived as more recent than a negative past self reflects people's attempts to wilfully associate the current self with positive past selves and to dissociate it from negative past selves (cf. Ross & Conway, 1986; Ross & Wilson, 2000; Wilson & Ross, 2001, 2003). Ross and Wilson (2002) argued that this *motivational explanation* for the temporal distance bias is supported by their finding that this bias is stronger for people with high self-esteem (cf. Libby, Eibach, & Gilovich, 2005; McFarland & Alvaro, 2000). According to Ross and Wilson (2002), self-esteem moderates the temporal distance bias, because high self-esteem people engage more strongly in self-enhancement (Baumeister, 1998; Sedikides & Gregg, 2003; Sedikides & Strube, 1997). Complementing this research, the MCM suggests that the strength of the temporal distance bias is partly determined by *cognitive factors*. As illustrated in Figure 2.1, the MCM predicts that chronically happy people perceive a recalled positive self as more recent than a recalled negative self because they perceive similarities in chronic and recalled affective states. Following the same

logic, the MCM predicts that chronically sad people perceive a recalled negative self as more recent than a recalled positive self.

### 2.2.3   Overview

Overall, the research described in this chapter pursues three goals. The first goal is to use the MCM to show that psychological health, in the form of chronic mood, exerts effects on self-esteem when it comes to recalling valenced selves. The second goal automatically results from the first goal. Particularly, the second goal is to challenge the common belief that people generally assimilate toward a recalled positive self and contrast themselves away from a recalled negative self. The final goal is to shed more light on the mechanisms underlying the temporal distance bias.

Four studies were conducted in order to achieve these goals. Study 1 shows that chronic mood affects the direction of the temporal distance bias and that perceived mood congruence mediates this effect. Study 2 replicates the findings of Study 1 using a different operationalization. More importantly, Study 2 rules out the possibility that the moderating effect of chronic mood on the temporal distance bias is spuriously caused by trait self-esteem. Study 3 replicates and extends the findings of Studies 1 and 2 by demonstrating that perceiving a recalled self as recent leads to an assimilation effect on self-esteem, whereas perceiving a recalled self as distant leads to a contrast effect on self-esteem. Finally, Study 4 replicates the results of the prior studies and shows that an experimental manipulation of perceived temporal distance successfully undermines the naturally occurring differences in the temporal distance bias between happy and sad people. This last finding is important because it shows that interventions

can be designed in order to prevent chronically sad people from decreasing their self-esteem by recalling past selves.

## 2.3    Study 1

In Study 1, we tested whether chronically happy people perceive a recalled positive self as temporally more recent than a recalled negative self *and* whether chronically sad people perceive a recalled negative self as temporally more recent than a recalled positive self. Further, we tested whether this effect is due to differences between happy and sad people in the perceived mood congruence between the recalled self and the current self.

### 2.3.1   Method

#### Participants

95 participants (73 women, 20 men, and 2 did not respond) completed this online-study (www.online-studies.org). The study was advertised on John Krantz's web portal for online-studies (http://psych.hanover.edu/research/exponnet.html). The language of the study was English. The mean age of the participants was 27.08 years ($SD$ = 10.61). The majority of the participants were from North America (77%). One additional participant was identified as an outlier and was excluded from the analyses. The reaction time of one additional participant indicated that she took a long break from the study between the completion of the manipulation and the dependent measures; thus, she was also excluded from the analyses.

#### Materials and Procedure

After consenting to participate, participants completed a series of demographic items. Next, we assessed participants' chronic mood followed by the recall of either positive or negative personal episodes that took place three to five years ago. As a manipulation check, participants rated the valence of the recalled episodes. Finally, participants completed the dependent measures, which were perceived mood congruence and perceived temporal distance between the recalled self and the current self. At the end of the study, participants read a feedback page and were thanked for their participation.

*Chronic mood.* The PANAS (Watson et al., 1988) consists of a 10-item Positive Affect subscale and a 10-item Negative Affect subscale. Example items for the Positive Affect subscale are "enthusiastic" and "active". Example items for the Negative Affect subscale are "upset" and "ashamed". Participants indicated whether or not "I generally feel this way...", using a 5-point scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). As in previous research (e.g., Schimmack & Diener, 2003), positive and negative (reverse-scored) affect were combined to form one chronic mood score[1] ($\alpha = .89$).

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[1]  By averaging across both subscales, chronic mood was treated as a one-dimensional construct. Some prior research has found that positive and negative affect do not constitute the endpoints of a single dimension, but constitute two independent dimensions (e.g., Watson et al., 1988). However, this perspective was challenged by Diener, Larsen, Levine, and Emmons (1985), who have argued that the one-dimensional nature of chronic mood was obscured by the failure to distinguish between the intensity and the frequency of affect. In order to test whether positive and negative (reverse-scored) affect have different moderating effects on the temporal distance bias, all analyses were conducted for positive affect and negative affect separately for all

*Past self recall.* In the positive (negative) past self condition participants read:

"We would like you now to think about the successes (failures) you had 3 to 5

years ago. That is, please close your eyes and visualize as many of your own personal

successes (failures) as possible that took place 3 to 5 years ago. IN OTHER WORDS,

THINK ABOUT ALL PERSONAL SUCCESSES (FAILURES) YOU

EXPERIENCED 3 TO 5 YEARS AGO. Think solely about your own personal

successes (failures) and disregard any personal failures (successes).

After visualizing as many successes (failures) as possible we would like you to

write down the three most positive (negative) personal successes (failures) you had 3 to

5 years ago. Please describe one success (failure) in each of the three textboxes below."

*Manipulation check.* Participants received a list of the three episodes they listed

as a part of the manipulation ($\alpha = .86$). Participants rated the valence of each episode on

a 9-point rating scale ranging from -4 (*extreme failure*) to +4 (*extreme success*).

*Perceived mood congruence.* For each episode, perceived mood congruence was

assessed with a semantic differential ranging from "My current mood is very different

from the mood I was in at the time of episode X" to "My current mood is very similar

to the mood I was in at the time of episode X". Participants responded by ticking on a

420 pixels long line. This line actually consisted of 60 squares. Thus, scores ranged

from 1 to 60 ($\alpha = .79$).

*Perceived temporal distance.* For each episode, perceived temporal distance was

assessed with two semantic differentials. Participants used the same response format as

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four studies. The results using positive affect and negative affect independently

mirrored each other and were also virtually identical to the results obtained by treating

chronic mood as a one-dimensional construct. Therefore, for the sake of brevity only

the results obtained by the total chronic mood scale are reported.

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used to assess perceived mood congruence. The first semantic differential ranged from "Episode X feels very close" to "Episode X feels very distant". The second semantic differential scale ranged from "Episode X feels very near" to "Episode X feels very far away" ($\alpha = .82$). This measure was virtually identical to that used by Ross and Wilson (2002; Study 1).

In order to compute the internal consistencies for the perceived mood congruence and the perceived temporal distance measures, the three episodes for each participant were re-ordered so that episode 1 was always the episode with the highest perceived mood congruence/temporal distance score and episode 3 was always the episode with the lowest perceived mood congruence/temporal distance score. This procedure is necessary in order to compute Cronbach's Alpha, because the order of the mood congruence items (i.e., the episodes) was determined by the participants themselves. Note that reordering the items does not affect the mean perceived mood congruence and perceived temporal distance scores.

## 2.3.2    Results and Summary

To check whether participants in the positive recall condition recalled a more positive self than people in the negative recall condition, we conducted a one-way ANOVA with the valence manipulation as the sole factor and the self-rated valence of the recalled self as the dependent variable. This analysis revealed that people in the positive recall condition indeed recalled a more positive self than people in the negative recall condition (see Table 2.1).

To test the hypothesis that chronic mood moderates the effect of recalling a valenced self on perceived temporal distance, we conducted a multiple regression

analysis with valence of the recalled self (dummy coded) as a dichotomous predictor,

chronic mood (centred) as a continuous predictor, and the cross-product of valence of

the recalled self and chronic mood as a third predictor, with perceived temporal

distance as the criterion (Cohen & Cohen, 1983). As illustrated in Figure 2.2 and Table

2.2, the results of this analysis support our hypothesis.[2]

---

[2]    An alternative hypothesis that may explain this result is that happy (sad) people

recall episodes that are more (less) positive in the positive recall condition and episodes

that are less (more) negative in the negative recall condition. In order to test this

hypothesis, the same analysis was conducted again while controlling for perceived

positivity of the recalled episodes. The results of this analysis were virtually identical to

the results when perceived positivity of the recalled episodes was not controlled.

Further, this alternative hypothesis was tested in all subsequent studies and it

consistently failed to explain the hypothesized effects. Thus, these results render this

alternative hypothesis extremely unlikely.

Table 2.1

*Descriptive Statistics and Significance Tests to Check the Effectiveness of the Valenced*

*Recall Manipulation*

| Study | M | | SD | | ANOVA | |
|---|---|---|---|---|---|---|
| | positive recall | negative recall | positive recall | negative recall | *F* | *p* |
| 1 | 2.51 | -1.55 | 1.10 | 1.59 | 197.47 | .001 |
| 2 | 2.38 | -2.06 | 1.72 | 1.83 | 160.98 | .001 |
| 3 | 2.71 | -1.55 | 1.22 | 2.03 | 253.29 | .001 |
| 4 | 2.52 | -2.11 | 1.79 | 1.83 | 446.07 | .001 |

*Note.* DV: Perceived Valence of the Recalled Self

*Figure 2.2.* The effect of valence of the recalled self (positive vs. negative) x chronic

mood (happy vs. sad) on the perceived temporal distance between the recalled

and the current self. The significance tests for contrasts A to D are presented in

Table 2.2.
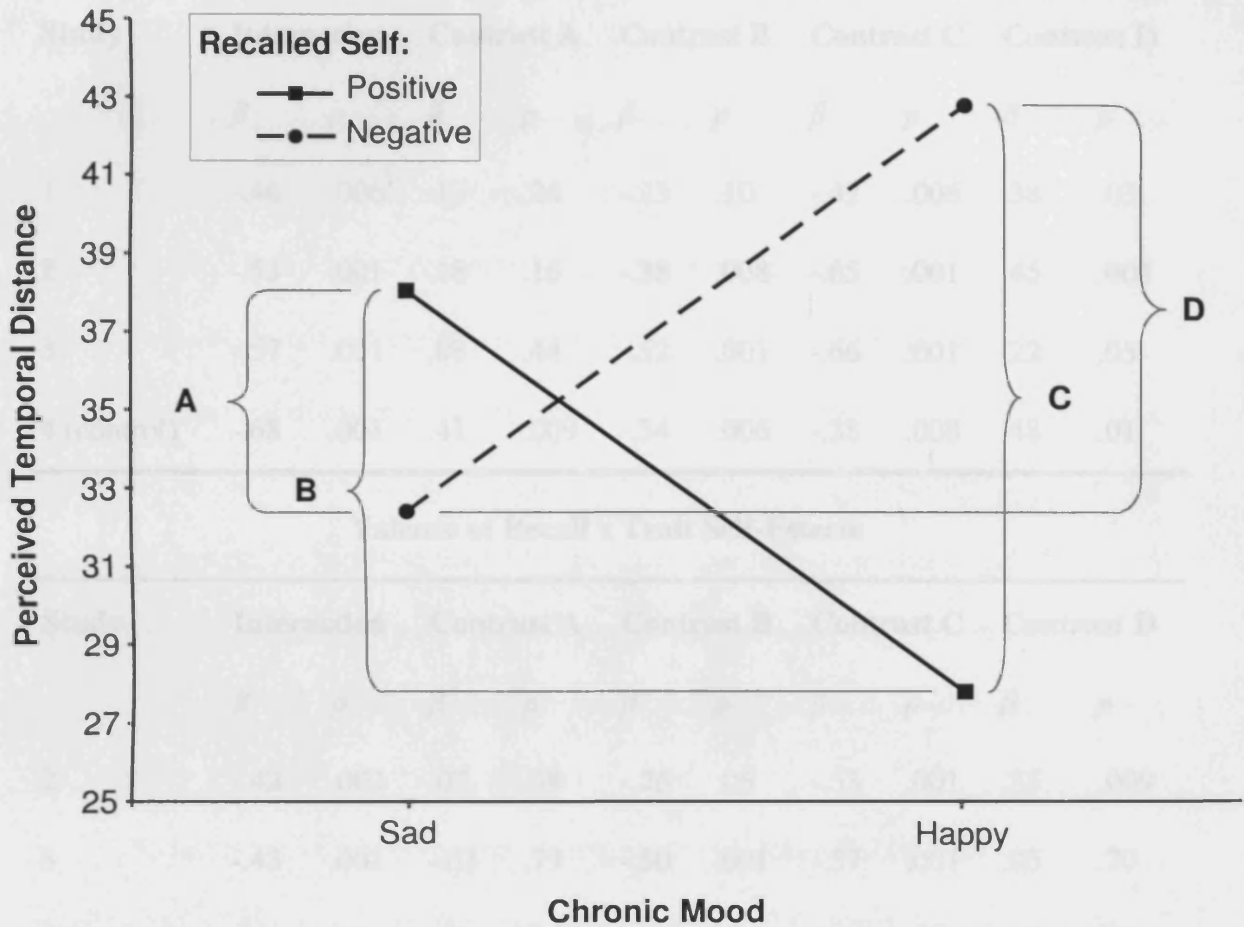


*Note.* Sad and happy mood equal 1 SD below and above the mean of chronic mood,

respectively. The graph illustrates the *mean* temporal distance perceptions for happy vs.

sad mood people in the positive vs. negative recall condition *across Studies 1 to 4.*

Table 2.2

*Valence of Recall x Chronic Mood/Trait Self-Esteem as Predictor of Perceived*

*Temporal Distance*

### Valence of Recall Self x Chronic Mood

| Study | Interaction | | Contrast A | | Contrast B | | Contrast C | | Contrast D | |
|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $p$ | $\beta$ | $p$ | $\beta$ | $p$ | $\beta$ | $p$ | $\beta$ | $p$ |
| 1 | -.46 | .006 | .17 | .24 | -.23 | .10 | -.42 | .006 | .38 | .03 |
| 2 | -.53 | .001 | .18 | .16 | -.38 | .008 | -.65 | .001 | .45 | .001 |
| 3 | -.57 | .001 | .08 | .44 | -.52 | .001 | -.66 | .001 | .22 | .05 |
| 4 (control) | -.68 | .001 | .41 | .009 | -.34 | .006 | -.38 | .008 | .48 | .01 |

### Valence of Recall x Trait Self-Esteem

| Study | Interaction | | Contrast A | | Contrast B | | Contrast C | | Contrast D | |
|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $p$ | $\beta$ | $p$ | $\beta$ | $p$ | $\beta$ | $p$ | $\beta$ | $p$ |
| 2 | -.42 | .002 | .07 | .58 | -.26 | .06 | -.53 | .001 | .35 | .009 |
| 3 | -.43 | .001 | -.03 | .79 | -.50 | .001 | -.57 | .001 | .05 | .70 |
| 4 (control) | -.44 | .01 | .28 | .06 | -.08 | .59 | -.27 | .09 | .49 | .005 |

*Note.* DV: Perceived Temporal Distance; Contrast A to D Correspond to the Contrasts

as Indicated in Figures 2.2 and 2.3.

Next, this interaction was decomposed in order to test the statistical significance

of the four simple contrasts (Aiken & West, 1991). First, we tested the relation between

chronic mood and perceived temporal distance for participants in the positive recall and

the negative recall conditions separately. As can be seen in Figure 2.2 and Table 2.2,

chronically happy people perceived a recalled negative past self as temporally more

distant than chronically sad people (contrast D), whereas chronically happy people

perceived a recalled positive self as marginally more recent than chronically sad people

(contrast B). Second, to test the hypotheses that chronically happy (sad) people

perceived a recalled positive (negative) self as temporally more recent than a recalled

negative (positive) self, we tested the relation between valence of the past self and

perceived temporal distance at values one standard deviation below and above the mean

of chronic mood. As can be seen in Figure 2.2 and Table 2.2, chronically happy people

perceived the recalled positive self as temporally more recent than the recalled negative

self (contrast C), whereas chronically sad people showed a tendency to perceive the

recalled negative self as temporally more recent than the recalled positive self (contrast

A), although this effect was not significant.

To test whether perceived mood congruence mediated the valence of the

recalled self x chronic mood effect on perceived temporal distance, we followed the

recommendations by Baron and Kenny (1986). Specifically, in step 1 it has to be shown

that the independent variable (i.e., the interaction between valence of the recalled self

and chronic mood) predicts the dependent variable (i.e., perceived temporal distance).

As shown above, this criterion was met. In step 2 it has to be shown that the

independent variable (i.e., the interaction between valence of the recalled self and

chronic mood) predicts the mediator (i.e., perceived mood congruence). A regression

analysis revealed that this criterion was also met (see Table 2.3). Finally, in step 3 it has

to be shown that the effect of the independent variable on the dependent variable is

reduced when the mediator is controlled for. A regression analysis showed that the

former highly significant effect of the interaction between valence of the recalled self

and chronic mood on perceived temporal distance (see step 1) was no longer significant

after perceived mood congruence was controlled. Further, a Sobel test (1982) revealed

that the path from the valence of the recalled self x chronic mood interaction over

perceived mood congruence to perceived temporal distance was significant, $z = 2.33$, $p$

$= .02$. Thus, these analyses support our hypothesis that the valence of the recalled self x

chronic mood interaction affects perceived temporal distance through its effect on

perceived mood congruence. The results of the mediation analysis are summarized in

Table 2.3.[3]

---

[3] Another alternative hypothesis that may explain the findings is that happy people

strategically choose to recall positive episodes that actually occurred relatively recently

within the instructed time-frame (e.g., 3 years ago), whereas they choose to recall

negative episodes that actually occurred relatively long ago within the instructed time-

frame (e.g., 5 years ago). Past research (Ross & Wilson, 2002) suggests that happy

people may be motivated to make such strategic choices concerning the episodes they

recall in order to associate themselves with positive episodes (by recalling more recent

ones) and to dissociate themselves with negative episodes (by recalling more distant

ones). Therefore, Study 1 assessed the actual temporal distance for each episode

("Episode 1/2/3 took place in [month], [year]"; $a = .75$). This enabled testing whether

valence of the recalled self x chronic mood predicted actual temporal distance.

Speaking against this alternative explanation, the results of a multiple regression

analysis with valence of the recalled self (dummy coded), chronic mood (centred), and

the cross-product of valence of the recalled self and chronic mood as the predictors, and

---

To summarize the results of Study 1, the perception of temporal distance in relation to positive and negative past selves was dependent on chronic mood. Chronically happy people perceived a recalled negative self as temporally more distant than chronically sad people, whereas chronically happy people perceived a recalled positive self as temporally more recent than chronically sad people. Further, chronically happy people perceived a recalled positive self as temporally more recent than a recalled negative self, whereas chronically sad people showed a tendency to perceive a recalled negative self as temporally more recent than a recalled positive self, although this last effect was not significant. Crucially, these differences in perceived temporal distance occurred although actual temporal distance between the recalled positive and negative selves to the current self was held constant. Moreover, we provided evidence that the determinant for this temporal distance bias was the perceived mood congruence between the recalled self and the current self. This finding supports our hypothesis that the temporal distance bias is not solely due to the motivation to self-enhance (Ross & Wilson, 2002) but that cognitive factors (i.e., perceived mood congruence) can also determine this bias.

---

actual temporal distance as the criterion revealed no significant interaction effect. Thus, there was no evidence that happy (sad) people recalled positive (negative) selves that actually took place more recently than sad (happy) people did. Further evidence against this alternative explanation is that controlling for actual temporal distance did not change the results of our valence of recall x chronic mood effect on perceived temporal distance.

Table 2.3

*Perceived Mood Congruence as a Mediator of the Valence of Recalled Self x Chronic*

*Mood /Trait Self-Esteem Effect on Perceived Temporal Distance.*

Valence of Recall x Chronic Mood → Perc. Mood Congr. → Perc. Temp. Dist.

| Study | Baron & Kenny (1986) | | | | | | Sobel (1982) | |
| | Step 1 | | Step 2 | | Step 3 | | | |
| | $\beta$ | $p$ | $\beta$ | $p$ | $\beta$ | $p$ | $z$ | $p$ |
| 1 | -.46 | .006 | .48 | .003 | -.27 | .10 | 2.33 | .02 |
| 2 | -.53 | .001 | .48 | .001 | -.34 | .004 | 2.95 | .003 |
| 3 | -.57 | .001 | .63 | .001 | -.23 | .03 | 4.57 | .001 |
| 4 (control) | -.68 | .001 | .66 | .001 | -.39 | .04 | 2.81 | .005 |

Valence of Recall x Trait Self-Esteem → Perc. Mood Congr. → Perc. Temp. Dist.

| Study | Baron & Kenny (1986) | | | | | | Sobel (1982) | |
| | Step 1 | | Step 2 | | Step 3 | | | |
| | $\beta$ | $p$ | $\beta$ | $p$ | $\beta$ | $p$ | $z$ | $p$ |
| 2 | -.42 | .002 | .55 | .001 | -.18 | .18 | 16.56 | .001 |
| 3 | -.43 | .001 | .46 | .001 | -.18 | .09 | 3.50 | .001 |
| 4 (control) | -.44 | .01 | .35 | .03 | -.25 | .11 | 2.00 | .05 |

*Note.* Step 1 = effect of valence of recalled self x chronic mood/trait self-esteem on

perceived temporal distance; Step 2 = effect of valence of recalled self x chronic

mood/trait self-esteem on perceived mood congruence; Step 3 = identical to step 1,

while controlling for perceived mood congruence.

## 2.4    Study 2

Study 2 further tested the hypothesis that the temporal distance bias does not solely reflect self-enhancement motivation. Ross and Wilson (2002) argued that the temporal distance bias is due to the motivation to self-enhance, based on their finding that high self-esteem people are more prone than low self-esteem people to perceive a positive past self as temporally recent, and a negative past self as temporally distant. Because self-esteem and chronic mood are highly correlated with each other (Diener & Diener, 1995; Myers & Diener, 1995), the moderating effect of chronic mood obtained in Study 1 may be spuriously caused by the moderating effect of self-esteem. Thus, Study 2 was designed to replicate Study 1, while additionally testing whether the effects of chronic mood are spuriously caused by trait self-esteem. Given our finding that perceived mood congruence mediated the interaction effect of valence of the recalled self and chronic mood on perceived temporal distance, it is implausible that the effect of chronic mood is a completely spurious one.

Another goal of Study 2 was to use different methods than those used in Study 1. Specifically, we used different measures of perceived mood congruence and perceived temporal distance. Most importantly, we asked participants to recall past traits, rather than past episodes. The literature on past selves almost exclusively focuses on the recall of past episodes. We posit that a person's positive and negative traits constitute a more adequate operationalization of a person's valenced self than personal positive and negative episodes. In line with this argument, the Twenty Statements Task (Kuhn & McPartland, 1954) asks participants to provide 20 self-descriptions as a measure of the self-concept. In this open-ended task, participants frequently report traits and personal attributes but very rarely report personal episodes. Moreover, with

increasing temporal distance, past episodes have been found to be recalled in more

dispositional terms (e.g., Semin & Smith, 1999; Trope & Liberman, 2003). Thus,

asking people to recall traits associated with a past self denotes a comprehensive and

representative way to operationalize past selves. Therefore, successful replication of

Study 1 with this different methodology would provide strong support for the

generalizability of our findings to different types of recall.

### 2.4.1   Method

#### Participants

103 participants (81 women, 22 men) completed this study. Again, the study

was advertised on Krantz's web portal. The mean age of the participants was 24.07

years ($SD = 9.10$). The majority of the participants were from North America (83%). 11

additional participants failed to complete the task and were excluded from the analyses.

#### Materials and Procedure

After consenting to participate, participants completed a series of demographic

items, measures of chronic mood and trait self-esteem (in randomized order), and then a

task asking them to recall either their positive or negative self. As a manipulation

check, participants rated the valence of the recalled attributes. Finally, participants

completed the dependent measures, which were perceived mood congruence and

perceived temporal distance between the past self and the current self. The order of the

items assessing the dependent variables was randomized and placed among several

filler items. At the end of the study, participants read a feedback page and were thanked

for their participation. The measure of chronic mood was identical to that used in Study

1 ($\alpha = .91$), whereas the manipulation and all other measures used were different from those used in Study 1.

*Trait self-esteem.* The Rosenberg Self-Esteem Scale (Rosenberg, 1965; $\alpha = .91$) consists of 10 items such as "On the whole, I am satisfied with myself" and "At times, I think I am no good at all" (reverse-scored). Participants responded to each item using a 7-point rating scale ranging from 1 (*does not apply at all*) to 7 (*applies completely*).

*Past self recall.* In the positive (negative) past self condition participants read:

"We would like you now to think about <u>positive (negative) attributes</u> you had <u>5</u> <u>years ago</u>. That is, please close your eyes and visualize the person you were 5 years ago by thinking about <u>solely positive (negative) attributes and disregarding any negative (positive) attributes</u>.

After visualizing your former self we would like you to <u>write down the 5 most positive (negative) attributes you had 5 years ago</u>. Please write one attribute (in one word) in each of the five textboxes below."

*Manipulation check.* Participants received a list of the five attributes they noted down as a part of the manipulation ($\alpha = .95$). Participants rated the valence of each attribute on a 9-point rating scale ranging from -4 (*very negative*) to +4 (*very positive*).

*Perceived mood congruence.* Perceived mood congruence was assessed with two items: "My current mood is very different from the mood at the time of my recalled self" (reverse scored) and "My general mood at the recalled time was similar to my mood nowadays", $r = .28$, $p = .005$. As in Study 1, participants completed these items by ticking on a 420 pixels long line ranging from 1 (*does not apply at all*) to 60 (*applies completely*).

*Perceived temporal distance.* The measure of perceived temporal distance was closely modelled after the measure used by Broemer et al. (2008). In particular,

perceived temporal distance was assessed with two items: "The recalled self felt very far away" (reverse scored) and "The recalled self felt very recent", $r = .40$, $p = .001$. Participants completed these items using the same response format as used to assess perceived mood congruence.

### 2.4.2   Results and Summary

Employing the same procedure as in Study 1, we initially sought to replicate our previous findings. This replication was obtained for all of the key findings. First, as shown in Table 2.1, our manipulation was successful. Second, as shown in Figure 2.2 and Table 2.2, chronic mood moderated the effect of recalling a valenced self on perceived temporal distance. Also, simple comparisons revealed that all contrasts in the interaction were significant in the expected direction except for Contrast A, which (similar to Study 1) showed a trend in the expected direction (see Table 2.2). Finally, as shown in Table 2.3, the effect of recalling a valenced self on perceived temporal distance was mediated by perceived mood congruence. Thus, the pattern of findings mirrored those obtained in Study 1.

Next, we tested the unique hypotheses of Study 2. To replicate Ross and Wilson's (2002) finding that trait self-esteem determines the perception of temporal distance in respect to recalled positive and negative selves, we repeated the moderation analyses described in Study 1, while using trait self-esteem instead of chronic mood as the continuous predictor. As expected, the interaction between valence of the recalled self x trait self-esteem was significant. The interaction is illustrated in Figure 2.3 (see also Table 2.2).

Furthermore, as shown in Table 2.3, the obtained interaction was mediated by perceived mood congruence. The finding that perceived mood congruence mediated the effect of valence of recalled self x trait self-esteem on perceived temporal distance provides initial support for our hypothesis that, over and above self-enhancement, cognitive factors account for the temporal distance bias. To further test this hypothesis, we conducted a multiple regression analysis with valence of the recalled self (dummy coded), chronic mood (centred), trait self-esteem (centred), the cross-product of valence of the recalled self and chronic mood, and the cross-product of valence of the recalled self and trait self-esteem as simultaneous predictors of perceived temporal distance. The results of this analysis can be found in Table 2.4.

*Figure 2.3.* The effect of valence of the recalled self (positive vs. negative) x trait self-

esteem (high vs. low) on the perceived temporal distance between the recalled and the

current self. The significance tests for contrasts A to D are presented in Table 2.2.
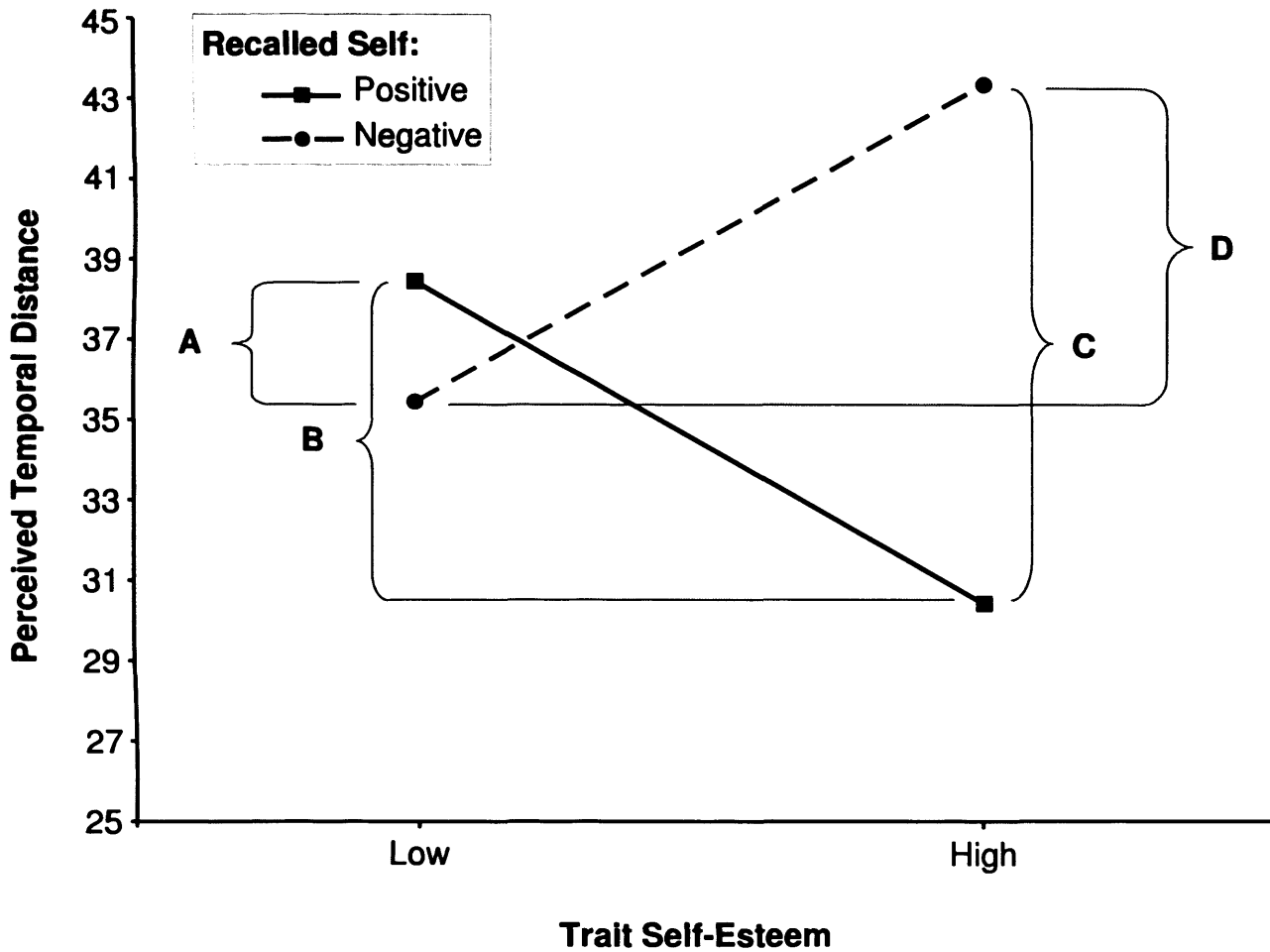


*Note.* Low and high self-esteem equal 1 SD below and above the mean of trait self-

esteem, respectively. The graph illustrates the *mean* temporal distance perceptions for

low vs. high self-esteem people in the positive vs. negative recall condition *across*

*Studies 2 to 4.*

Table 2.4

*Direct Comparison between the Effects of Chronic Mood and Trait Self-Esteem on the*

*Temporal Distance Bias*

|  | Study 2 | | Study 3 | | Study 4 (control) | |
|---|---|---|---|---|---|---|
|  | $\beta$ | $p$ | $\beta$ | $p$ | $\beta$ | $p$ |
| Valence of Recall | -.24 | .01 | -.30 | .001 | .05 | .60 |
| Chronic Mood | .51 | .01 | .24 | .05 | .25 | .25 |
| Trait Self-Esteem | -.08 | .71 | -.07 | .61 | .37 | .06 |
| Valence of Recall x Chronic Mood | -.59 | .003 | -.45 | .001 | -.65 | .005 |
| Valence of Recall x Trait Self-Esteem | .08 | .70 | -.20 | .11 | -.04 | .83 |

*Note.* DV: Perceived Temporal Distance

As can be seen, trait self-esteem did not account for the moderating effect of chronic mood on perceived temporal distance. Even after controlling for trait self-esteem, the moderating effect of chronic mood on the temporal distance bias remained highly significant ($p < .01$). If anything, our results suggest that chronic mood accounts for the moderating effect of trait self-esteem on the temporal distance bias. After controlling for chronic mood, the moderating effect of trait self-esteem on the temporal distance bias was no longer significant.

Despite using a different methodology, Study 2 replicated all results obtained in Study 1. Further, we extended the findings of Study 1 by providing evidence that our effect cannot be explained by self-enhancement. Taken together, there is strong support for our hypothesis that the temporal distance bias is not solely due to the motivation to self-enhance. Instead, our results suggest that the temporal distance bias is at least partially determined by cognitive factors: mood congruent past selves are perceived as temporally closer than mood incongruent past selves.

## 2.5    Study 3

As outlined in the introduction, perceived temporal distance has been found to be a crucial determinant of assimilation and contrast effects concerning past selves (for a review see Schwarz & Strack, 1999). Thus, Study 3 tested whether perceived temporal distance indeed determines assimilation and contrast effects on self-esteem, while attempting to replicate our earlier findings. Consistent with the MCM, we expected that perceiving a positive past self as temporally recent (as chronically happy people do) should lead to an assimilation effect of this positive past self and thus should relatively increase self-esteem. Similarly, perceiving a negative past self as temporally

recent (as chronically sad people do) should lead to an assimilation effect of this negative past self and thus should relatively decrease self-esteem. On the contrary, perceiving a negative past self as temporally distant (as chronically happy people do) should lead to a contrast effect concerning this negative past self and thus should relatively increase self-esteem. Similarly, perceiving a positive past self as temporally distant (as chronically sad people do) should lead to a contrast effect concerning this positive past self and thus should relatively decrease self-esteem. Together then, chronically happy people should show a relative increase in self-esteem after recalling either a positive or a negative past self. Chronically sad people, on the other hand, should show a relative decrease in self-esteem after recalling either a positive or a negative past self. Findings in support of this hypothesis would provide direct evidence that psychological health, in the form of chronic mood, exerts effects on self-esteem, when it comes to recalling valenced selves.

### 2.5.1   Method

*Participants*

153 participants (114 women, 37 men, and 2 did not respond) completed this study. Again, the study was advertised on Krantz's web portal. The mean age of the participants was 22.73 years (*SD* = 7.52). The majority of participants were from North America (86%). 13 additional participants failed to complete the task and were excluded from the analyses.

*Materials and Procedure*

The study was identical to Study 2 except that (a) participants completed a measure of trait self-esteem directly after completing the demographic questions (i.e.,

pre-manipulation self-esteem) and (b) participants completed the same self-esteem

measure again at the very end of the study (i.e., post-manipulation self-esteem).

Therefore, only the self-esteem measure is described below. Internal consistencies of

the chronic mood measure ($\alpha = .90$), the valence of the recalled self measure ($\alpha = .95$),

the measure of perceived mood congruence, $r = .53$, $p = .001$, and perceived temporal

distance, $r = .51$, $p = .001$, were good.

*Trait self-esteem.* The Single-Item Self-Esteem Scale (Robins, Hendin, &

Trzesniewski, 2001) consists of the item "I have high self-esteem." We chose this scale

because Ross and Wilson (2002) used the same measure to provide evidence that the

temporal distance bias is moderated by trait self-esteem. Participants responded to this

measure using the same response format used to assess perceived mood congruence.

## 2.5.2    Results and Summary

Employing the same procedure as in Studies 1 and 2, the initial analyses tested

whether Study 3 replicated the previous findings. Again, all of the key findings were

replicated. First, Table 2.1 shows that our manipulation was successful. Second, Figure

2.2 and Table 2.2 show that chronic mood moderated the effect of recalling a valenced

self on perceived temporal distance. Also, all of the contrasts showed the same effects

as in Studies 1 and 2. Third, Table 2.3 shows that the effect of recalling a valenced self

on perceived temporal distance was mediated by perceived mood congruence. Fourth,

the moderating effect of chronic mood on the temporal distance bias was not spuriously

caused by trait self-esteem. Figure 2.3 and Table 2.2 show that trait self-esteem

moderated the temporal distance bias, while Table 2.3 shows that the effect of valence

of recall x trait self-esteem was mediated by perceived mood congruence. Finally,

Table 2.4 shows that the moderating effect of chronic mood on the temporal distance

bias remained significant even after controlling for the moderating effect of trait self-

esteem. Taken together, the findings of Study 3 completely replicated the findings of

Studies 1 and 2.

Next, the analyses tested the unique hypotheses of Study 3. We first tested

whether perceived temporal distance actually determined the occurrence of assimilation

and contrast effects in respect to recalled positive and negative selves. This was done

by conducting a multiple regression analysis with valence of the recalled self (dummy

coded), perceived temporal distance (centred), the cross-product of valence of the

recalled self and perceived temporal distance, and *pre-manipulation* self-esteem as

predictors of *post-manipulation* self-esteem. As illustrated in Figure 2.4 and Table 2.5,

the results revealed a significant interaction between valence of the recalled self and

perceived temporal distance. Furthermore, Table 2.5 shows that all four contrasts in this

interaction were significant in the expected direction.

To further test the MCM's hypothesis that perceived temporal distance is an

important determinant of assimilation and contrast—as also proposed and shown by the

IEM (Schwarz & Bless, 1992, 2007; see also Broemer et al., 2008; Schwarz & Strack,

1999)—and to consolidate that perceived temporal distance mediates the effects of

perceived mood congruence, we first tested for perceived mood congruence's

propensity to determine assimilation and contrast and subsequently tested whether these

effects of perceived mood congruence are mediated by perceived temporal distance.

We did so following the recommendations by Baron and Kenny (1986). In the first

step, we tested whether perceived mood congruence determines self-esteem change in

conjunction with the type of recall. Thus, we conducted a multiple regression analysis

with valence of the recalled self (dummy coded), perceived mood congruence (centred),

the cross-product of the latter two, and *pre-manipulation* self-esteem as predictors of *post-manipulation* self-esteem. In line with the MCM, we found that perceived mood congruence in fact had the propensity to determine assimilation and contrast effects, as evidenced by a significant interaction, $\beta = .29$, $p = .003$. This analysis fulfils criterion 1 of Baron and Kenny's test for mediation—i.e., an effect of the IV on the DV. Criterion 2 stipulates an effect of the mediator on the DV. That is, we expected that perceived temporal distance would determine the occurrence of assimilation and contrast. As can be seen in the previous paragraph (see also Table 2.5) this criterion is also met. Finally, Baron and Kenny's criterion 3 stipulates that the effect of the IV on the DV is decreased when the mediator is controlled. In other words, we expected that the effect of the interaction between type of recall and perceived mood congruence is decreased when controlling for the effect of the interaction between type of recall and perceived temporal distance. Thus, we conducted a multiple regression analysis with valence of the recalled self (dummy coded), perceived mood congruence (centred), perceived temporal distance (centred), the cross-product of valence of the recalled self and perceived mood congruence, the cross product of valence of the recalled self and perceived temporal distance, and *pre-manipulation* self-esteem as predictors of *post-manipulation* self-esteem. Supporting the MCM, we found that the formerly significant interaction effect of valence of the recalled self x perceived mood congruence was in fact decreased, $\beta = .15$, *ns*. In line with this, the Sobel-test (1983) revealed that the path from valence of the recalled self x perceived mood congruence to post-manipulation self-esteem via valence of the recalled self x perceived temporal distance was significant, $z = 1.90$, $p = .03$ (one-tailed).

An additional regression analysis tested whether self-esteem is (a) more strongly affected by recalling a positive past self, (b) by recalling a negative past self, or (c) is similarly affected by recalling a positive and a negative past self. (There was no *a priori* foundation for assuming that one effect should be stronger than the other.) The multiple regression analysis included chronic mood (centred), valence of the recalled self (dummy coded), the cross-product of chronic mood and valence of the recalled self, and *pre-manipulation* self-esteem as predictors of *post-manipulation* self-esteem. The results revealed a significant effect of pre-manipulation self-esteem, $\beta = .60, p = .001$, a significant effect of chronic mood, $\beta = .36, p = .001$, no significant effect of valence of the recalled self, $\beta = -.05, p = .31$, and no significant interaction between chronic mood and valence of the recalled self, $\beta = -.07, p = .35$. Thus, the effects of recalling a valenced self on self-esteem are not stronger for a specific type of recall. This analysis is also essential because the significant relationship between chronic mood and post-manipulation self-esteem, after controlling for pre-manipulation self-esteem, directly shows that the recall of valenced past selves increases the self-esteem of happy people relative to sad people.

*Figure 2.4.* The effect of valence of the recalled self (positive vs. negative) x perceived

temporal distance (low vs. high) on post-manipulation self-esteem (while controlling

for pre-manipulation self-esteem). The significance tests for contrasts A to D are

presented in Table 2.5.
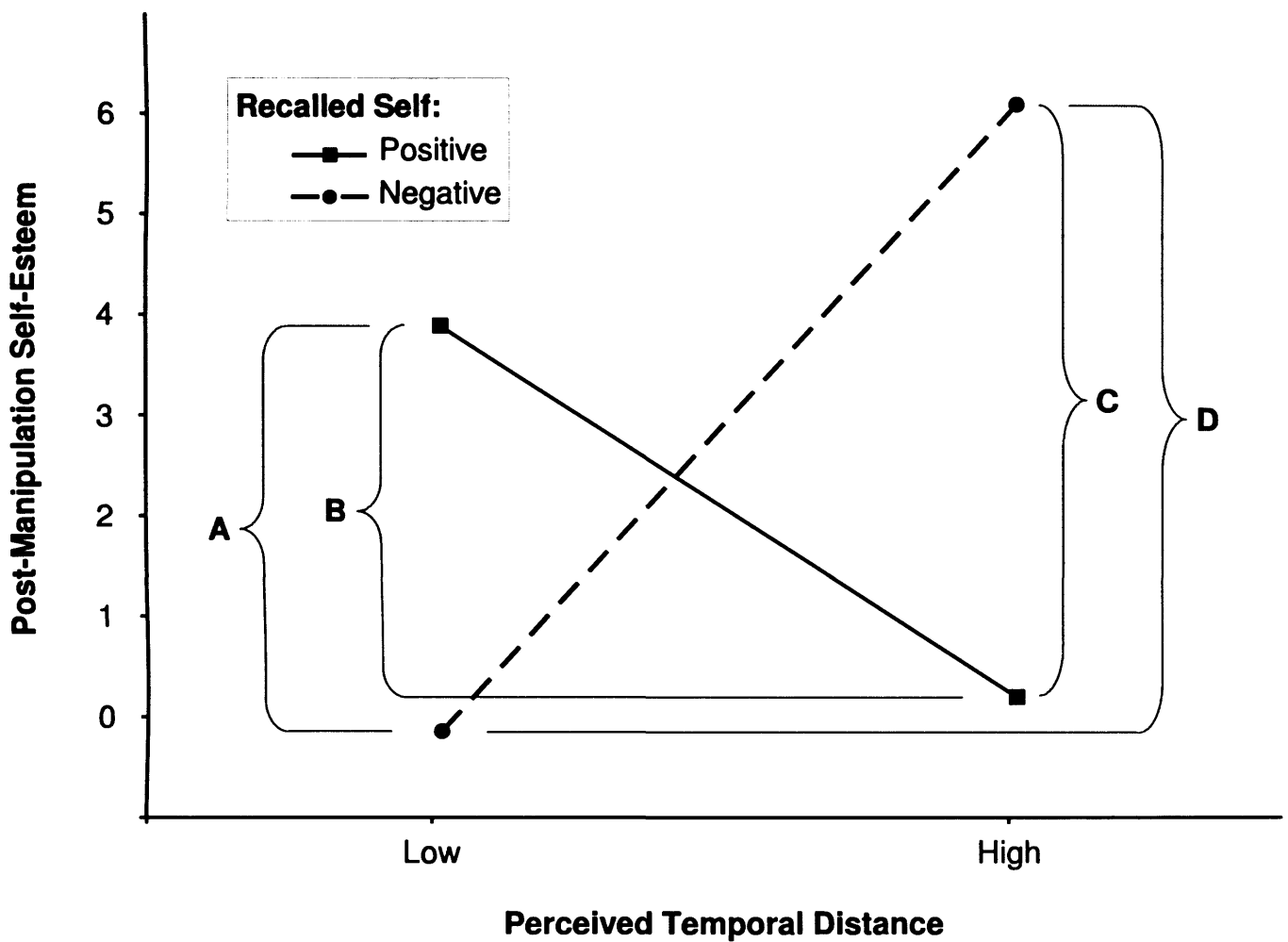


*Note.* Low and high perceived temporal distance equal 1 SD below and above the mean

of perceived temporal distance, respectively. The graph illustrates the *mean* post-

manipulation self-esteem for low vs. high temporal distance perceivers in the positive

vs. negative recall condition *across Studies 3 and 4.*

Table 2.5

*Valence of Recall x Perceived Temporal Distance as a Predictor of Post-Manipulation*

*Self-Esteem (while Controlling for Pre-Manipulation Self-Esteem)*

| Study | Interaction | | Contrast A | | Contrast B | | Contrast C | | Contrast D | |
|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $P$ | $\beta$ | $p$ | $\beta$ | $P$ | $\beta$ | $p$ | $\beta$ | $p$ |
| 3 | -.35 | .001 | .18 | .04 | -.15 | .04 | -.25 | .002 | .28 | .001 |
| 4 | -.15 | .003 | .08 | .10 | -.08 | .05 | -.13 | .007 | .12 | .02 |

*Note.* DV: Post-manipulation self-esteem; Contrast A to D correspond to the contrasts

as indicated in Figure 2.4.

To summarize, the results of Study 3 replicated Study 1's evidence that the direction of the temporal distance bias is determined by chronic mood. Further, Study 3 replicated Study 2's evidence that the moderating effect of chronic mood on the temporal distance bias is not spurious due to an effect of trait self-esteem on (a) the temporal distance bias or (b) chronic mood. Extending the findings of Studies 1 and 2, Study 3 provided evidence that the occurrence of assimilation and contrast effects in respect to recalled positive and negative selves is indeed determined by perceived temporal distance. Specifically, we found that an assimilation effect (indicated by a relative change of self-esteem) toward a recalled self occurs when this recalled self is perceived as temporally recent and that a contrast effect away from a recalled self (indicated by a relative change of self-esteem) occurs when this recalled self is perceived as temporally distant. That is, perceiving a positive past self as recent and perceiving a negative past self as distant led to a relative increase in self-esteem. However, perceiving a positive past self as distant and perceiving a negative past self as recent led to a relative decrease in self-esteem. Thus, thinking about either a positive past or a negative past relatively increases self-esteem for chronically happy people, but relatively decreases self-esteem for chronically sad people. This pattern of results provides the first direct evidence that psychological health, in the form of chronic mood, exerts effects on self-esteem, when it comes to recalling valenced selves.

## 2.6    Study 4

So far, the findings described in this chapter have shown that chronically sad people perceive a negative recalled self as temporally recent, and thus assimilate their current self toward the recalled self. Conversely, chronically sad people perceived a

positive recalled self as temporally distant and thus contrasted away from it. These findings suggest that it is important to recognize the central role of perceived temporal distance when attempting to increase self-esteem by asking chronically sad people to recall positive past selves (cf. nostalgia, reminiscence therapy, and experimental mood-manipulations). Specifically, it may be desirable to correct chronically sad people's naturally occurring temporal distance bias by manipulating their perception of temporal distance. Because temporal distance determines assimilation and contrast, undermining the temporal distance bias should prevent sad people from assimilating toward a recalled negative self and contrasting themselves away from a recalled positive self. Accordingly, such a temporal distance intervention should prevent a decrease in self-esteem for sad people.

To test this reasoning, Study 4 aimed to show that the naturally occurring temporal distance bias can be eliminated by making sad (happy) people believe that a recalled positive (negative) self is not as temporally distant as they are naturally inclined to think and a recalled negative (positive) self is not as temporally recent as they are naturally inclined to think. To manipulate the perception of temporal distance, Study 4 combined manipulations used by Broemer et al. (2008) and by Wilson and Ross (2001). Broemer and colleagues showed that asking participants to think about the time between the recalled self and the current self from a perspective that is far in the future makes the time between the recalled and current selves appear relatively short. Thus, to decrease perceived temporal distance, we asked participants to take the perspective of their future self in 25 years, to look back at their current self from this perspective, and to mentally travel back to their past self 5 years ago, where they should think about the positive or negative attributes they possessed at that time. To increase temporal distance, we asked participants to mentally travel *"all the way"* back to their

past self 5 years ago. Wilson and Ross (2001) showed that emphasizing the distance

between a recalled and a current self increases the perception of temporal distance. A

control condition did not attempt to influence perceived temporal distance and simply

repeated the procedure of Study 3.

### 2.6.2 Method

*Participants*

270 participants (208 women, 59 men, and 3 did not respond) completed this

study. Again, this study was advertised on Krantz's web portal for online-studies. The

mean age of the participants was 26.23 years ($SD$ = 9.65). The majority of the

participants were from North America (83%). 11 additional participants failed to

complete the task and thus were excluded from the analyses. The reaction time of one

additional participant indicated that she took a long break from the study between the

completion of the manipulation and the dependent measures and thus was also excluded

from the analyses.

*Materials and Procedure*

The control condition of this study was identical to Study 3. The only difference

between the short and long temporal distance conditions and the control condition was

that the past self recall task was modified to manipulate temporal distance perceptions.

Therefore, only the past self recall task for the short and long temporal distance

conditions are described below. Internal consistencies of the chronic mood measure ($\alpha$

= .91), the valence of the recalled self measure ($\alpha$ = .96), the measure of perceived

mood congruence, $r$ = .56, $p$ = .001, and perceived temporal distance, $r$ = .48, $p$ = .001,

were good.

*Past self recall: Short temporal distance.* In the positive (negative) past self

condition participants read the following instructions:

"We would like you now to think about <u>positive (negative) attributes</u> you had <u>5</u>

<u>years ago</u>. We would like you to do this by <u>taking the perspective of your future self in</u>

<u>25 years</u>. That is, *please <u>visualize yourself 25 years from now</u> and then <u>look back</u> to*

*your <u>current self</u>.* Keeping the perspective of your future self in 25 years, **please close**

**your eyes and visualize yourself <u>as you "travel" back</u>** from your *<u>current self</u>* to your

*<u>positive (negative) former self 5 years ago</u>.* When you reach that point, visualize the

person you were 5 years ago by thinking about <u>solely positive (negative) attributes and</u>

<u>disregarding any negative (positive) attributes</u>. This imagination task is illustrated by

the figure below (see Figure 2.5, Panel A).

After visualizing the time travel, starting with your current self and ending at

your positive (negative) former self 5 years ago, we would like you to <u>write down the 5</u>

<u>most positive (negative) attributes you had 5 years ago</u>. Please write one attribute (in

one word) in each of the five textboxes below. Please *don't forget to stick to the*

*perspective of your future self in 25 years* during the whole task!"

*Past self recall: Long temporal distance.* In the positive (negative) past self

condition participants read the following instructions:

"We would like you now to think about <u>positive (negative) attributes</u> you had <u>5</u>

<u>years ago</u>. We would like you to do this by <u>taking the perspective of your current self</u>.

That is, *please <u>visualize your current self</u> and then <u>look all the way back</u> to your*

*<u>positive (negative) former self 5 years ago</u>.* Keeping the perspective of your current

self, **please close your eyes and visualize yourself <u>as you "travel" all the way back</u>**

from your *<u>current self</u>* to your *<u>positive (negative) former self 5 years ago</u>.* When you

reach that point, visualize the person you were 5 years ago by thinking about <u>solely</u>

<u>positive (negative) attributes and disregarding any negative (positive) attributes</u>. This imagination task is illustrated by the figure below (see Figure 2.5, Panel B).

After visualizing the time travel, starting with your current self and ending all the way back at your positive (negative) former self 5 years ago, we would like you to <u>write down the 5 most positive (negative) attributes you had 5 years ago</u>. Please write one attribute (in one word) in each of the five textboxes below. Please *don't forget to stick to the perspective of your current self* during the whole task!"

### 2.6.3   Results and Summary

The initial analyses tested whether Study 4 replicated the findings from Studies 1 through 3. All of the key findings were replicated. First, Table 2.1 shows that the manipulation was successful. Second, Figure 2.2 and Table 2.2 show that chronic mood moderated the effect of recalling a valenced self on perceived temporal distance in the control condition of this study. Also, simple comparisons revealed that all contrasts of the interaction were significant in the expected direction. Third, Table 2.3 shows that the effect of recalling a valenced self on perceived temporal distance was mediated by perceived mood congruence. Fourth, the moderating effect on chronic mood on the temporal distance bias was not spuriously caused by trait self-esteem. Figure 2.3 and Table 2.2 show that trait self-esteem moderated the temporal distance bias, while Table 2.3 shows that the effect of valence of recall x trait self-esteem was mediated by perceived mood congruence. Fifth, Table 2.4 shows that the moderating effect of chronic mood on the temporal distance bias remained significant even after controlling for the moderating effect of trait self-esteem.

*Figure 2.5.* In order to illustrate participants the temporal distance manipulation task

participants in the short temporal distance condition saw the upper part of this figure

(A) and participants in the long temporal distance condition saw the lower part of this
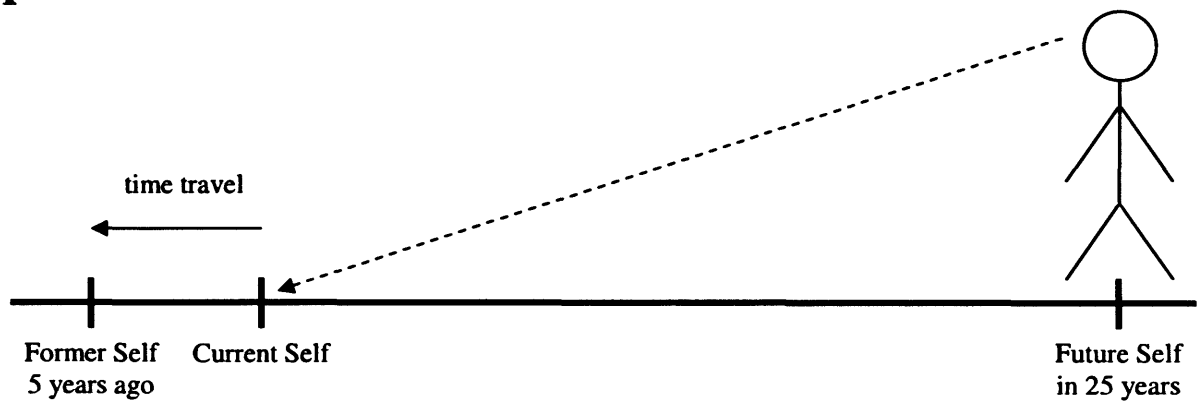
figure (B).
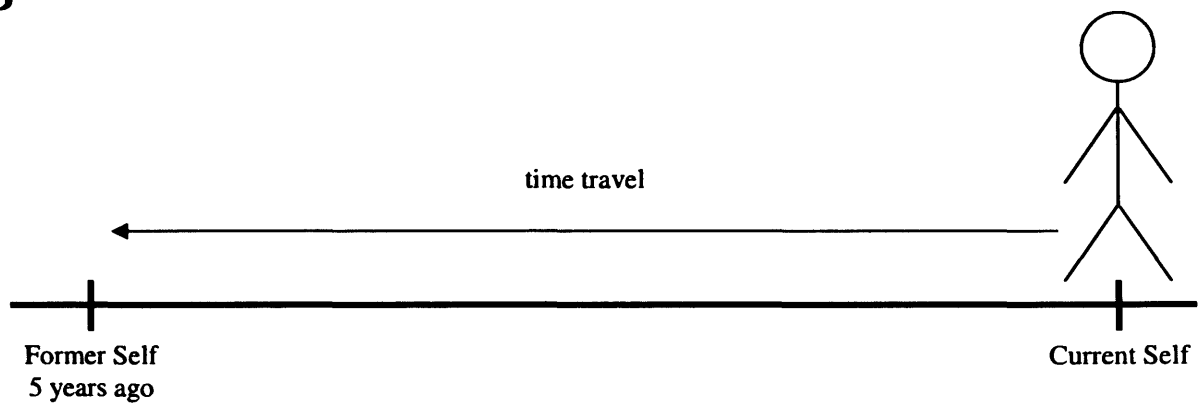
The next set of analyses tested whether Study 4 replicated the unique findings of

Study 3. First, these analyses tested whether perceived temporal distance determines the

occurrence of assimilation and contrast effects in respect to recalled positive and

negative selves. As shown in Figure 2.4 and Table 2.5, this was indeed the case.

Second, as shown in Table 2.5, three of the contrasts of this interaction were

significant, while the fourth was marginally significant (the latter is appropriate given

that this is a replication of our prior findings). All of the contrasts were in the expected

direction. Third, as in Study 3 perceived mood congruence also determined the

occurrence of assimilation and contrast effects in respect to recalled positive and

negative selves, $\beta = .17$, $p = .001$, and controlling for perceived temporal distance and

the interaction between perceived temporal distance and type of recall reduced the

effect of the interaction between perceived mood congruence and type of recall on post-

manipulation self-esteem (while additionally controlling for pre-manipulation self-

esteem) to $\beta = .11$, $p = .06$. The Sobel-test was close to significance, $z = 1.52$, $p = .06$

(one-tailed). Finally, we tested whether (a) self-esteem was more strongly affected by

recalling a positive past self, (b) self-esteem was more strongly affected by recalling a

negative past self, or (c) self-esteem was similarly strongly affected by recalling a

positive and a negative past self. Following the procedure described in Study 3, the

results of this analysis mirror the results obtained in Study 3, such that there was no

significant interaction between chronic mood and valence of the recalled self as

predictors of post-manipulation self-esteem in the replication condition, $\beta = -.06$, $p =$

.53. Furthermore, this analysis revealed a significant relationship between chronic

mood and post-manipulation self-esteem, after controlling for pre-manipulation self-

esteem, $\beta = .35$, $p = .001$. This evidence directly supports the hypothesis that the recall

of valenced past selves increases the self-esteem of happy people relative to sad people

and that self-esteem is similarly strongly affected by recalling a positive and a negative

past self. As such, Study 4 completely replicated the findings of Studies 1 to 3.

Next, we tested the unique hypotheses of Study 4. To check whether the

manipulation of perceived temporal distance was effective, we conducted an ANOVA

with the temporal distance manipulation (short vs. long) as the independent variable

and perceived temporal distance as the dependent variable. As expected, participants in

the short temporal distance condition perceived the time between the recalled and the

current self as significantly shorter than did participants in the long temporal distance

condition, $F(1, 177) = 4.15$, $p = .04$. Next, we formed an intervention condition on the

basis of chronic mood (above or below the median) and the temporal distance condition

(short or long temporal distance): Sad (happy) participants, who where either in the

short (long) temporal distance and positive recall condition or in the long (short)

temporal distance and negative recall condition were treated as a single intervention

condition. As shown earlier, the control condition replicated the effect of valence of

recalled self x chronic mood on perceived temporal distance. We expected that this

effect would *not* replicate in the intervention condition. Thus, we expected a significant

three-way interaction between valence of the recalled self (positive vs. negative),

chronic mood (happy vs. sad;, and intervention (intervention vs. control) on perceived

temporal distance.

Consistent with predictions, the results of a multiple regression analysis showed

a significant three-way interaction among past self, chronic mood, and intervention on

perceived temporal distance, $\beta = -.40$, $p = .009$. This three-way interaction was

decomposed by examining the results in each experimental condition. As shown above,

chronic mood moderated the temporal distance bias in the control condition. In

contrast, there was no significant interaction between chronic mood and valence of the

recalled self in the intervention condition, $\beta = -.04$, $p = .78$. This pattern indicates that the cognitive intervention undermined naturally occurring differences in perceptions of temporal distance by chronically happy and sad people. In line with this finding, the effect of chronic mood on post-manipulation self-esteem was smaller in the intervention condition than in the control condition, $\beta = -.17$, $p = .055$.

Extending the findings of Studies 1 to 3, we successfully manipulated perceived temporal distance by differentially framing the five years of recall (cf. Broemer et al., 2008; Wilson & Ross, 2001). This manipulation undermined the naturally occurring temporal distance bias shown by chronically happy and sad people. The possibility of undermining the temporal distance bias by means of *cognitive* interventions, such as the divergent framing of the time between the recalled and the current self, provides further support for the argument that the temporal distance bias is partly caused by cognitive factors.

## 2.7    Analyses Across Studies

In all four studies, perceived mood congruence between a recalled self and the current self was a crucial determinant of perceived temporal distance. However as noted in the introduction, it is important to further consider *why* perceived mood congruence possesses this central role in the temporal distance bias. Specifically, it is useful to compare two possible processes that have been suggested in the literature.

First, mental representations become more abstract with the passage of time (cf. Semin & Smith, 1999; Trope & Liberman, 2003). Thus, one heuristic to judge whether an event is perceived as temporally recent or distant is to rely on the vividness of the recalled event and the ease with which the event is retrieved from memory. A memory

is perceived as temporally more recent if it is easy to recall (e.g., Sanna & Schwarz, 2003, 2004; for a review, see Schwarz, 2004) or vividly retrieved from memory (e.g., Brown et al., 1985). Ease of recall and vividness of retrieval can be influenced by retrieval factors (e.g., Brown et al., 1985). The retrieval factor that is relevant for our assumption is the mood-state-dependent retrieval hypothesis. This hypothesis assumes that the vividness of recall and ease of retrieval of positive events should be stronger for happy (versus sad) people, whereas vividness of recall and ease of retrieval of negative events should be stronger for sad (versus happy) people (e.g., Blaney, 1986; Bower, 1981; Kenealy, 1997). Therefore, happy people should perceive recalled positive selves as more recent than recalled negative selves and sad people should perceive recalled negative selves as more recent than recalled positive selves.

Second, affect should be a particularly relevant feature when it comes to valenced selves. This assumption is in line with the central role of the hedonic principle in people's lives (Freud, 1920; Kahneman et al., 1999; Sedikides & Gregg, 2008). Further, this assumption is also in line with Schwarz and Clore's (1983) work on mood-as-information. When recalling *valenced* selves, affective overlap (i.e., mood congruence) may be an especially relevant type of feature overlap (Schwarz & Bless, 2007; Stapel, 2007). Of importance, overlap between a recalled self and the current self has been assumed to foster feelings of personality continuity, which in turn has been hypothesized to increase the perception of temporal recency (cf. Beike & Niedenthal, 1998; Broemer et al., 2008). This may be a second explanation why affective overlap determined the perception of temporal distance in each study.

Although both explanations are theoretically sound, there are data suggesting that ease of retrieval and vividness of recall do not explain the role of mood congruence in the temporal distance bias. Specifically, Ross and Wilson (2002) found that ease of

retrieval did not account for the interactive effect of valence of the recalled self and self-esteem on perceived temporal distance. Nevertheless, either the ease/vividness of retrieval explanation or the feature overlap explanation may shed more light on the process that underlies the influence of perceived mood congruence on the temporal distance bias. Additionally, evidence for the operation of either one of these processes would further support our claim that the temporal distance bias is partly a cognitive bias, because both ease/vividness of recall as well as feature overlap are cognitive rather than motivational factors.

To investigate these issues, Studies 2 to 4 included additional measures of ease of retrieval, vividness of recall, and feature overlap between the recalled and the current self (see below). Previous studies showed that these constructs can be reliably assessed by means of self-report and that there are moderately strong intercorrelations between these constructs. Consistent with these previous studies, we found moderately strong positive relationships between ease of retrieval and vividness of recall, $.38 < $ all $rs < .60$, all $ps < .001$, and weak or no relationships between feature overlap and ease of retrieval as well as vividness of recall, $.02 < $ all $rs < .26$, $ns < $ all $ps < .001$.

### 2.7.1   Method

*Materials and Procedure*

The items assessing vividness of recall, ease of retrieval, and feature overlap between the recalled and the current self were administered together with the items assessing perceived temporal distance and perceived mood congruence in random order. Participants completed all items using the same response format as used to assess perceived mood congruence.

*Ease of retrieval.* The measure of ease of retrieval was modelled after the measure used by Schwarz et al. (1991). Ease of retrieval was assessed with two items: "The recall was pretty hard" (reverse scored) and "It was very easy for me to bring the recalled self to mind", $r_{mean} = .51, p = .001$.

*Vividness of recall.* Vividness of recall was also assessed with two items: "My memories of the recalled self were vague and fuzzy" (reverse scored) and "My memories of the former self were detailed", $r_{mean} = .65, p = .001$.

*Feature overlap.* The measure of feature overlap was modelled after the measure used by Brown et al. (1992). Feature overlap was again assessed with two items: "I do not share a lot of "features" with the person I was back then" (reverse scored) and "A lot of things are similar between nowadays and back then", $r = .48, p = .001$.

### 2.7.2 Results and Summary

To test for the unique relation between perceived mood congruence and (a) ease of recall, (b) vividness of recall, and (c) feature overlap, perceived mood congruence was regressed simultaneously on the latter three variables in Studies 2 to 4, individually. These regressions revealed no significant relations between ease of recall and perceived mood congruence, $-.15 < \beta s < .16$, all *ns*, and only one significant relation between vividness of recall and perceived mood congruence, all other $-.04 < \beta s < .19$, all *ns*. However, this significant relation was negative and thus at odds with the theoretical expectations, indicating that people who recall the past self vividly perceived low mood congruence between the recalled and the current self, $\beta = -.27, p = .005$. On the contrary, there were strong relations between perceived feature overlap

and perceived mood congruence in all three studies. All of these relations were in the

theoretically expected direction, indicating that people who perceive high mood

congruence between the recalled and the current self also perceived high feature

overlap, all $.48 < \beta s < .62$, ps $< .001$.

In line with the findings by Ross and Wilson (2002), these results suggest that

the central role of perceived mood congruence for the temporal distance bias is unlikely

to be due to ease or vividness of retrieval. Indeed, the findings suggest that perceived

mood congruence is an especially relevant type of perceived feature overlap when it

comes to recalling past selves. Perceived feature overlap should affect perceived

temporal distance because feature overlap fosters feelings of personality continuity (cf.

Beike & Niedenthal, 1998; Broemer et al., 2008). In line with this argument, both

perceived mood congruence and perceived feature overlap were strongly and

consistently related to perceived temporal distance in all three studies, all $-.66 < \beta s < -$

$.48$, ps $< .001$ and all $-.64 < \beta s < -.42$, ps $< .001$, respectively.

It is still an open question whether perceived feature overlap is a stronger or a

weaker mediator (in comparison to perceived mood congruence) of the interaction

effect of valence of the recalled self and chronic mood on perceived temporal distance.

On the one hand, perceived feature overlap is a broader construct than perceived mood

congruence, with perceived mood congruence only being one feature of many that may

determine assimilation and contrast effects. Thus, one might expect that perceived

feature overlap is a stronger mediator than perceived mood congruence. On the other

hand, perceived mood congruence might be perceived as the only relevant feature when

it comes to valenced selves (cf. Stapel & Marx, 2007). Thus, perceived mood

congruence might be the more precise and therefore the stronger moderator of the

interaction effect of valence of the recalled self and chronic mood on perceived

temporal distance. To test these two possibilities, we compared (a) the decrease of the interaction effect of valence of the recalled self and chronic mood on perceived feature overlap when perceived mood congruence is controlled with (b) the decrease of the interaction effect of valence of the recalled self and chronic mood on perceived mood congruence when perceived feature overlap is controlled. When controlling for mood congruence, the interaction effect of valence of the recalled self and chronic mood on perceived feature overlap was decreased from significance, $.36 < \beta s < .49$, $ps < .02$, to non-significance, $.04 < \beta s < .19$, $.07 < ps < .80$, in all three cases. When controlling for perceived feature overlap, the interaction effect of valence of the recalled self and chronic mood on perceived mood congruence was only very slightly decreased from very high levels of significance, $.47 < \beta s < .65$, $ps < .001$, to still high levels of significance $.29 < \beta s < .46$, $ps < .01$, in all three cases. In line with this finding, the interaction effect of valence of the recalled self and chronic mood on perceived temporal distance, $-.68 < \beta s < -.51$, $ps < .001$, was more strongly decreased when controlling for perceived mood congruence, $-.39 < \beta s < -.27$, $.004 < ps < .10$, than when controlling for perceived feature overlap, $-.49 < \beta s < -.32$, $ps < .008$.

The coherent pattern of results across studies provides strong support for the notion that perceived mood congruence is a *specific and especially relevant type of feature overlap* when it comes to valenced recalled and current selves. Rather than domain unspecific feature overlap in general, it is feature overlap in the domain of mood (i.e., mood congruence) that determines the temporal distance bias. This finding is consistent with recent research by Stapel and Marx (2007), who advocated the view that some features play a more important role in determining the occurrence of assimilation and contrast effects than other features. At the same time, consistent with evidence reported by Ross and Wilson (2002), our data provide no support for the

assumption that perceived mood congruence is central because it relates to ease and vividness of recall. The finding that perceived mood congruence as a specific feature overlap is a better moderator of the temporal distance bias than domain unspecific perceived feature overlap more generally is consistent with the central role of the hedonic principle in the human psyche (Freud, 1920; Kahneman et al., 1999; Sedikides & Gregg, 2008) and the relevance of mood in guiding more general judgments (Schwarz & Clore, 1983; Sedikides & Green, 2001). Of importance, the current studies are the first to provide empirical evidence that feature overlap (in the form of perceived mood congruence) is related to perceived temporal distance.

## 2.8    Discussion

In this chapter, my collaborators and I proposed and supported the provocative hypothesis that thinking about a positive past self leads to a relative increase in self-esteem for *chronically happy people*, but to a relative decrease in self-esteem for *chronically sad people*. Probably even more counterintuitive, the research described in the chapter supported the hypothesis that thinking about a negative past self leads to a relative decrease in self-esteem for *chronically sad people*, but to a relative increase in self-esteem for *chronically happy people*. These results were expected on the basis of our Mood Congruence Model (MCM) of Temporal Comparison (see Figure 2.1). As predicted by the MCM, chronically happy people felt mood congruence (incongruence) between a recalled positive (negative) self and the current self, eliciting feelings of temporal recency (distance), and thus chronically happy people showed an assimilation (contrast) effect in regard to the recalled positive (negative) self, as evidenced by a relative increase in self-esteem. On the other hand, chronically sad people felt mood

incongruence (congruence) between a recalled positive (negative) self and the current

self, eliciting feelings of temporal distance (recency), and thus chronically sad people

showed a contrast (assimilation) effect in regard to the recalled positive (negative) self,

as evidenced by a relative decrease in self-esteem. Together then, the results provided

direct evidence that psychological health, in the form of chronic mood, exerts effects on

self-esteem, when it comes to recalling valenced selves. This is important since

research investigating effects of psychological health on self-esteem is sparse

(Baumeister et al., 2003). Furthermore, the research in this chapter differs from past

research in that it has a particularly strong focus on the process that underlies these

effects (see Figure 2.1).

Across four studies, the data were consistent with predictions in all but one

point: In Studies 1 to 3, sad people did not significantly differ in their perception of

temporal distance when recalling a positive or a negative past self. At first glance, this

result is at odds with the MCM. The model predicts that sad people should perceive a

recalled negative self as temporally more recent than a recalled positive self because of

the mood congruence (incongruence) between the recalled negative (positive) self and

the current self.

However, two lines of argument support the model's rationale. First, the

literature on chronic mood provides an explanation for our findings. In non-clinical

samples, the mean level of chronic mood is typically positive and not neutral. In fact,

the mean mood of participants in Studies 1 to 3 was almost one standard deviation more

positive than neutral mood. Thus, it is not surprising that there was no significant effect

when testing this contrast at one standard deviation below the mean of chronic mood.

At one standard deviation below the mean of chronic mood, we do not capture really

sad mood but neutral mood. In fact, when the same contrasts were tested at two

standard deviations below the mean, the contrasts were significant in all four studies,

$.44 <$ all $\beta$s $< .82$, all $p$s $< .05$. However, contrasts two standard deviations above or

below means must generally be interpreted cautiously, because such analyses consider

relatively few participants. This small number of participants may obscure the

possibility that there could be some curvilinearity underlying this particular contrast.

Thus, an important addition to the current research would test the MCM using a

clinically depressed sample. Second, increasing the power of our analysis by taking the

participants of all four studies together was sufficient to show a significant contrast for

individuals already at one standard deviation below the mean of chronic mood, $\beta(425)$

$= .18, p = .005$. These data completely supports the MCM.

The MCM carries several theoretical and practical implications. First, our

evidence that chronic mood can influence whether thinking about one's valenced past

relatively increases or decreases self-esteem may be relevant to consider in other lines

of research that deal with the recall of valenced selves (e.g., nostalgia, experimental

mood manipulations, and reminiscence therapy). Second, this research showed that

cognitive factors underlying temporal distance perceptions are not solely contextual in

nature (e.g., Broemer et al., 2008; Strack et al., 1985; for a review see Schwarz &

Strack, 1999) but that individual difference variables can also determine temporal

distance perceptions through cognitive mechanisms. Third, the research showed that

perceiving a positive past self as temporally closer than a negative past self (i.e., the

temporal distance bias; Ross & Wilson, 2002) is not solely due to the *motivation* to

self-enhance but also due to the *cognitive* effect that mood congruent selves are

perceived as temporally closer than mood incongruent selves.

An interesting issue is how people arrive at mood congruence judgments. The

four studies in this chapter have shown that perceived mood congruence is central for

the temporal distance bias as well as for the occurrence of assimilation and contrast

effects in respect to recalled selves. The judgment of congruence (i.e., similarity,

overlap) of two entities by definition requires knowledge about both of these entities.

Then, in the next step, these two entities are compared, and this finally results in a

judgment of congruence. There is little question that people can judge their current

mood. However, how do people judge their past mood? It is unlikely that people

possess a complete mental record of their mood at all time-points from their personal

past. Such knowledge, however, would be necessary in order to make an error free

judgment of mood congruence between a recalled and the current self. Instead, it is

more likely to assume that people use self-perception strategies (Bem, 1967, 1972) in

order to infer their past mood from their behaviour or from their salient traits at the time

of the recalled self. That is, the information that is rendered salient concerning the

recalled time should have a strong impact on whether one's past mood is judged as

positive or negative. Thus, selectively recalling positive episodes or traits from one's

personal past should lead to the conclusion that one's mood at the recalled time was

positive, whereas selectively recalling negative episodes or traits from one's personal

past should lead to the conclusion that one's mood at the recalled time was negative.

Then, the fit between the mood judgment of one's past self and the mood judgment of

one's current self should be evaluated. High fit should result in high mood congruence,

whereas low fit should result in low mood congruence.

In fact, the results across Studies 2 through 4 show that this process seems to

underlie the perceived mood congruence judgments made by our participants.

Specifically, these studies show that happy (sad) people indicate higher mood

congruence between their current self and their past self five years ago after they have

recalled a positive (negative) past self than after they have recalled a negative (positive)

past self. Thus, participants' perception of their past mood varied as a function of recall and thus participants' perception of their past mood does *not* reflect reality, but is *reconstructed based on the valence of the recalled information*. Note that this finding does not question the importance of perceived mood congruence as an influential psychological variable. The results demonstrate the importance of perceived mood congruence not only for the temporal distance bias but also for the occurrence of assimilation and contrast effects in respect to recalled positive and negative selves.

There is potential for these findings and the MCM to serve as the foundation for a variety of further empirical work. One interesting strand of future research can be based on the observation that recalling any valenced self increases self-esteem for happy people, but decreases self-esteem for sad people. Thus, nostalgia may increase self-esteem of chronically happy people, but may decrease self-esteem for sad people. Interestingly, Wildschut et al. (2006; see also Zhou, Sedikides, Wildschut, Lei, & Gao, 2008) did not only find that nostalgia increases self-esteem, but also that one trigger of nostalgia is negative affect and loneliness (albeit state rather than chronic affect and loneliness). Thus, these findings suggest that there may be something specific to the recall of past selves in a nostalgic fashion that circumvents contrast effects. Future research should closely examine the difference between the nature of nostalgic and non-nostalgic recalls of past selves. If it is possible to identify features of nostalgia that prevent contrast (e.g., a strong sense of self-continuity; cf. Sedikides, Wildschut, Gaertner, Routledge, & Arndt, 2008), one would possess a powerful tool to strengthen interventions that attempt to increase psychological functioning by recalling positive past selves.

Second, past research has demonstrated that thinking about positive attachment experiences with our parents in childhood (Mikulincer et al., 2001a) or thinking about

positive past attachment experiences with close people in general (Mikulincer et al.,

2003) increases attachment security. Given that attachment experiences are strongly

related to affect (Mikulincer, Hirschberger, Nachmias, & Gillath, 2001b) the MCM

might be useful for better understanding attachment processes. In particular,

Attachment Theory assumes that asking people to recall secure attachment episodes

from their past necessarily increases attachment security (Bowlby, 1969, 1973, 1980).

However, following the MCM it is plausible that chronically sad people contrast

themselves away from recalled secure attachment episodes. As such, thinking about

positive personal attachment episodes may provide a safe haven (cf. Bowlby, 1969,

1973, 1980) for chronically happy people, but a rough sea for those people who are

badly in need of security – chronically sad people.

Finally, it needs to be acknowledged that the evidence provided here for a direct

causal effect of chronic mood on self-esteem within the realm of recalling valenced

selves is solely based on a 'mini-longitudinal' design. Specifically, chronic mood was

not manipulated but assessed. To be able to nevertheless make some causal statement,

we controlled for self-esteem at the time of the chronic mood assessment when testing

for the effect of chronic mood on post-manipulation self-esteem—i.e., a longitudinal

design with a time frame as long as the manipulation (approximately 10 minutes). This

methodological approach however allows the alternative explanation that some

covariate of chronic mood may have caused the effects we obtained. Another approach

to test for the causal effect of chronic mood is to manipulate chronic mood

experimentally. However, such an approach also comes with several disadvantages. For

once, to comfortably conclude that the mood-manipulation provides unequivocal

evidence for the present hypothesis, one needs to be certain that the mood manipulation

actually manipulates mood and nothing else—a certainty that is unfortunately not

always given (see Mikulincer et al., 2001b). More critically here, however, is that

manipulated mood-states may not be functionally identical to chronic mood states.

Within the realm of self-esteem research this non-equivalence has long been realized

(e.g., Brown & Dutton, 1995) and the finding that affect has a substantial genetic basis

(Neiss et al., in press) also renders the functional non-equivalence of manipulated and

chronic moods likely. Furthermore, in this research we were explicitly interested in

how *chronic personality characteristics* impact the effect of recalling valenced selves

on the present self. Together then, we see our approach as a necessary step in order to

test the MCM, but we wish to highlight that an important endeavour for future research

is to examine the possibility that manipulated mood-states are functionally similar to

chronic mood in their effect on self-esteem within the realm of recalling valenced

selves. Such research would complement the current approach and would buttress the

causal assumptions underlying the MCM.


## 2.9    Concluding Remarks

A lot of research has focused on how the current self shapes perceptions of

recalled selves (see Ross, 1989). In this chapter, four studies demonstrated that a

recalled self also shapes perceptions of the current self. Together, these results suggest

complex and multi-directional effects between a person's past self and present self.

These effects may be due to motivational as well as cognitive biases (for a more general

discussion between these biases see Miller & Ross, 1975). The current research shows

that the temporal distance bias (Ross & Wilson, 2002) is not solely due to the

motivation to self-enhance. Instead, cognitive factors play an important role in whether

a valenced self is perceived as temporally recent or distant. In turn, temporal distance

perceptions determined the occurrence of assimilation and contrast effects of the valence of the recalled self on current self-esteem. The Mood Congruence Model (MCM) of Temporal Comparison provides evidence that chronic personality characteristics are important to consider when predicting the effects on recalling past selves on the current self. In particular, the MCM suggests that chronic mood needs to be considered when making predictions on how recalling valenced selves affect the current self. In a broader sense, this model—and the research testing it—contributes to a better understanding of the relationship between self-esteem and psychological health. Whereas a lot of past research has focused on the effects of self-esteem on psychological health, the MCM-derived research suggests that psychological health can also affect self-esteem and it helps to understand the processes that underlie this effect.

# Chapter 3

## The Role of Belongingness in the Relationship
## Between Self-Esteem and Psychological Health

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## 3.1    Chapter Overview

Belongingness plays a primary role in the relationship between self-esteem and psychological health. A plethora of research has shown that people who possess a high belongingness status experience higher self-esteem. In turn, higher self-esteem leads to higher psychological health. However, past research has exclusively focused on individual differences in the perceived *amount* of belongingness. Drawing on humanistic psychology, the research described in this chapter tested whether people not only vary in the amount of belongingness they perceive to receive, but also in their perceptions of the extent to which their belongingness is *(un)conditional* on their general achievements. This research focus parallels recent research emphasizing the importance of contingent self-esteem over and above differences in the amount of self-esteem. Three studies revealed that (1) amount and unconditionality of belongingness are largely independent dimensions, (2) the amount and unconditionality of belongingness independently relate to psychological health, and (3) the amount of self-esteem mediates the relationship between amount of belongingness and psychological health, whereas contingent self-esteem mediates the relationship between

unconditionality of belongingness and psychological health. These results suggest a

belongingness-based explanation for the effect of contingent self-esteem on

psychological health and further support a belongingness-based explanation for the

effect of amount of self-esteem on psychological health.

## 3.2    Introduction

People feel a sense of belonging or social acceptance when they feel valued,

liked, and loved by other people (Baumeister & Leary, 1995). The need to belong has

been consistently listed to range among the most important psychological needs (Fiske,

2002; Sheldon et al., 2001). In their review of the belongingness literature, Baumeister

and Leary (1995) concluded that "belongingness can be almost as compelling a need as

food" (p. 498). The need to belong also has been postulated to play a role in people's

choices of social identities (Brewer, 1991; see also Ellemers et al., 2002). Further,

Maslow (1968) assigned belongingness a central role in his hierarchy of needs, and

self-determination theory (Deci & Ryan, 2000) assumes that relatedness needs are

among the three most important psychological needs. Impressive support for the central

role of belongingness in the human condition has recently been garnered by

neurological research: Social exclusion, the opposite of a high amount of

belongingness, has been found to activate the same neural pathways as does physical

pain (Eisenberger, Lieberman, & Williams, 2003).

Although there are considerable differences among different theories of

belongingness in their definition of the need to belong, they share at least one core

assumption: People who feel accepted, valued, liked, and loved by other people in

general are *psychologically healthier* than people who do not feel accepted, valued,

liked, and loved. The beneficial effect of felt belongingness has been demonstrated in a

vast amount of empirical research, using many different methodologies (for a review,

see Baumeister & Leary, 1995). This is of course not to say that there are no boundary

conditions to the effect of belongingness on psychological health. Baumeister and

Leary (1995) include in their definition of the need to belong, that belongingness is

only beneficial if it includes "affective concern for each other's welfare" (p.497).

Implicit in this statement is that belongingness to people who one does not care for

should not lead to better psychological health, and the same rational also applies to

belongingness to groups that one holds low regard for (e.g., Ellemers et al., 2002).

Most relevant to the current research, evidence has found a strong link between

a lack of close social bonds and unhappiness (e.g., Argyle, 1987; Freedman, 1978;

Leary, Koch, & Hechenbleikner, 2001; Myers, 1992). Deprivation from close others

and the prospective loss of important relationships are associated with feelings of

depression and anxiety (Leary, 1990; Leary, Cottrell, & Phillips, 2001; Leary &

Downs, 1995). Social exclusion is even likely to be the most common cause of anxiety

(Baumeister & Tice, 1990; see also Barden, Garber, Leiman, Ford, & Masters, 1985).

Further, the availability of social support reduces stress and increases subjective well-

being (Cohen & Wills, 1985; Goodenow, Reisine, & Grady, 1990; Hermann, Lucas, &

Friedrich, 2008; Manne & Zautra, 1989), and these effects appear to occur because of

the perception that other people value and care for the individual and value having

relationships with this individual (Leary, 2001, Stroebe & Stroebe, 1997). Thus, a large

amount of social psychological theory and research leaves little doubt that feelings of

belongingness are positively associated with psychological health.

### 3.2.1   Unconditional versus Conditional Belongingness

So far, research in personality and social psychology has almost exclusively

focused on the amount of belongingness experienced (i.e., on how much one feels

loved, accepted etc.) and is virtually mute to *qualitative* differences in belongingness.

By contrast, humanistic psychologists have claimed for a long time that belongingness-

related constructs vary not only in their amount, but also in their quality (e.g., Fromm,

1956; Rogers, 1951, 1961). Further, humanistic psychologists have proposed that these

qualitative differences in belongingness-related constructs affect psychological health

over and above differences in the amount of belongingness-related constructs.

For example, Erich Fromm (1956) distinguishes between motherly and fatherly

love. According to Fromm (1956, p. 31), motherly love "is a passive one. There is

nothing I have to do in order to be loved – mother's love is unconditional. All I have to

do is to *be* – to be her child. Mother's love is a bliss, is peace, it need not be acquired, it

need not be deserved." In contrast, fatherly love "is conditional love. Its principle is 'I

love you *because* you fulfil my expectations, because you do your duty, because you

are like me" (Fromm, 1956, p. 34). According to Fromm (1956, p. 33), fatherly love

"always [leaves] a fear that love could disappear. Furthermore, "'deserved' love easily

leaves a bitter feeling that one is not loved for oneself, that one is loved *only* because

one pleases, that one is, in the last analysis, not loved at all but used." Similarly,

Rogers (1951, 1956) argues that *unconditional* positive regard from the therapist

towards the client is essential for the therapeutic process. According to Rogers (1961),

unconditional positive regard from the therapist toward the client leads to a better

therapeutic outcome than does conditional positive regard.

Whereas Fromm (1956) focused on parental love towards the child and Rogers

(1951, 1961) focused on positive regard of the therapist towards the client, Baumeister

and Leary (1995) suggested that the unconditionality dimension may also play a vital

role in the more general concept of belongingness or social acceptance. (Baumeister

and Leary use the terms belongingness and social acceptance interchangeably.)

Surprisingly, however, the assertion that unconditionality of belongingness may play an

important role in the analyses of belongingness has not yet been tested empirically. The

current research attempts to fill this important gap.

### 3.2.2   The Current Research

The current research fulfilled three general aims. First, my collaborators and I

tested whether the distinction between conditional and unconditional love or positive

regard can be applied to the broader concept of belongingness towards other people in

general (Baumeister & Leary, 1995), rather than being specific to parental love and

positive regard from therapists towards their clients (cf. Fromm, 1956; Rogers, 1951,

1961). Intuition might lead a person to expect that the belongingness felt from

interactions with some people is experienced as unconditional (e.g., parents, romantic

partners), whereas the belongingness felt from interactions with other people is

experienced as conditional (e.g., colleagues, friends). Although such differences may

occur, they do not contradict the possibility that there can also be individual differences

in perceptions of belongingness experienced across individuals.  Hermann et al. (2008)

have shown that people's beliefs about the extent to which they are valued and liked by

divergent others (e.g., friends, boss, teachers, parents of friends, neighbours, co-

workers, and general others) are highly intercorrelated and load on a single factor.  In

other words, people who believe that they are valued by their friends also believe that

they are valued by their bosses, teachers, and other significant others. This finding

suggests that perceptions of belongingness cohere across other people in general, making it feasible to test whether the amount of belongingness received from other people in general can be distinguished from the perceived unconditionality of this belongingness experienced from them. An advantage of this approach is that it focuses on the same level of analysis as the need to belong (Leary, Kelly, Cottrell, & Schreindorfer, 2004) and global self-esteem (Rosenberg, 1979, 1981; Brown, 1998).

The second aim was to test the assumption that unconditionality of belongingness relates to psychological health independent of amount of belongingness (cf. Baumeister & Leary, 1995). Independent relations of the unconditionality dimension on psychological health have been documented in clinical research. Specifically, Rogers (1951, 1961) asserted that independent of the treatment method employed by therapists, the quality of regard the therapists had for their clients affected the therapeutic success. Therapists who possessed unconditional positive regard toward their clients achieved a stronger increase in psychological health in the client than did therapists who possessed conditional positive regard. Similarly, Fromm (1956) argued that motherly (i.e., unconditional) love from the parents should instil higher psychological health in their children than fatherly (i.e., conditional) love does. Within the endeavour to examine the independent relations of the two belongingness dimensions with psychological health, we also aimed to test for the possibility that the two belongingness dimensions may interact in predicting psychological health. There is complete consensus among researchers concerned with the unconditionality dimension (e.g., Fromm, 1956; Rogers, 1951, 1961; see also Baumeister & Leary, 1995) that the combination of a high amount and high unconditionality of belongingness should relate to psychological health most positively. However, it is theoretically more difficult to predict the relative size of the relations between the remaining three cells of the two-

dimensional space spanned by the amount and unconditionality of belongingness dimension. Fromm (1956) suggested that a lack of fatherly love (low amount and low unconditionality of belongingness) is *less* harmful to the individual than a lack of motherly love (low amount and high unconditionality of belongingness), because an individual who lacks fatherly love can at least maintain the hope to receive love in the future—given that she believes to be better able to live up to her parents expectations in the future. On the contrary, however, Fromm (1956) suggested that a lack of motherly love does not even allow the individual to be hopeful that she may receive love from their parents in the future, because the individual can take no action to increase the love that she receives. In other words, Fromm's reasoning suggests an interaction between amount and unconditionality of belongingness. However, it is theoretically similarly sound to expect two main effects and no interaction. This latter pattern would predict that the combination of low amount and low unconditionality of belongingness is *more* harmful to the individual than the combination of low amount and high unconditionality of belongingness. The reason why such a prediction can be sensibly made is straight forward. Specifically, individuals with a combination of low amount and low unconditionality of belongingness may perceive themselves not only as being unloved but also as a failure in the endeavour to achieve belongingness. Individuals with a combination of low amount and low unconditionality of belongingness, however, have no reason to blame themselves for not being loved by others and thus may feel less distressed than individuals with a combination of low amount and low unconditionality of belongingness. Together then, we had no specific hypothesis regarding whether the two belongingness dimensions would interact in predicting psychological health or not. Nonetheless, we wished to examine this interesting issue empirically.

For the purpose of this thesis, the first two goals are necessary steps in order to pave the way for testing the third and most important goal. Specifically, the third goal was to test the role of self-esteem in the relationship between amount and unconditionality of belongingness on the one hand and psychological health on the other hand. Several theories that link belongingness and psychological health ascribe a central role to self-esteem in this relationship. Many influential theories on the origins of self-esteem have argued that self-esteem is based on being accepted, valued, liked, and loved by other people. This idea is present in the classic writings of Cooley (1902), Horney (1937), James (1890), and Mead (1934), as well as in the more recent sociological literature (Felson, 1993) and contemporary social, developmental, and personality psychology (e.g., Harter, 1993a; Rosenberg, 1979, 1981; Shrauger & Schoeneman, 1979).

An important contemporary example of the perspective that self-esteem is determined by one's belongingness status is Sociometer Theory (Leary, 2006; Leary & Baumeister, 2000; Leary & Cox, 2007; Leary et al., 1995). According to this theory, self-esteem functions as a meter that monitors a person's belongingness status. High self-esteem indicates sufficient belongingness, whereas low self-esteem indicates insufficient belongingness. As such, self-esteem has no direct causal effects, but is an epiphenomenon caused by one's belongingness status.

Speaking for all these theories that connect self-esteem to belongingness, there is abundant evidence that the amount of belongingness is positively related to self-esteem (for a review, see Leary & Baumeister, 2000). To give some research examples, fluctuations in self-esteem can be traced back to changes in the belongingness status of a person (Coopersmith, 1967; Harter, 1993b). Experimental induction of rejection decreases self-esteem (Leary et al., 1995; Leary, Haupt, Stausser, & Chokel, 1998;

Nezlek, Kowalski, Leary, Blevins, & Holgate, 1997), recalling episodes of acceptance

elevates self-esteem (Gailliot & Baumeister, 2007), and people's emotional reactions to

ego threats are more extreme when others know of these threats (Leary, Barnes, &

Gabriel, 1986). In addition, lower self-esteem is experienced by children who receive

less acceptance from their peers (Harter, 1993a, 1993b; Harter, Whitesell, & Junkin,

1998) and parents (e.g., Garber, Robinson, & Valentiner, 1997; McCranie & Bass,

1984). Thus, it seems that the primary sources of self-esteem are interpersonal

(Fleming & Courtney, 1984; Harter, 1993a; Heatherton & Polivy, 1991; Koch &

Shepperd, 2008).

Moreover, self-esteem mediates the connection between belongingness and

psychological health. This pattern has been shown with correlational designs (e.g.,

Garber et al., 1997; Grills & Ollendick, 2002; Symister & Friend, 2003; for a review,

see DuBois & Tevendale, 1999) and longitudinal designs (DuBois, Burk-Braxton,

Swenson, Tevendale, Lockerd, & Moran, 2002). This pattern is also consistent with

Sociometer Theory (Leary, 2006; Leary & Baumeister, 2000; Leary & Cox, 2007;

Leary et al., 1995) because the amount of self-esteem should be a more precise

indicator of one's belongingness status than actual self-reports of belongingness. Thus,

the empirical relationship between self-esteem and psychological health should be

stronger than the empirical relationship between belongingness and psychological

health.

Prior research has not explored the link between self-esteem and the

unconditionality of belongingness or the role of self-esteem in the relationship between

the unconditionality of belongingness and psychological health. Rogers (1961)

suggested that unconditional positive regard from the therapist towards the client exerts

its positive effect on psychological health via the implementation of "unconditional

self-worth" in the client. In Rogers's (1961) words, "I find that the more acceptance

and liking I feel toward this individual, the more I will be creating a relationship which

he can use. By acceptance I mean a warm regard for him as a person of *unconditional*

*self-worth* – of value no matter what his condition, his behaviour, or his feelings" (p.

34; italics added). This quality of self-esteem resembles the more recent concept of

(global) contingent self-esteem (Deci & Ryan, 1995; Kernis, 2000, 2003; Kernis &

Goldman, 2003, 2006; Kernis & Paradise, 2002). Recent studies have shown that

contingent self-esteem exerts effects on psychological health over and above effects of

the amount of self-esteem (Kernis, 2008; Kernis et al., 2005; as cited in Kernis &

Goldman, 2006). Extending this research, we tested whether the effect of

unconditionality of belongingness on psychological health is mediated by contingent

self-esteem.

Figure 1 summarizes our predictions in one model linking (a) amount of

belongingness, (b) unconditionality of belongingness, (c) amount of self-esteem, (d)

global contingent self-esteem, and (e) psychological health. Findings in support of this

model may be helpful for Sociometer Theory (Leary, 2006; Leary & Baumeister, 2000;

Leary & Cox, 2007; Leary et al., 1995). As it stands, Sociometer Theory provides an

elegant explanation of how a person's amount of self-esteem varies, but Sociometer

Theory has been silent on the function of contingent self-esteem. It is vital to address

the function of contingent self-esteem, because the latest developments in self-esteem

research have increasingly highlighted the importance of contingent self-esteem (e.g.,

Kernis et al., 2005; as cited in Kernis & Goldman, 2006; Kernis, Paradise, & Goldman,

1999; Neighbors, Larimer, Geisner, & Knee, 2004; Patrick, Neighbors, & Knee, 2004).

By introducing the dimension of unconditionality into the belongingness framework,

we hope to suggest a way how Sociometer Theory may integrate contingent self-

esteem. This integration would be crucial to the understanding of the relationship

between self-esteem and psychological health, because it would not only suggest a

belongingness-based explanation for the effects of amount of self-esteem on

psychological health, but it would also suggest a belongingness-based explanation for

the effects of conditional self-esteem on psychological health.

*Figure 3.1.* The Unconditional Belongingness Model of Self-Esteem and Psychological

Health
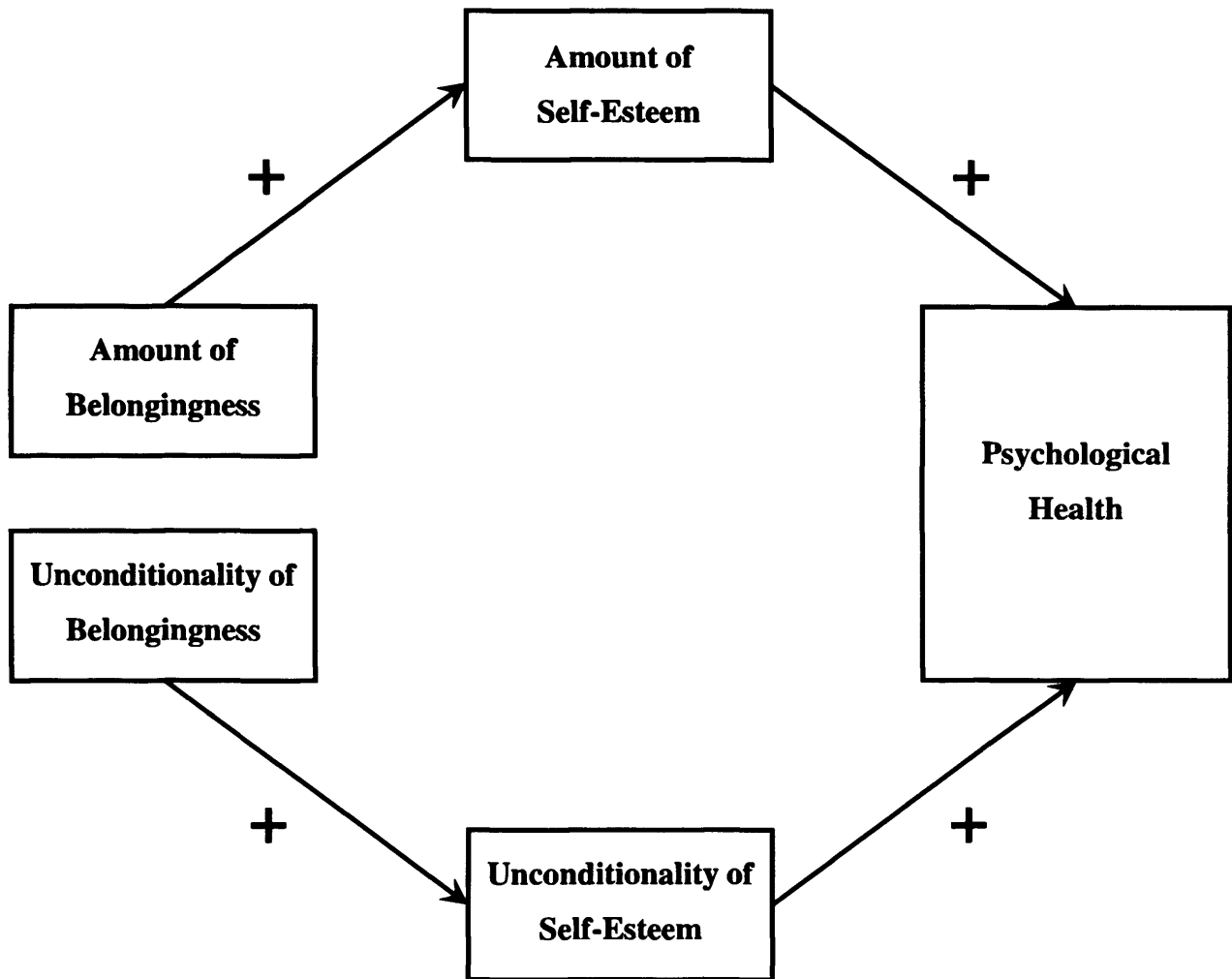
## 3.3    Study 5

Study 5 provided an imperative first step toward showing that people do not only differ in the amount of felt belongingness, but also in the degree to which belongingness is perceived as unconditional versus conditional. To this end, this study was used to develop and test a pool of items designed to assess either the amount or the conditionality of belongingness. Exploratory and confirmatory factor analyses were used to confirm that this measure subsumes two largely independent factors, with one tapping the amount of belongingness and the other one tapping the unconditionality of belongingness.

To gain some indicators of convergent and discriminant validity, this study also tested whether two other indicators of amount of belongingness, loneliness and perceived social support, relate to our measure of amount of belongingness, but not to our measure of unconditionality of belongingness. It was more difficult to choose measures that would be expected to provide support for the convergent validity of the unconditionality (rather than amount) of belongingness, because there is no validated scale of a related construct. However, several researchers have claimed that the unconditionality of belongingness should be negatively related to power and achievement motivation, because power and achievement motives are important means to achieve conditional belongingness (Morgenthau, 1962; see also Leary & Baumeister, 1995). In a similar vein, Schimel, Arndt, Pyszczynski, and Greenberg (2001, p. 50) asked: "If people are unconditionally loved in all domains of life, would they still be as driven to succeed? Would Thomas Edison, John D. Rockefeller, and Bill Gates have achieved as much as they did?" (see Fromm, 1956, for a similar view). Yet, there is also some indirect support for the hypothesis that amount of belongingness is positively

associated with power and achievement motivation. Sedikides, Rudich, Gregg, Kumashiro, and Rosbult (2004) found positive relations between amount of belongingness and narcissism, and narcissists are known to be strongly power and achievement motivated (e.g., Carroll, 1987; Raskin & Novacek, 1991). Furthermore, Morgenthau (1962; see also Leary & Baumeister, 1995) argued that the expression of power and achievement motivation often leads to social acceptance. Thus, we expected that the unconditionality of belongingness would predict lower power and achievement motivation, while the amount of belongingness would predict higher power and achievement motivation.

Finally, this study tested whether both dimensions are unrelated to impression management (Paulhus, 1991). Dependence of any measure with impression management means that the measure is contaminated by strivings to appear socially desirable and, hence, the scores of this measure cannot be trusted (e.g., Farnham et al., 1999). A second and distinct response bias is self-deceptive enhancement. This bias is defined as any positively biased response that the participant believes to be true (Paulhus, 1991). Paulhus (1991) argues that self-deceptive enhancement can be a valid part of a given construct. For example, self-esteem is positively associated with self-deceptive enhancement (e.g., Paulhus, 1991; Raskin, Novacek, & Hogan, 1991). Thus, relations to self-deceptive enhancement only become problematic if these relations are so high that the two constructs become indistinguishable. Testing that neither amount nor unconditionality of belongingness are indistinguishable from self-deceptive enhancement is important, because one may argue that the coherence among belongingness perceptions across different groups and persons (see Hermann et al., 2008) may actually date back to self-deceptive enhancement, because belonging to

others is perceived as important in virtually all cultures (Sedikides, Gaertner, & Vevea, 2005).

### 3.3.1 Method

*Participants*

591 participants (466 women, 122 men, and 3 unknown) completed this online-study (www.online-studies.org). The study was advertised on John Krantz's web portal for online-studies (http://psych.hanover.edu/research/exponnet.html). The mean age of participants was 22.93 years ($SD$ = 8.01). The vast majority of participants were from the USA (92%).

*Materials and Procedure*

After consenting to participate, participants completed a series of demographic items. Next, participants completed 20 candidate items for our two-dimensional Belongingness Scale. After that, about a third of the participants completed the loneliness scale, another third completed the perceived social support, power motivation, and achievement motivation scales, and the final third completed the scales assessing impression management and self-deceptive enhancement. At the end, participants were thanked for their participation and presented a debriefing sheet. All measures used in this study are described below.

*Belongingness.* Based on available definitions of amount and unconditionality of belongingness (Baumeister & Leary, 1995; Fromm, 1956; Rogers, 1951, 1961) we constructed 10 candidate items for the Amount of Belongingness subscale and 10 candidate items for the Unconditionality of Belongingness subscale. All candidate items of the Belongingness Scale are listed in Table 3.1. Participants first completed the

10 candidate items for the Amount of Belongingness subscale and then, on a separate

page, the 10 candidate items for the Unconditionality of Belongingness subscale.

Participants responded to each item of both subscales using a 7-point rating-scale

ranging from 1 (*does not apply at all*) to 7 (*applies completely*).

The candidate items of the Amount of Belongingness subscale were introduced

with one sentence: "The 10 items below concern your beliefs about what other people

in general think about you." The instructions for the candidate items of the

Unconditionality of Belongingness subscale were introduced with one brief paragraph:

"People vary tremendously in their understanding of the concepts of love, value,

acceptance, and liking. That is, people differ in their opinions and beliefs about

what these concepts actually mean. The 10 items below concern your

understanding of just these concepts. Please keep in mind that there are no right

or wrong answers to any of the statements below. Please complete the following

items by indicating how YOU UNDERSTOOD AND CONCEPTUALIZED

LOVE, VALUE, ACCEPTANCE, AND LIKING IN THE PREVIOUS

SCALE."

*Loneliness.* The UCLA Loneliness Scale (Russell, 1996) contains 20 items.

Example items are "How often do you feel alone?" and "How often do you feel close to

people?" (reverse-scored). Participants responded to each item using a 4-point scale

ranging from 1 (*never*) to 4 (*always*) ($\alpha = .94$).

Table 3.1

*Candidate Items for the Belongingness Scale (BS) with Factor Loadings of an Exploratory Factor Analysis*

| | Factors | |
| Candidate Item | Amount | Uncond. |
| --- | --- | --- |
| In general, people love and value me. | .72 | .13 |
| I feel accepted and liked. | .85* | .12 |
| Other people believe that I am a great person. | .80* | .03 |
| I do not think that other people like and value me. (R) | .65* | .12 |
| Generally, people think negatively about me. (R) | .60 | .43 |
| I believe that I am widely accepted and liked by other people. | .82* | .02 |
| In general, I think that people hold me in high regard. | .76* | .09 |
| Generally, I have the feeling that I am not loved and valued by other people. (R) | .56 | .33 |
| People do not like or accept me. (R) | .61 | .31 |
| I am sure that people generally have negative attitudes about me. (R) | .51 | .48 |

| | | |
|---|---|---|
| I believe that love and value from other people depends on my achievements and accomplishments. (R) | .01 | .74* |
| Acceptance and love from other people is independent of my personal qualities. | .15 | .01 |
| I am only accepted by others when I perform well. (R) | .31 | .65 |
| My successes and failures determine whether I am loved or not. (R) | .30 | .75 |
| Being accepted and liked has nothing to do with my skills and abilities. | .00 | .65* |
| I feel liked and valued only if I can live up to other people's expectations. (R) | .38 | .61 |
| Whether I am loved and accepted depends on the contributions and qualities I can offer. (R) | .28 | .67 |
| I do not think that my achievements and accomplishments account for whether I am liked and valued. | .15 | .75* |
| Love and value from others does not depend on whether I perform well or not. | .07 | .76* |
| What I can contribute and achieve does not determine whether other people love and accept me. | .11 | .63* |

Note. * = item selected for respective subscale, (R) = reverse-scored item

*Perceived social support.* The Love-Esteem Dimension of the Revised Kaplan

Scale (Turner, 1992) utilizes a story-identification technique composed of six sets of

vignettes. Each vignette consists of three statements about a different fictitious person.

Each statement concerns the social support the fictitious person receives from other

people in general. Participants have to indicate which of the three fictitious persons

receives social support similar to the social support received by the participant himself

or herself. In the original version of the scale, all target persons were male. Because

many of the participants in our participant pool were women, we changed the names of

the target persons in half of the vignettes from male to female. An example vignette is:

"Helen: People rarely let Helen know that she is wanted. She does not really make a

difference to them and they are rarely concerned about her. She does not matter to

them." vs. "Monica: People sometimes let Monica know that she matters. Sometimes

they think that she makes a difference to them." vs. "Catherine: People constantly let

Catherine know that she is wanted. She really makes a difference to them. They are

concerned about her and she matters" ($\alpha = .86$).

*Power motivation.* Riketta's (2008) adaptation of the Need for Power Scale

(Schmidt & Frieze, 1997) contains 20 items. Example items are "I find satisfaction in

having influence over others" and "I would like doing something important where

people looked up to me." Participants responded to each item using a 7-point scale

ranging from 1 (*does not apply at all*) to 7 (*applies completely*) ($\alpha = .84$).

*Power values.* The Power Values subscale of the Schwartz Value Survey

(Schwartz, 1992) contains five items. Participants indicate the importance of five power

values (social power, authority, wealth, preserving public image, and social

recognition) as guiding principles in their lives. Participants responded to each item

using a 9-point scale ranging from -1 (*opposed to my values*) to 7 (*extremely important*)

($\alpha$ = .74).

*Achievement values.* The Achievement Values subscale of the Schwartz Value

Survey (Schwartz, 1992) contains five items. Participants indicate the importance of

five achievement values (ambitious, influential, successful, capable, and intelligent) as

guiding principles in their lives. Participants responded to each item using a 9-point

scale ranging from -1 (*opposed to my values*) to 7 (*extremely important*) ($\alpha$ = .80).

*Response style.* The Balanced Inventory of Desirable Responding (BIDR)

Version 6 – Form 40 (Paulhus, 1988) contains a 20-item Impression Management

subscale and a 20-item Self-Deceptive Enhancement subscale. Example items for the

Impression Management subscale are "I never cover up my mistakes" and "I sometimes

tell lies if I have to" (reverse-scored) ($\alpha$ = .89). Example items for the Self-Deceptive

Enhancement subscale are "I have not always been honest with myself" and "I rarely

appreciate criticism" (reverse-scored) ($\alpha$ = .88). Participants responded to each item

using a 7-point scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*).

Following Paulhus's (1988) recommendations, the frequency that a participant

responded with extreme values ("6" or "7", for reverse-scored items "1" or "2",

respectively) was used as a measure of response style for each subscale.

*3.3.2   Results and Summary*

*Exploratory Factor Analysis*

A third of the participants (*N* = 146) were randomly selected for the exploratory

factor analysis (EFA), using varimax rotation. Inspection of the scree-plot revealed two

factors. As shown in Table 1, all of the candidate items for the Amount of

Belongingness subscale loaded high on factor 1 (.50 < *FL* < . 86) and lower on factor 2

(.02 < *FL* < . 50). Also, nine of the ten candidate items for the Unconditionality of

Belongingness subscale loaded high on factor 2 (.60 < *FL* < . 77) and lower on factor 1

(.07 < *FL* < . 39). One candidate item for the Unconditionality of Belongingness

subscale loaded low on both factors (.00 < FL < .16). We decided to select those items

for the final Belongingness Scale that loaded > .60 on the respective factor, while

loading < .20 on the other factor. Further, we took into account that both subscales

should have the same number of reverse-scored items. Finally, we wanted a short scale

and thus decided to limit the number of items of the total scale to 10 (2 x 5 items).

The items selected for the final Belongingness Scale are marked in Table 1. In

line with the results of the exploratory factor analysis, the internal consistencies of the

two subscales were high ($\alpha_{Amount}$ = .86, $\alpha_{Unconditionality}$ = .82). Participants' mean score

on the Amount of Belongingness subscale (*M* = 5.45, *SD* = 1.00) was more than one

standard deviation above the theoretical midpoint of the scale, $t(152) = 17.94, p = .001$.

Consistent with past research, this result suggests that people perceive a high amount of

belongingness in general. Participants' mean score on the Unconditionality of

Belongingness subscale (*M* = 4.34, *SD* = 1.45) was also higher than the theoretical

midpoint of this scale, $t(152) = 2.89, p = .01$. However, the large standard deviation of

the Unconditionality of Belongingness subscale also indicates that people differ

considerably in their perception of the unconditionality of their belongingness status.

*Confirmatory Factor Analysis*

To provide further evidence for the existence and stability of the factor structure

that was obtained in the exploratory factor analysis, we conducted a confirmatory factor

analysis of responses to the 10 selected items among participants who had not been

included in the  exploratory factor analysis (*N* = 437). As expected, the confirmatory

factor analysis revealed that the proposed two-factor model fits the data well, $\chi^2(34)$ = 63.48; $CFI$ = .98; $RMSEA$ = .05; $CMIN$ = 83.07, and exhibited a significantly better fit than the one factor solution, $\chi^2_{Diff.}$ = 430.06, $p < .001$. The two factors correlated at $r$ = .23, $p < .01$. Furthermore, the internal consistencies of the two subscales were high ($\alpha_{Amount}$ = .88, $\alpha_{Unconditionality}$ = .76).

In line with the results obtained in the EFA sub-sample and past research, participants' mean score of the Amount of Belongingness subscale ($M$ = 5.26, $SD$ = 1.06) was more than one standard deviation above the theoretical midpoint of the scale, $t(436)$ = 24.83, $p$ = .001. This indicates that people perceive a high amount of belongingness in general. Participants' mean score of the Unconditionality of Belongingness subscale ($M$ = 4.48, $SD$ = 1.26) was also higher than the theoretical midpoint of this scale, $t(436)$ = 8.00, $p$ = .001. As in the EFA sub-sample, the large standard deviation of the Unconditionality of Belongingness subscale also indicates that people differ considerably in their perception of the unconditionality of their belongingness status.

### Convergent and Discriminant Validity

To provide evidence of convergent and discriminant validity for the dimensions of belongingness, we conducted two multiple regression analyses in which the amount and unconditionality of belongingness were entered as simultaneous predictors of perceived social support and loneliness. As expected, the amount of belongingness predicted higher amounts of social support and lower loneliness, $\beta$ = .63, $p < .001$, and $\beta$ = -.64, $p < .001$, respectively. Further, the unconditionality of belongingness was unrelated to perceived social support and loneliness, $\beta$ = .09, $ns$, and $\beta$ = -.08, $ns$, respectively.

In addition, we conducted two multiple regression analyses in which the amount

and unconditionality of belongingness were entered as simultaneous predictors of

power motivation, power values, and achievement values. As expected,

unconditionality of belongingness was negatively related to power motivation, power

values, and achievement values, $\beta$ = -.23, $p$ < .01, $\beta$ = -.28, $p$ < .001, and $\beta$ = -.23, $p$ <

.01, respectively. In contrast, amount of belongingness was positively related to power

motivation, power values, and achievement values, $\beta$ = .36, $p$ < .001, $\beta$ = .31, $p$ < .001,

and $\beta$ = .23, $p$ < .01, respectively.

Finally, the relations between the two dimensions of belongingness and

response style were examined using two multiple regression analyses, in which

impression management and self-deceptive enhancement were regressed on amount and

unconditionality of belongingness (entered simultaneously), while controlling for the

response style that did not function as the criterion variable in the respective analysis

(see also Paulhus, 1988). As expected, the results indicted that neither the amount nor

the unconditionality of belongingness was related to impression management, $\beta$ = -.03,

$ns$, and $\beta$ = .00, $ns$, respectively. Amount of belongingness was weakly but positively

related to self-deceptive enhancement, whereas unconditionality of belongingness was

unrelated to self-deceptive enhancement, $\beta$ = .08, $p$ < .01, and $\beta$ = .01, $ns$, respectively.

These results show that the measures of belongingness were not confounded by

strivings to fake good (impression management). Additionally, the finding that the

amount, but not the unconditionality of belongingness, was positively associated with

self-deceptive enhancement fits evidence that amount of self-esteem is positively

associated with self-deceptive enhancement (e.g., Paulhus, 1991; Raskin et al., 1991)

and that amount of self-esteem is an indicator of amount of belongingness (Leary &

Baumeister, 2000; Leary et al., 1995). Importantly, the modest relations between

amount of belongingness and self-deceptive enhancement and the null-relation between

unconditionality of belongingness and self-deceptive enhancement show that the

coherence in people's perceptions of their belongingness status across different groups

of people (e.g., friends, colleagues, family) cannot be attributed to self-deceptive

enhancement or impression management.

Overall, Study 5 provided an imperative first step toward demonstrating the

distinction between amount of belongingness and unconditionality of belongingness. At

the same time as showing that these dimensions are distinct and can be measured

reliably, the results supported the convergent and discriminant validity of both

dimensions. Nonetheless, the unconditionality dimension has been neglected in

empirical research on belongingness. The following studies test whether this

dimension plays a unique role in the maintenance of psychological health and self-

esteem.

## 3.4     Study 6

Drawing on humanistic psychology (Fromm, 1956; Rogers, 1951, 1961), Study

6 tested whether the amount of belongingness and the unconditionality of

belongingness show independent relations to psychological health. As noted in

Chapters 1 and 2, psychological health was examined in part because of arguments that

its importance in psychology is unparalleled (Ryan & Deci, 2001). Indeed, some have

even argued that the justification of our discipline is that it promises to contribute to

better psychological health (Kwan et al., 1997). More important, as described in the

introduction to this chapter, connections between self-esteem and psychological health

indirectly support the possibility that the amount of belongingness and unconditionality

of belongingness independently contribute to this variable.

It was a simple matter to examine the empirical associations between the two

dimensions of belongingness and psychological health, because participants merely

needed to complete self-report measures of all of the constructs. To make the

conclusions from this method more robust, the measures were administered in two

independent samples with different cultural backgrounds, using different measures of

psychological health. Sample 1 was obtained in the United Kingdom, using a measure

of depression as an indicator of psychological health. Sample 2 was obtained in

Germany using several diverse indicators of psychological health (e.g., chronic affect,

resilience).

### 3.4.1   Method

*Participants*

*Sample 1*. 195 Cardiff University undergraduate students (168 women, 19 men,

and 8 unknown), completed the study as part of their course requirements in two large

classroom settings on individual computers. The mean age of participants was 18.62

years ($SD$ = 1.38).

*Sample 2*. 81 University of Tübingen undergraduate students (71 women, 10

men), completed the study in small group settings on individual computers for a small

financial reward. The mean age of participants was 21.54 years ($SD$ = 2.47).

*Materials and Procedure*

After consenting to participate, participants completed a series of demographic

items. Next, participants completed the Belongingness Scale. In Sample 1, this

measure exhibited strong reliability ($\alpha_{Amount}$ = .87; $\alpha_{Unconditionality}$ = .84) and was

followed by a measure of depression (BDI-II), described below. In Sample 2, the

language of the study was German. After completing a German-language version of the

Belongingness Scale ($\alpha_{Amount}$ = .80; $\alpha_{Unconditionality}$ = .89), participants completed

measures of chronic affect, anxiety-depression, and resilience, in the order they are

described below.

*Depression.* The Beck Depression Inventory–II (BDI-II; Beck, Steer, & Brown,

1996) consists of 21 items. Each item represents a different marker of depression (e.g.,

"loss of energy", "crying", "suicidal thoughts or wishes"). Participants responded to

each item using an item specific 4-point scale that allowed indicating to what degree

the specific symptom of depression applies to them ($\alpha$ = .90). For each symptom,

participants can receive between 0 to 3 points with higher scores indicating more

depression. Thus, total BDI-II scores could theoretically vary between 0 and 63. The

mean score of depression in our sample was 10.57 ($SD$ = 8.20).

*Chronic affect.* The Chronic Affect Scale was closely modelled after Diener,

Smith, and Fujita (1995) and consisted of five positive emotions ("happy", "cheerful",

"enthusiastic", "self-assured", and "energetic") and five negative emotions ("unhappy",

"sad", "upset", "depressive", and "afraid"; all reverse-scored). Participants responded

to each item using a 7-point scale ranging from 1 (*never*) to 7 (*almost always*) ($\alpha$ = .89).

*Anxiety and depression.* The Hospital Anxiety and Depression Scale (Zigmond

& Snaith, 1983) consists of two 7-item subscales to assess anxiety ($\alpha$ = .84) and

depression ($\alpha$ = .77). Example items of the Anxiety subscale are "I feel tense or 'wound

up'", and "Worrying thoughts go through my mind". Example items of the Depression

subscale are "I still enjoy things I used to enjoy", and "I can laugh and see the funny

side of things". Participants responded to each item using a 4-point scale ranging from

1 (*never*) to 4 (*most of the time*).

**Resilience.** The Resilience Scale (Wagnild & Young, 1993) consists of 26 items.

Example items are "I have enough energy to do what I have to do", and "I am

resilient". Participants responded to each item using a 7-point scale ranging from 1

(*absolutely wrong*) to 7 (*absolutely right*) ($\alpha = .89$).

### 3.4.2 Results and Summary

To provide evidence that amount of belongingness and unconditionality of

belongingness both relate independently to psychological health and to examine

whether the two dimensions interact in predicting psychological health, the indicators

of psychological health were simultaneously regressed on amount of belongingness

(centred), unconditionality of belongingness (centred), and the interaction between the

latter two. Analyses of depression in Sample 1 revealed that the amount and

unconditionality of belongingness were both related to lower amounts of depression, $\beta$

$= -.40, p \le .001$, and $\beta = -.20, p \le .01$, respectively. No significant interaction effect

occurred, $\beta = .08, ns$.

Similar results were obtained in Sample 2. As expected, higher amounts of

belongingness and unconditionality of belongingness both predicted more positive

chronic affect ($\beta = .62, p \le .001, \beta = .23, p \le .01$, respectively), lower anxiety ($\beta = -.46$,

$p \le .001, \beta = -.24, p \le .05$, respectively), lower depression ($\beta = -.41, p \le .001, \beta = -.21$,

$p \le .05$, respectively), and higher resilience ($\beta = .49, p \le .001, \beta = .19, p \le .05$,

respectively). No significant interaction effect occurred on chronic affect, $\beta = -.15, ns$,

depression, $\beta = .17$, *ns*, and resilience, $\beta = -.01$, *ns*. However, there was a just

significant interaction effect on anxiety, $\beta = .18$, $p \leq .05$.

The regression analyses across Samples 1 and 2 provided consistent evidence

that amount and unconditionality of belongingness are independent predictors of

psychological health. Sample 2 replicated Sample 1 using different and broader

measures of psychological health in a different cultural setting, attesting to the

generalizability of our results. These findings are the first direct evidence for the

hypothesis derived from humanistic psychology (Fromm, 1956; Rogers, 1951, 1961)

that amount and unconditionality of belongingness are independent predictors of

psychological health. The results form a simple but powerful argument for the

importance of unconditionality of belongingness within research on social functioning

and well-being.

The exploration of an interaction between amount and unconditionality of

belongingness in predicting psychological health revealed that the two main-effects

hypothesis and no interaction hypothesis is more consistent with the data. In Sample 2,

one of the four candidate interactions to predict psychological health was significant.

The respective indicator of psychological health was anxiety. However, this effect was

weak, exactly on the boarder of significance, and did not replicate in Study 7 (see

below). Thus, although we wish to note that although future research may examine the

issue of interactions between the two belongingness dimensions more closely, the

current data is largely consistent with the two main-effects hypothesis. One fruitful

approach in subsequent research may be to examine the interaction between amount

and unconditionality of belongingness in samples with lower mean levels of amount of

belongingness. In our healthy-student samples, the amount of belongingness was

consistently about one standard deviation above the midpoint of the Amount of

Belongingness subscale. This is consistent with past research on other indicators of belongingness and self-esteem (e.g., Baumeister et al., 1996). Such high levels of amount of belongingness are likely to limit the chances to find an interaction, because such an interaction should be driven by people who perceive very low amounts of belongingness in combination with varying degrees of unconditionality (see above).

## 3.5     Study 7

The amount of self-esteem plays a central role in the relationship between the amount of belongingness and psychological health. For example, Sociometer Theory (Leary, 2006; Leary & Baumeister, 2000; Leary & Cox, 2007; Leary et al., 1995) suggests that the amount of self-esteem is a subjective indicator of the amount of belongingness of a person. This reasoning suggests that the relationship between the amount of belongingness and psychological health is mediated by the amount of self-esteem. Sociometer Theory's predictions concerning the empirical relationship between belongingness, amount of self-esteem, and psychological health are in line with a plethora of empirical research showing that the effect of the amount of belongingness on psychological health is mediated by a person's amount of self-esteem (DuBois et al., 2002; Garber et al., 1997; Grills & Ollendick, 2002; Wilkinson, 2004; Symister & Friend, 2003; for a review, see DuBois & Tevendale, 1999). The first aim of Study 7 was to replicate this pattern of results using the Amount of Belongingness subscale of our Belongingness Scale.

More importantly, the second aim of this study was to extend past theorizing and research by examining the role of self-esteem in the relationship between unconditionality of belongingness and psychological health. Based on Rogers' (1961)

speculation that the positive effect of unconditional positive regard on psychological

health unfolds itself via increased unconditional self-worth in the client, we

hypothesized that the effect of unconditionality of belongingness on psychological

health is mediated by global contingent self-esteem. In fact, global contingent self-

esteem – the degree to which self-esteem is contingent on one's general achievements

and accomplishments in life (Deci & Ryan, 1995; Kernis, 2003; Kernis & Paradise,

1999; Kernis & Goldman, 2006) – has recently been identified as an important facet of

self-esteem over and above the amount of self-esteem (e.g., Kernis et al., 2005; as cited

in Kernis & Goldman, 2006; Neighbors et al., 2004; Patrick et al., 2004). Thus, the

following studies are the first to consider contingent self-esteem in the context of

belongingness.

### 3.5.1   Method

*Participants*

   203 participants (164 women, 39 men) completed this online-study

(www.online-studies.org), which was advertised on John Krantz's web portal for

online-studies. The mean age of participants was 27.58 years ($SD = 12.14$). The vast

majority of participants were from the US (87%).

*Materials and Procedure*

   After consenting to participate, participants completed a series of demographic

items. Next, participants completed the Belongingness Scale, followed by scales

assessing amount of self-esteem, contingent self-esteem, and psychological health.

These measures were administered in the order they are listed below. Finally,

participants were thanked for their participation and debriefed. The Belongingness

Scale ($\alpha_{Amount}$ = .80; $\alpha_{Unconditionality}$ = .89) was the same as described in Study 5.

Psychological health was operationalized via anxiety ($\alpha$ = .82) and depression ($\alpha$ = .81)

using Hospital Anxiety and Depression Scale (see Study 6). The self-esteem measures

are described below.

*Amount of Self-Esteem.* The Self-Liking Self-Competence Scale—Revised

Version (Tafarodi & Swann, 2001) consists of 16 items. Example items are "I am very

comfortable with myself" and "I sometimes deal poorly with challenges" (reverse-

scored). Participants responded to each item using a 7-point scale ranging from 1 (*does*

*not apply at all*) to 7 (*applies completely*) ($\alpha$ = .93).

*Contingent Self-Esteem.* The Contingent Self-Esteem Scale (Kernis & Goldman,

2006) consists of 17 items. Example items are "An important measure of my worth is

how competently I perform" and "When I am successful at something, my feelings of

self-worth remain unaffected" (reverse-scored). Participants responded to the items

using a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*applies completely*) ($\alpha$

= .89).

### 3.5.2 Results and Summary

To replicate the results of Study 6, the indicator of psychological health

(anxiety-depression scores) was simultaneously regressed on amount of belongingness

(centred), unconditionality of belongingness (centred). Replicating the results of Study

6, amount and unconditionality of belongingness were independently related to lower

anxiety ($\beta$ = -.35, $p$ < .001, and $\beta$ = -.20, $p$ < .01, respectively) and lower depression ($\beta$

= -.33, $p$ < .001, and $\beta$ = -.22, $p$ < .001, respectively). No significant interaction effect

occurred, .01 < $\beta$ < .05, *ns*.

Using AMOS 6.0, we employed structural equation modelling with

simultaneous estimation of parameters to test our Unconditional Belongingness Model

of Self-Esteem and Psychological Health (see Figure 3.1). All variables were

represented as latent variables and we randomly divided the scale-items of the variables

in the model in three parcels for each variable. Further, we added disturbances to all

endogenous variables (i.e., amount of self-esteem, contingent self-esteem, and

psychological health). Given that past research consistently found relations between

amount of self-esteem and contingent self-esteem (e.g., Kernis, 2008), we led the

disturbances of these variables covary. We tested our model (see Figure 3.1) for anxiety

and for depression separately. We found that the data fit the model well for anxiety

($\chi^2/df$ = 1.54, $CFI$ = .98, $IFI$ = .98, $RMSEA$ = .05) as well as for depression ($\chi^2/df$ =

1.58, $CFI$ = .98, $IFI$ = .98, $RMSEA$ = .06) as the measure of psychological health.

Further, all paths of our model were highly significant for anxiety as the indicator of

psychological health, all $\beta$s ≥ |.25|, all $p$s < .01. However, when treating depression as

the indicator of psychological health, the path from contingent self-esteem to

depression was not significant, $\beta$ = .04, $ns$, albeit all other paths were highly significant.

Thus, the role of contingent self-esteem in our model appears to differ as a function of

how psychological health is operationalized. Specifically, although unconditionality of

belongingness repeatedly predicted depression independent of amount of belongingness

(see Study 6 and 7) the current study suggests that this effect is not mitigated by

contingent self-esteem. Instead, we additionally tested for direct paths from

belongingness to psychological health and found a significant direct path from

unconditionality of belongingness to depression in our model, $\beta$ = -.19, $p$ < .05. On the

contrary, neither the direct path from amount of belongingness to depression, nor any

direct path from amount or unconditionality of belongingness to anxiety was significant

in our model, all $\beta$s < I.19I, all *ns*.

Together, the current set of analyses provides support for our model when

psychological health is operationalized as anxiety. When psychological health is

operationalized as depression, however, we found that contingent self-esteem does not

play the role proposed in the model. This finding is consistent with past research

showing that depression behaves differently to other indicators of psychological health

in its relation to self-esteem. Specifically, depression is typically more strongly related

to self-esteem than other indicators of psychological health (e.g., Watson et al., 2002).

In fact, some research even indicates that self-esteem and certain facets of

psychological health may be identical or at least underlying the same core concept

(Judge et al., 2002; Neiss et al., in press; Watson et al., 2002). Other researchers,

however, find evidence showing that the relationship between these indicators of

psychological health and self-esteem is not solely due to a common core and that these

indicators of psychological health and self-esteem are certainly not identical (e.g., see

Orth et al., 2008 for the relationship between self-esteem and depression). Given this

controversy, it is informative to test whether self-esteem mediates the effect of

belongingness on well-being or is a joint outcome. To address this issue, we tested two

alternative models against our model for both facets of psychological health.

Specifically, we reversed the order of the psychological health facet and self-esteem in

the first competing model. In comparison to our model, this model provided a poorer fit

for anxiety ($\chi^2/df$ = 2.30, *CFI* = .95, *IFI* = .95, *RMSEA* = .08) as well as for depression

($\chi^2/df$ = 2.27, *CFI* = .95, *IFI* = .95, *RMSEA* = .08) as indicators of psychological health.

A likelihood ratio test to compare the models could not be applied, because both

models had the same degrees of freedom. However, $\Delta\chi^2$ was in both cases exceeding

60—a very large difference. For the second competing model we deleted the paths from the two facets of self-esteem to psychological health from our original model and additionally specified paths from the two facets of belongingness directly to psychological health. In other words, we tested whether self-esteem and psychological health are joint outcomes of belongingness. Again, we compared this model against our original model separately for anxiety and depression as indicators of psychological health. In comparison to our model, this second competing model also provided a poorer fit for anxiety ($\chi^2/df$ = 1.77, $CFI$ = .97, $IFI$ = .97, $RMSEA$ = .06) as well as for depression ($\chi^2/df$ = 1.88, $CFI$ = .97, $IFI$ = .97, $RMSEA$ = .07) as indicators of psychological health. Again, a likelihood ratio test could not be applied, because both models had the same degrees of freedom. However, $\Delta\chi^2$ was in both cases exceeding 25—a very large difference.

In a final step we tested for the possibility of two additional paths in our model. Specifically, we tested whether amount of belongingness may predict contingent self-esteem independent of amount of self-esteem and unconditionality of belongingness may predict amount of self-esteem independent of contingent self-esteem. The resultant model is depicted in Figure 3.2. Path analyses revealed that the additional paths were in fact significant for amount of belongingness to contingent self-esteem (reverse-scored), $\beta$ = .23, $p$ < .01, as well as for unconditionality of belongingness to amount of self-esteem, $\beta$ = .13, $p$ < .05 (these results were the same for anxiety and depression as the indicators of psychological health). The strength of all other paths in the model were virtually unaffected by the inclusion of these two additional paths—no changes in the significance levels of any path occurred. Furthermore, the model fit of the modified model was good when treating anxiety as the indicator of psychological health ($\chi^2/df$ = 1.36, $CFI$ = .99, $IFI$ = .99, $RMSEA$ = .04) as well as when treating depression as the

indicator of psychological health ($\chi^2/df$ = 1.40, CFI = .99, IFI = .99, RMSEA = .05). In

fact, the modified model (see Figure 3.2) fitted the data significantly better than our

original model (see Figure 3.1) when treating anxiety as the indicator of psychological

health ($\Delta\chi^2$ = 17.5, $\Delta df$ = 2, p < .001) as well as when treating depression as the

indicator of psychological health ($\Delta\chi^2$ = 17.6, $\Delta df$ = 2, p < .001). The a priori

hypothesis underlying the modification shown in Figure 3.2 is not straight forward. A

first reason for why the model depicted in Figure 3.2 fits the data better than the model

depicted in Figure 3.1 may be shared method variance between the self-report scales. In

fact, the strength of the additional correlations is within the typical range of correlations

due to common method variance and less than half the size of the hypothesized paths

involving these variables. A second reason for why the model depicted in Figure 3.2

fits the data better than the model depicted in Figure 3.1 may be caused by some

shortcomings of the Unconditionality of Belongingness subscale as well as the

Contingent Self-Esteem Scale. After the submission of this thesis, Leary (2008) pointed

out that the Unconditionality of Belongingness subscale may measure unconditionality

of belongingness solely in the achievement domain rather than globally. The items of

the Unconditionality of Belongingness subscale do suggest this. Similarly, inspection of

the items of the Contingent Self-Esteem scale reveals that this scale also does not assess

global perceptions of contingency but contingency in three domains: (a) achievements,

(b) physical appearance, and (c) opinions of others. Although one may argue that these

three domains are among the most important domains of contingency, there is

substantial evidence that domain-specific self-esteem and global self-esteem is different

and even the consideration of many self-esteem domains at the same time does not

explain all the variance in global self-esteem judgments (Brown, 1998; Brown &

Dutton, 1995). Finally, our proposed model needs replication to verify the model and

the additional paths in particular. Of relevance here, we have constructed a global

unconditionality of belongingness subscale as a reaction to Leary's (2008) observation.

Using this improved measure we found in four independent studies coherent support for

our originally formulated model and in all studies we failed to replicate the additional

paths as shown in Figure 3.2.

Together, the structural equation modelling employed above supports the model

shown in Figure 3.2 for anxiety as an indicator of psychological health and provides

evidence that our model fits the data better than two competing models. However, for

depression as an indicator of psychological health our model is only partially supported.

Although the results obtained by the structural equation modelling approach provides

evidence for the relevance of unconditionality of belongingness for depression over and

above amount of belongingness, the relation between unconditionality of belongingness

on depression was not mediated by contingent self-esteem. This result is in line with

research showing a particularly strong link between amount of self-esteem and low

levels of depression. An important step for future research is to test the validity of our

model using additional indicators of psychological health.

*Figure 3.2.* Modified Unconditional Belongingness Model of Self-Esteem and

Psychological Health
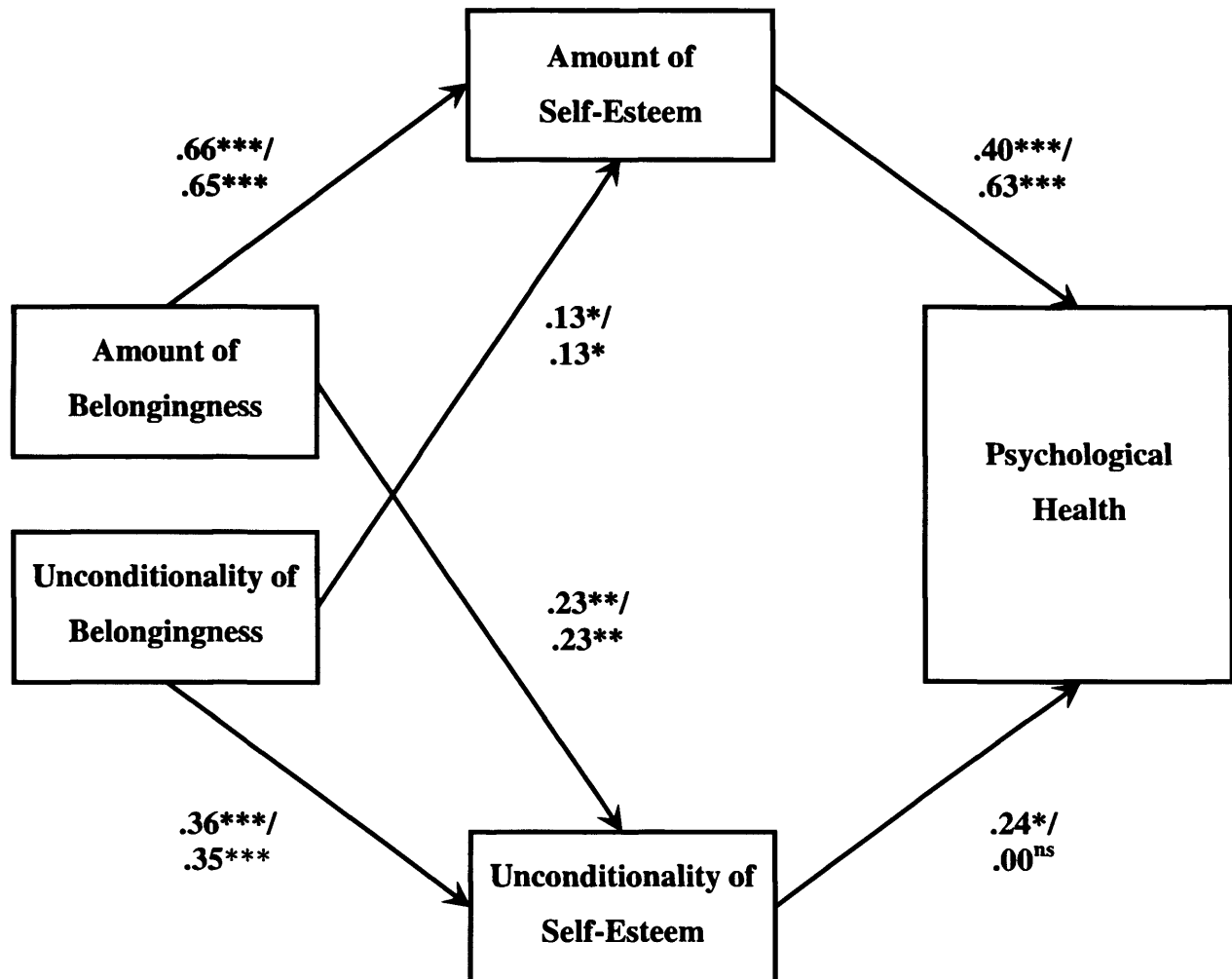


*Note.* a/b with a = standardized regression weights for the model with anxiety (reverse-

scored) as the indicator of psychological health and b = standardized regression weights

for the model with depression (reverse-scored) as the indicator of psychological health.

*** $\Leftrightarrow$ $p < .001$, ** $\Leftrightarrow$ $p < .01$, * $\Leftrightarrow$ $p < .05$, and $^{ns}$ $\Leftrightarrow$ $p > .05$ (all two-tailed)

## 3.6    Discussion

Based on humanistic psychologists' theoretical analyses of unconditional

acceptance in parent-child relationships (Fromm, 1956) and client-therapist

relationships (Rogers, 1951, 1961), Baumeister and Leary (1995) speculated that the

unconditionality of belongingness is a predictor of psychological health. Nonetheless,

previous research on belongingness has focused solely on amount of belongingness.

The present studies are the first to empirically evaluate the unconditionality dimension

of belongingness.

The results indicated that people differ in their perceptions of the

unconditionality of their belongingness to other people in general and that these

perceptions are distinct from the amount of belongingness that people perceive. Further,

the unconditionality of belongingness predicts psychological health over and above the

amount of belongingness (cf. Baumeister & Leary, 1995; Fromm, 1956; Rogers, 1951,

1961). Most relevant for this thesis, the data showed for the first time that the link

between unconditionality of belongingness and psychological health is mediated by

contingent self-esteem, while replicating past evidence that the link between amount of

belongingness and psychological health is mediated by amount of self-esteem (for a

review, see DuBois & Tevendale, 1999). In this respect, it needs to be noted that the

mediational role of contingent self-esteem in the relation between unconditionality of

belongingness and psychological health was not obtained when psychological health

was operationalized as the absence of depression. Although this pattern of results is in

line with past research showing that depression is the one facet of psychological health

that shows the highest relation to amount of self-esteem (e.g., Watson et al., 2002),

more research is clearly needed to test our model with other facets of psychological

health. In fact, we have just completed a series of studies that support our model for

self-actualization, self-forgiveness, guilt, shame, and chronic affect.[4]

On the whole, the evidence supports a model that parsimoniously integrates

amount of belongingness, unconditionality of belongingness, amount of self-esteem,

contingent self-esteem, and anxiety—as an indicator of psychological health (see

Figure 1). Even the results involving depression as an indicator of psychological health

are interesting and informative, although they do not entirely fit our model. All the

constructs of the model shown in Figure 3.1 have been listed to range among the most

influential psychological variables (e.g., Baumeister, 1998; Fiske, 2002; Sedikides &

Gregg, 2003). Thus, the analyses above should be useful for the understanding of the

relationship between self-esteem and psychological health. Despite the plethora of

studies that have been conducted on the relationships between belongingness, self-

esteem, and psychological health, the processes underlying these effects have not been

fully understood (Baumeister et al., 2003). By establishing unconditionality of

belongingness as a major variable for research on belongingness, self-esteem, and

psychological health, these data may draw us one step closer to understanding the

processes underlying the relations between belongingness, self-esteem, and

psychological health. An important next step is to test the causal assumptions of our

model. So far, we only possess correlational evidence for the hypothesized causal

effects. Research that tests the model longitudinally as well as research that manipulates

unconditionality and amount of belongingness is necessary (see also Chapter 5). This

issue is particularly pressing for the assumed causal path from unconditionality of

belongingness to psychological health via contingent self-esteem. For the other

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[4]   This sentence was added as a part of the revisions of this thesis after the viva.

Therefore, this additional data is not reported here.

assumed path—i.e., amount of belongingness to psychological health via amount of

self-esteem—there already exist some longitudinal results supporting this part of the

model (for a review see DuBois et al., 2002).

The model shown in Figure 3.1 provides three immediate benefits. First, by

introducing the unconditionality of belongingness dimension into personality and social

psychological research, it suggests an important origin of contingent self-esteem (Deci

& Ryan, 1995; Kernis, 2003; Kernis & Goldman, 2003). Contingent self-esteem has

been found to predict variables as diverse as instable self-esteem (Kernis et al., 2005),

anger-proneness (Kernis et al., 1999), heightened alcohol consumption as a means to

regulate affect (Neighbors et al., 2004), and increases in sad mood when comparing

oneself with physically more attractive others (Patrick et al., 2004). However, the

antecedents of global contingent self-esteem remain widely unexplored. Our analysis

suggests that unconditionality of belongingness is an important origin of contingent

self-esteem.

Second, Kwan et al. (1997, p. 1038) have argued that it is an "ultimate dream

for everyone in the field of psychology ... [to] contribute to people's well-being". An

important prerequisite for this is to understand the origins of well-being or

psychological health. Many psychologists have granted belongingness a primary role in

contributing to better psychological health (for a review see Baumeister & Leary,

1995). With the introduction of the unconditionality of belongingness dimension into

the belongingness framework, this chapter provides evidence that the importance of

belongingness for psychological health is even bigger than previously assumed.

Third, and most important for this thesis, adding unconditionality of

belongingness to the belongingness framework suggests a possible integration of

contingent self-esteem into Sociometer Theory (Leary, 2006; Leary & Baumeister,

2000; Leary & Cox, 2007; Leary et al., 1995). Sociometer Theory provides an

explanation of the function of amount of self-esteem. Specifically, the theory assumes

that amount of self-esteem functions as a meter or gauge of a person's level of

belongingness. However, why does self-esteem then not only vary in its amount, but

also in its degree of contingency? Leary and Baumeister (2000) have compared the

amount of belongingness with the amount of fuel in a car and correspondingly the

amount of self-esteem with the car's fuel control. However, fuel is not enough to keep

an engine going. An engine also needs air and an air control (i.e., the "choke" in older

engines). In keeping with Leary and Baumeister's (2000) metaphor, the

unconditionality of belongingness can be compared with the air intake and contingent

self-esteem is like the engine's air-intake control. The fuel and air controls work side-

by-side to assure the functioning of the engine. Similarly, the evidence described in this

chapter shows that amount and unconditionality of belongingness both predict

psychological functioning. In line with the finding that amount of (contingent) self-

esteem mediates the relationship between amount (unconditionality) of belongingness

and psychological functioning (but see the divergent role of depression), we posit that

amount of self-esteem monitors a person's amount of belongingness, whereas

contingent self-esteem monitors a person's unconditionality of belongingness. This

reasoning provides a belongingness-based and parsimonious explanation for the

independent effects of amount of self-esteem and contingent self-esteem that have been

observed in this as well as previous research.

# Chapter 4

## Implicitly Measured Self-Esteem and Psychological Health

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## 4.1    Chapter Overview

This chapter argues that existent implicit measures of self-esteem assess

domain-specific rather than global self-esteem and that this may explain why existent

implicit measures of self-esteem fail to predict self-reported psychological health. To

address this and other issues, a new single-item implicit measure of global self-esteem

is introduced. The measure is based on the mere-ownership effect and asks participants

to indicate how much they like their name. Six studies attest to the validity of this

measure. In addition to showing high test-retest reliability ($r=.85$), the studies found

that Name Liking was (a) unrelated to impression management, (b) positively related to

the Name-Letter-Task, the Self-Esteem IAT, and explicit self-esteem measures, (c)

more strongly related to explicit measures of global than domain-specific self-esteem,

(d) more strongly related to self-esteem judgments made spontaneously as well as

under cognitive load, and (e) predicted observer-reported anxiety during an anxiety-

inducing interview, whereas an explicit measure of self-esteem did not. Crucially,

Name Liking was positively associated with self-reports of psychological health, and

this relation even held when controlling for explicitly measured self-esteem. These

results indicate that the relationship between self-esteem and psychological health holds

not only for explicitly measured of self-esteem, but also for implicitly measured self-esteem.

## 4.2    Introduction

As discussed in Chapter 1, implicit measures of self-esteem have recently garnered much theoretical and empirical attention. Although self-esteem researchers heavily debate whether implicit and explicit measures of self-esteem assess the same theoretical construct (i.e., single-attitude theories; e.g., Olson et al., 2007) or whether these measures assess two different theoretical constructs (i.e., dual-attitude theories; e.g., Koole et al., 2001; Wilson et al., 2000), there is agreement that valid and reliable implicit measures of self-esteem are vital for self-esteem research.

One reason for the development of implicit measures of self-esteem is to elucidate the relationship between self-esteem and psychological health. As shown in Chapter 1 (see also Baumeister et al., 2003), explicit measures of self-esteem are strongly related to psychological health. However, explicit measures of self-esteem may not assess "genuine self-esteem" (Dijksterhuis et al., 2008), but may instead assess the motive to outwardly present a positive attitude toward the self (Baumeister et al., 1989; Tice, 1991; for similar claims see also Dijksterhuis et al., 2008; Farnham et al., 1999; Horney, 1937; Olson et al., 2007).

To address this and other issues, several implicit measures of self-esteem have been developed in recent years. These measures include evaluative priming techniques (Spalding & Hardin, 1999), word-stem completion tasks (Pelham & Hetts, 1999), the evaluation of self-related objects (i.e., name letters, birth date numbers; Koole et al., 2001), and the self-esteem version of the Implicit Association Test (Self-Esteem IAT;

Greenwald & Farnham, 2000). Yet, a persistent barrier to acceptance of these measures

is that they are generally unrelated to each other (Baccus, Baldwin, & Packer, 2004;

Bosson et al., 2000; Jordan, Spencer, & Zanna, 2003; Riketta, 2005). At the same time,

existent implicit measures of self-esteem do not consistently relate to psychological

health (e.g., Bosson et al., 2000; Schimmack & Diener, 2003; Shimizu & Pelham,

2004). Furthermore, in the infrequent cases where a relationship between implicitly

measured self-esteem and psychological health did occur, this relationship was

rendered non-existent when controlling for explicitly measured self-esteem (e.g.,

Bosson et al., 2000).

The low relations between implicit measures of self-esteem have led some

researchers to suggest that different implicit measures assess different facets of self-

esteem (Bosson et al., 2000). More recently, this claim has been supported for the only

two implicit measures that have acceptable psychometric properties (Bosson et al.,

2000): the Name-Letter-Task and the Self-Esteem IAT. In particular, Wentura et al.

(2005) suggested that the Name-Letter-Task assesses self-evaluations that pertain

predominantly to the social domain. Also, Sakellaropoulo and Baldwin (2007) found

that the Name-Letter-Task assesses either an agentic or a communal facet of self-

esteem depending on the wording of the instructions. Finally, Campbell et al. (2007)

showed that the Self-Esteem IAT assesses different facets of self-esteem depending on

the specific items used.

Together then, it is timely and useful to attempt the development of an implicit

measure that assesses *global* rather than domain-specific self-esteem, because the

failure to find consistent relations between implicitly measured self-esteem and self-

reported psychological health may be due to the assessment of domain-specific, rather

than global self-esteem, with the existing implicit measures. Therefore, the research

described in this chapter was conducted in an attempt to construct a new implicit measure of global self-esteem and to provide initial support for its validity. At the same time, this measure was used to re-examine the relationship between implicitly measured self-esteem and psychological health. The next section presents the rationale for the new implicit measure of self-esteem.

### 4.2.1    The Mere-Ownership Effect

Similar to the Name-Letter-Task (Koole et al., 2001), the new implicit measure of global self-esteem is based on the mere-ownership effect. This effect is the tendency to evaluate self-related objects more positively than self-unrelated objects. For example, people generally favour personal belongings over the belongings of others, people prefer the numbers appearing in their birth date over non-birth date numbers, and they like the letters included in their name more than other letters (Koole & Pelham, 2003). The mere-ownership effect allows the implicit assessment of self-esteem because people with high self-esteem extend their positive self-evaluation to the evaluation of objects representing the self, without conscious awareness that self-esteem is contributing to these evaluations (Greenwald & Banaji, 1995). Thus, people with genuinely high self-esteem should show a stronger mere-ownership effect than people with low self-esteem.

Koole and Pelham (2003) argued that the strength of the mere-ownership effect is more indicative of global self-esteem when the owned object is more representative of the self. Koole and Pelham reviewed a large number of studies attesting to the centrality of one's name for one's global self and concluded that the letters included in one's name are particularly suitable objects for assessing self-esteem implicitly,

because "it is difficult to think of a social symbol that is more closely associated with a person's identity than his or her name" (p. 99). In support of this notion, people report that they would not be the same person if they had another name, couples report that the perpetuation of their family name is one of the most important reasons for having a child, students feel flattered if their professors know their name, and namelessness is in many cultures equivalent to possessing no honour or identity.

Koole and Pelham (2003) used these arguments to explain why assessing people's liking for the letters in their name constitutes an implicit measure of self-esteem. However, an implication of their arguments is that assessing people's liking for their name as a whole would be an even better implicit measure of self-esteem. According to a well-known proposition of Gestalt psychology, the whole is often more than the sum of its parts. This view suggests that the evaluation of one's name might be a better way of assessing the individual's global self-esteem than summing up the evaluation of name letters. Moreover, most word recognition models (McClelland & Elman, 1986; Norris, McQueen, & Cutler, 2000) assume that words are encoded holistically and are represented phonetically in memory (that is by phonemes and not by letters). Above and beyond this, the Name-Letter-Task does not take the order of one's name-letters into account. However, the order of letters is crucial to determine the meaning and valence of a target object. For example, a person called Blake may possess a positive attitude toward himself—Blake—but a negative attitude towards 'bleak'.

Together then, we expect that Name Liking is a more global measure of self-esteem than the Name-Letter-Task, because Name Liking captures all properties of the arguably most self-related object—i.e., the name—(see Koole & Pelham, 2003), whereas the Name-Letter-Task fails to consider the frequency and order of the letters in

one's name as well as the phonemes of one's name. Based on this reasoning, we expected that Name Liking may assess self-esteem more globally than the Name-Letter-Task. To provide a full test of this reasoning, three measures of name-liking were developed and tested, including evaluations of one's first name, surname, and first and surname together (i.e., full name). We tested our hypotheses for all three measures, although the full name measure should be most powerful and valid (cf. Gestalt psychology).

An additional advantage of the full name version of the name-liking measure over other implicit measures is its brevity. The measure consists of a single item. As such, it complements a recently developed single-item explicit measure of self-esteem ("I have high self-esteem"; Robins, Hendin, & Tresniewski, 2001). According to Robins et al., multi-item measures, such as the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965), are relatively complicated and time-consuming to administer; cause fatigue, frustration, and boredom; and may result in participants skipping questions. These concerns also apply to the self-esteem IAT, which typically consists of about 200 trials, and to the name-letter-task, which asks participants to rate all 26 letters of the alphabet.

## 4.3    Study 8

The aim of Study 8 was to provide a preliminary test of the viability of name-liking as an implicit measure of global self-esteem. Therefore, this study examined the correlations between name-liking and the only two implicit self-esteem measures that have been shown to have acceptable psychometric properties: the name-letter-task and the self-esteem IAT (Bosson et al., 2000). We expected to replicate evidence that the

Name-Letter-Task and the Self-Esteem IAT are unrelated (Baccus et al., 2004; Bosson

et al., 2000; Jordan et al., 2003; Riketta, 2005), while finding that Name Liking is

moderately positively related to *both* measures. This pattern would constitute further

support for the hypothesis that the Name-Letter-Task and the Self-Esteem IAT assess

different facets of self-esteem (Campbell et al., 2007; Sakellaropoulo & Baldwin, 2007;

Wentura et al., 2006; see discussion above). More important, this finding would be

consistent with the argument that Name Liking is a measure of global (rather than

domain-specific) self-esteem.

Additionally, we also expected a moderately positive correlation between Name

Liking and explicitly measured global self-esteem. According to Greenwald and

Farnham (2000), implicitly and explicitly measured self-esteem should be positively

related, because both explicit and implicit measures are determined in part by affective

associations with the self. Further, Greenwald and Farnham (2000) argued that the

conscious expression of valenced self-views should strengthen the connection between

the self and these evaluations. Finally, Bosson et al. (2000) argued that, even if the

constructs tapped on by implicit and explicit measures of self-esteem are acquired

through different learning processes, the learned content should be similar and produce

some overlap between the two constructs.

We did not have a specific hypothesis about whether Name Liking is more

strongly related to other implicit measures of (domain-specific) self-esteem or to

explicit measures of (global) self-esteem. On the one hand, one might expect a stronger

relation between Name Liking and other implicit measures, because these measures

should not be biased by impression management and they should not depend on one's

conscious awareness of one's level of self-esteem. On the other hand, existing implicit

measures seem to assess domain-specific aspects of self-esteem more than global self-

esteem. Hence, Name Liking, as a measure of global self-esteem, may relate to explicit measures of (global) self-esteem at least as strongly as to the existing implicit measures of (domain-specific) self-esteem.

In order to buttress our hypothesis that Name Liking is not simply a proxy for explicit self-esteem, we wished to test whether explicit measures of self-esteem, the Self-Esteem IAT, and the Name-Letter-Task are all independently related to Name Liking. Such evidence would lend credence to the validity of Name Liking as an implicit measure of global self-esteem by revealing theoretically expected relations to other implicit measures of self-esteem even when explicit measures of self-esteem are controlled for.

### 4.3.1   Method

#### Participants

126 participants (89 women, 37 men) completed this online-study (www.online-studies.org). The study was advertised on John Krantz's web portal for online-studies (http://psych.hanover.edu/research/exponnet.html). The language of the study was English. The mean age of the participants was 25.98 years ($SD = 11.10$). The majority of the participants were from North America (88%). One additional participant was identified as an outlier and was excluded from the analyses.

#### Materials and Procedure

After consenting to participate, participants completed a series of demographic items. Next, participants completed the Name Liking measures, the Name-Letter-Task, the Self-Esteem IAT, and two explicit measures of global self-esteem. The order of all measures was randomized across participants, except that Name Liking always

appeared after the Name-Letter-Task to prevent suspicion that the evaluation of one's

name may play a role in letter preferences. At the end of the study, participants read a

feedback page and were thanked for their participation.

*Name Liking Scales.* In order to assess participants' evaluation of their first

name, surname, and full name, participants completed the following three single-item

measures on a 9-point scale ranging from 1 (*not at all*) to 9 (*very much*): "How much

do you like your first name?", "How much do you like your surname?", "How much do

you like your name, *in total*?"

*Name-Letter-Task.* Closely modelled after the task used by Koole et al. (2001),

participants indicated how much they liked each of the 26 letters of the alphabet in

random order. Participants responded to each item using a 9-point scale ranging from 1

(*not at all beautiful*) to 9 (*extremely beautiful*). A name-letter score was calculated for

each participant using his or her full name (first and last name together). To do so, we

followed the recommendations by Kitayama and Karasawa (1997): this calculation

assessed the "objective" (i.e., unbiased by the mere-ownership effect) beauty of each

letter, by calculating the mean evaluation of each letter over all participants who did not

have the letter in their name. The overall name-letter score was simply the mean of the

differences between each participant's name letter evaluations and the corresponding

objective beauties. Thus, higher name-letter scores indicated higher self-esteem.

*Self-Esteem IAT.* The Self-Esteem IAT was modelled after Greenwald and

Farnham's (2000) personalized Self-Esteem IAT. Participants first reported their first

name, last name, and initials. These became items for the "me" category in the IAT. To

obtain neutral "not-me" items, participants selected two same sex first names and one

last name from three lists. Participants were instructed to select names that they (a) do

not associate in any way with themselves, a close friend, or a relative, (b) have no

reason to either like or dislike, and (c) are the most familiar one's from the remaining. For the "pleasant" category, the words were "loved", "positive", "liked", "good", "worthy", and "nice". For the "unpleasant" category, the words were "hated", "negative", "disliked", "bad", "failure", and "awful". The number of items for each category is lower than in the original Self-Esteem IAT by Greenwald and Farnham (2000) because Nosek, Greenwald, and Banaji (2005) showed that an increasing item number does not improve the IAT results, as long as there is more than one item for each category used.

The Self-Esteem IAT consisted of the same configuration of blocks as used by Greenwald and Farnham (2000). Blocks 1, 2, and 3 consisted of 20 trials. Blocks 4 and 5 consisted of 40 trials. Blocks 6 and 7 are identical in length to blocks 3 and 4, respectively. The order of the items was randomized for each participant for all blocks of the Self-Esteem IAT. For more detailed information about the single blocks, see Greenwald and Farnham (2000). As recommended by Greenwald et al. (2003) we used the improved scoring algorithm for the IAT (D-score) to calculate participants' IAT scores. Following the calculation method recommended by Cunningham, Preacher, and Banaji (2001), the internal consistency of the measure was good ($\alpha = .89$).

*Explicit Measures of Self-Esteem.* Two explicit measures of self-esteem were utilised. The Single-Item Self-Esteem Scale (Robins et al., 2001) asks participants to respond to the item: "I have high self-esteem". Participants responded to the item using a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*applies completely*). The Self-Liking/Self-Competence Scale - Revised Version (Tafarodi & Swann, 2001) contains 16 items. Example items are "I am very comfortable with myself" and "I am highly effective at the things I do" ($\alpha = .91$). Participants responded to each item using a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*applies completely*).

## 4.3.2 Results and Summary

When describing this and the following studies, the text reports only the results involving the full name version of the Name Liking measure, but not the first name and surname versions. We focus on the full name version because the results across the present studies supported our aforementioned hypothesis that the full name version is the most valid implicit measure of global self-esteem. Nonetheless, in order to allow direct comparison of the performance of the three candidate Name Liking measures, the zero-order correlations between all variables are presented in separate tables (for this study, see Table 4.1), including all three candidate Name Liking measures (i.e., first name, surname, and full name). Further, for all studies, the results of any analyses for the first name and surname versions of the Name Liking measure that does not take the form of a zero-order correlation is presented in the Appendix. Parallel results for the full name version of the Name Liking measure are presented in the text.

As in previous research, the Name-Letter-Task and the Self-Esteem IAT were unrelated, $r = .12$, *ns*. In contrast, higher self-esteem on Name Liking predicted significantly higher self-esteem on the Name-Letter-Task, $r = .30$, $p \leq .001$, *and* the Self-Esteem IAT, $r = .24$, $p \leq .01$. These correlations with both implicit measures speak to the validity of Name Liking as a *global* measure of self-esteem.

Table 4.1

*Zero-Order Correlations Between all Measures used in Study 8.*

| N = 126 | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| (1)  First Name Name Liking | -- | | | | | |
| (2)  Surname Name Liking | .39*** | -- | | | | |
| (3)  Full Name Name Liking | .72*** | .69*** | -- | | | |
| (4)  Name-Letter-Task | .32*** | .29*** | .30*** | -- | | |
| (5)  Self-Esteem IAT | .18* | .14 | .24** | .12 | -- | |
| (6)  Single-Item Explicit Measure of Self-Esteem | .34*** | .35*** | .38*** | .34*** | .18* | -- |
| (7)  Multi-Item Explicit Measure of Self-Esteem | .31*** | .25** | .30** | .31*** | .18* | .79*** |

*Note.* *** = ($p \leq .001$), ** = ($p \leq .01$), * = ($p \leq .05$).

Also, Name Liking was positively related to explicitly measured self-esteem, as assessed by the single-item measure, $r = .38, p \leq .001$, and the multi-item measure, $r = .30, p \leq .001$. Note that this finding is consistent with the single-attitude view if one assumes that Name Liking and the explicit measures assess the same construct but are affected by different types of measurement error (Greenwald & Farnham, 2000). The finding is also consistent with the dual-attitudes view if one assumes that Name Liking and the explicit measures refer to distinct constructs that share common sources (Bosson et al., 2000).

Finally, we simultaneously regressed Name Liking on (a) the multi-item measure of explicit self-esteem, (b) the Self-Esteem IAT, and (c) the Name-Letter-Task. Results revealed that all three predictors were independently related to Name Liking, $\beta = .20, p \leq .05$ (explicit measure), $\beta = .18, p \leq .05$ (Self-Esteem IAT), and $\beta = .20, p \leq .05$ (Name-Letter-Task). This pattern of results is first support that Name Liking is more than a noisy measure of explicit self-esteem or a proxy measure of explicit self-esteem. This pattern of results also suggests that Name Liking is a more global measure of self-esteem than the Name-Letter-Task and the Self-Esteem IAT.


## 4.4    Study 9


Study 9 garnered additional support for the idea that Name Liking is a measure of global rather than domain-specific self-esteem. Specifically, this study tested whether Name Liking is more strongly related to explicit measures of global self-esteem or to explicit measures of domain-specific self-esteem.

Further, Study 9 garnered additional evidence that Name Liking is an implicit rather than explicit measure. Bosson et al. (2000) assert that "explicit self-report

measures are essentially tapping broad beliefs or schemas about who we think we are. They are essentially self-theories: 'I think I am this way'; 'I feel certain I'm not this other way.'" (p. 641) Implicit measures differ from explicit measures in this respect, because implicit measures "provide estimates of individuals' attitudes without our having to directly ask them for such information" (Fazio & Olson, 2003; p. 303). Thus, if participants respond to the Name Liking measure without directly indicating their self-theories of their self-esteem, Name Liking formally classifies as an implicit measure of self-esteem (Bosson et al., 2000; Fazio & Olson, 2003). However, it is possible that participants in Study 8 assumed that Name Liking is meant to assess self-esteem and thus reported their self-theories concerning their self-esteem. To check this possibility, at the end of Study 9 participants were asked what guided their responses to the Name Liking measure. This enabled us to find out whether they had completed the Name Liking measure by indicating how much they like their *name* and not according to how much they like *themselves* (self-theory of self-esteem).

### 4.4.1   Method

#### Participants

145 participants (105 women, 37 men, and 3 did not respond) completed this online-study (www.online-studies.org). The study was advertised on John Krantz's web portal for online-studies. The language of the study was English. The mean age of the participants was 22.38 years (*SD* = 8.72). The majority of the participants were from North America (86%).

#### Materials and Procedure

After consenting to participate, participants completed a series of demographic items. Next, participants completed the Name Liking measures, the explicit measure of global self-esteem, and the explicit measure of domain-specific self-esteem. The order of all these measures was randomized across participants. Finally, participants were asked about the strategy that guided their responses to the Name Liking measure. At the end of the study, participants read a feedback page and were thanked for their participation. The Name Liking measures were identical to the measures used in Study 8. The remaining measures are described below.

*Explicit Measure of Global Self-Esteem.* The Amount of Self-Esteem Scale (Gebauer, Riketta, Maio, & Haddock, 2008) contains 5 items. Example items are "In general, I hold myself in high regard" and "I do not like and value myself" (reverse-scored) ($\alpha = .88$). Participants responded to each item using a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*applies completely*).

*Explicit Measure of Domain-Specific Self-Esteem.* The Domain-Specific Self-Esteem Inventory (Hoyle, 1991) contains 4 subscales with 5 items each. Example items of the Social subscale are "I feel secure in social situations" and "I feel confident of my social behaviour" ($\alpha = .87$). Example items of the Ability subscale are "I am able to do things as well as most other people" and "I almost always accomplish the goals I set for myself" ($\alpha = .77$). Example items of the Appearance subscale are "I feel that others would consider me to be attractive" and "I am satisfied with the way I look" ($\alpha = .90$). Example items of the Public subscale are "I enjoy being in front of large audiences" and "When I speak in a large group discussion, I usually feel sure of myself" ($\alpha = .91$). Participants responded to each item using a 5-point scale ranging from 1 (*not at all like me*) to 5 (*very much like me*).

*Response Strategy on Name Liking*. Participants responded to the following measure by either ticking a checkbox in order to indicate that answer alternative '(a)' applied to them or by filling out a text box in order to indicate that answer alternative '(b)' applied to them: "I answered the question 'How much do you like your first name/surname/name, in total?' by indicating (a) how much I like my name or (b) [textbox]".

### 4.4.2    Results and Summary

Table 4.2 shows all zero-order correlations between the measures used in this study. To test whether Name Liking is a measure of global rather than domain-specific self-esteem, we performed a hierarchical regression analysis with global self-esteem and the five facets of self-esteem (all explicitly measured) as predictors of Name Liking. As expected, the first step of the regression was the only one yielding a significant relation. Only global self-esteem predicted Name Liking, $\beta = .36, p \leq .001$, whereas none of the five facets of self-esteem predicted Name Liking over and above global self-esteem, $-.08 \leq \beta s \leq .15$, *ns*. This evidence supports the hypothesis that Name Liking assesses global rather than domain-specific self-esteem. It is noteworthy that the four domains of domain-specific self-esteem that we tested in this study include an agentic self-esteem domain—ability domain—and a communal domain—social domain. Given that both of these domains did not explain any additional amount of variance in Name Liking over and above the explicit measure of global self-esteem, there is indirect support that Name Liking is a more global measure of self-esteem than the Name-Letter-Task and the Self-Esteem IAT is. However, it needs to be noted that one could draw these conclusions more comfortably if the Self-Esteem IAT and the

Name-Letter-Task had been administered in this study as well and had been found to

relate to the explicit measure of domain-specific self-esteem.

The next analysis examined participants' reported strategy for completing the

Name Liking measure. Six participants (4.1%) did not complete this item, 129 (92.8%)

indicated that they completed the item according to how much they like their name, and

10 participants (7.2%) indicated that they completed the item according to something

else. Six of these ten participants obviously misunderstood the task and indicated a

number or a phrase that reflected their Name Liking (e.g., "I like my name very

much"). One participant indicated that her answer was "quite random". The remaining

three participants made irrelevant statements (e.g., "I love my initials"). Thus, although

Name Liking was embedded in explicit measures of self-esteem in this study, not a

single participant indicated reporting the self-theory concerning self-esteem. Therefore,

any effects of this measure are indirect and not attributable to conscious theories about

self-esteem. Hence, Name Liking meets the criteria for an implicit measure as defined

by Fazio and Olson (2003). A drawback of the procedure employed in this task,

however, is that it is unknown whether participants felt demand to report that they

indicated their actual Name Liking rather than their self-liking. After all, the Name

Liking measure explicitly asks participants to report their liking for their name and thus

participants may have felt obliged to later report that they have done just this, despite

actually having reported their self-esteem. A funnel debriefing task (cf. Bargh &

Chartrand, 2000; Fitzsimons & Bargh, 2003) would have been more suitable, but the

fact that this study was an online-study made a funnel debriefing impossible. Also, we

wish to remind the reader that this task is not the only task suggesting that Name Liking

is more than an explicit measure of self-esteem and shares properties with other implicit

measures of self-esteem (see Studies 8, 11, and 12) and also possesses predictive power

over and above well validated explicit measures of self-esteem (see Studies 8, 10, 11,

and 12).

Table 4.2

*Zero-Order Correlations Between all Measures used in Study 9.*

| $N = 145$ | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| (1) First Name Name Liking | -- | | | | | | |
| (2) Surname Name Liking | .43*** | -- | | | | | |
| (3) Full Name Name Liking | .75*** | .72*** | -- | | | | |
| (4) Explicit Measure of Self-Esteem | .36*** | .21* | .36*** | -- | | | |
| (5) Domain-Specific Self-Esteem – Ability Domain | .18* | .15 | .19* | .50*** | -- | | |
| (6) Domain-Specific Self-Esteem – Social Domain | .32*** | .20* | .30*** | .53*** | .47*** | -- | |
| (7) Domain-Specific Self-Esteem – Physical Appearance | .29*** | .15 | .28*** | .65*** | .35*** | .51*** | -- |
| (8) Domain-Specific Self-Esteem – Public Domain | .17* | .11 | .08 | .41*** | .40*** | .64*** | .45*** |

*Note.* *** = $(p \leq .001)$, ** = $(p \leq .01)$, * = $(p \leq .05)$.

## 4.5    Study 10

As mentioned above, Bosson et al. (2000) found that only the Self-Esteem IAT
and the evaluation of self-related objects (i.e., name letters and birth date numbers)
exhibited satisfactory test-retest reliability. The first goal of Study 10 was to test if the
Name Liking measure also exhibits satisfactory test-retest reliability.

As a second goal, Study 10 tested whether Name Liking predicts psychological
health. Explicit measures of self-esteem are among the strongest predictors of
psychological health (Baumeister et al., 2003; Diener & Diener, 1995; Sedikides et al.,
2004). However, previous studies found weak and inconsistent relations between
implicitly measured self-esteem and explicitly measured psychological health
(Schimmack & Diener, 2003; Shimizu & Pelham, 2004), and these relations were non-
significant after controlling for explicitly measured self-esteem (Bosson et al., 2000). If
Name Liking is an indicator of global self-esteem, it should be a better predictor of
psychological health than are the (arguably) domain-specific implicit measures used in
those studies. Furthermore, because Name Liking circumvents conscious reporting
biases and does not rely on conscious theories about the self, it should predict
psychological health over and above explicitly measured self-esteem.

Finally, Bosson et al. (2000) reported that implicit measures of self-esteem
worked best when self-esteem was primed by the completion of explicit measures of
self-esteem. Bosson et al. (2000) concluded that "order effects may raise concerns
about the 'implicitness' of some of the implicit self-esteem measures" (p. 641). This
concern is relevant to the use of the Name Liking measure in the previous studies,
because Name Liking was mainly administered after explicit measures of self-esteem
(see randomized order of measures across participants in Studies 8 and 9). It is thus

important to show that meaningful effects emerge when Name Liking is administered

prior to other measures of self-esteem. Such evidence would indicate that the validity of

the Name Liking measure does not rely on the completion of explicit measures

beforehand.

### 4.5.1   Method

*Participants*

190 Cardiff University undergraduate students (170 women, 14 men, and 6 did

not respond) completed this laboratory study for exchange of course credit in two large

class-room settings on individual computers. The language of the study was English.

The mean age of the participants was 18.62 years ($SD = 1.34$).

*Materials and Procedure*

After consenting to participate, participants completed a series of demographic

items. Next, participants completed the Name Liking measures, an explicit measure of

global self-esteem, and a measure of psychological health in the listed order. At the end

of the study, participants read a feedback page and were thanked for their participation.

Four to six weeks later, 118 of the initial participants (62%) completed the Name

Liking measures again over the internet. The Name Liking measures and the explicit

measure of global self-esteem ($\alpha = .92$) were identical to the measures used in Study 9.

The measure of psychological health is described below.

*Psychological Health.* Psychological health was operationalized via the 21-item

Beck Depression Inventory-II (BDI-II, Beck et al., 1996). The BDI-II is the most

widely used and best validated measure of depression, with depression being a core

component of psychological health (Sedikides et al., 2004). Each item of the BDI-II

represents a different marker of depression (e.g., "loss of energy", "crying", "suicidal thoughts or wishes"). Participants responded to each item using an item specific 4-point scale that indicated to what degree the specific symptom of depression applied to the participant ($\alpha = .90$).

### 4.5.2 Results and Summary

Table 4.3 shows all zero-order correlations between the measures used in this study. The first analysis examined the test-retest reliability of Name Liking. The correlation between scores at times 1 and 2 was high, $r = .85, p \leq .001$, whereas most other implicit self-esteem measures suffer from too low or barely acceptable test-retest reliability (Bosson et al., 2000).

Further, explicitly measured self-esteem and Name Liking were both significantly related to psychological health, $r = -.59, p \leq .001$, and, $r = -.29, p \leq .001$, respectively. To test whether Name Liking was related to psychological health over and above explicitly measured self-esteem, psychological health was regressed on Name Liking, while controlling for explicitly measured self-esteem. Name Liking predicted psychological health independently of explicitly measured self-esteem, $\beta = -.15, p \leq .01$. This finding supports the assertion that implicitly measured self-esteem relates to psychological health over and above explicitly measured self-esteem (e.g., Bosson et al., 2000; Shimizu & Pelham, 2004). Notably, previous studies were unable to support this assertion using other implicit measures (e.g., Bosson et al., 2000; Schimmack & Diener, 2003; Shimizu & Pelham, 2004).

Finally, Name Liking exhibited the same strength of relationship to explicitly measured self-esteem as in the previous studies, where Name Liking was mainly

assessed following other self-esteem measures, $r = .26$, $p \leq .001$. Further, as shown

above, theoretically sound relations were obtained between Name Liking and

psychological health. Thus, these results demonstrate that the validity of Name Liking

does not depend on the prior completion of an explicit measure of self-esteem.

Table 4.3

*Zero-Order Correlations Between all Measures used in Study 10.*

| N = 190 | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| (1) First Name Name Liking @ Time 1 | -- | | | | | | |
| (2) Surname Name Liking @ Time 1 | .41*** | -- | | | | | |
| (3) Full Name Name Liking @ Time 1 | .76*** | .77*** | -- | | | | |
| (4) First Name Name Liking @ Time 2 | .85*** | .35*** | .67*** | -- | | | |
| (5) Surname Name Liking @ Time 2 | .26** | .88*** | .70*** | .27** | -- | | |
| (6) Full Name Name Liking @ Time 2 | .57*** | .76*** | .85*** | .61*** | .78*** | -- | |
| (7) Beck Depression Inventory-II | -.32*** | -.17* | -.29*** | -.10 | -.03 | -.06 | -- |
| (8) Explicit Measure of Self-Esteem | .33*** | .10 | .26*** | .30*** | .00 | .18 | -.59*** |

*Note.* *** = ($p \leq .001$), ** = ($p \leq .01$), * = ($p \leq .05$).

## 4.6     Study 11

In Koole et al.'s (2001) third study, participants with a dispositionally fast (as opposed to slow) response style on explicit measures of self-esteem manifested a stronger relation between these measures and implicit measures of self-esteem. This finding fits dual-attitude theories of self-esteem, because implicit self-esteem is assumed to be based on faster, automatic processes, rather than slower, controlled processes (Epstein & Morling, 1995). However, this finding also fits single-attitude theories, because people might be more honest when they respond quickly to self-report measures (Dijksterhuis et al., 2008; Olson et al., 2007). Regardless of which theory applies, it should be possible to replicate Koole et al.'s (2001) finding with the Name Liking measure. This replication would further attest to the validity of the measure as an implicit measure of self-esteem.

Study 11 also tried to replicate Study 10's finding that Name Liking predicts psychological health over and above explicitly measured self-esteem. This time, psychological health was operationalized broadly, by using a composite score of anxiety, depression, and life satisfaction.

### 4.6.1   Method

*Participants*

357 participants (283 women, 73 men, and 1 did not respond) completed this online-study (www.online-studies.org). The study was advertised on John Krantz's web portal for online-studies. The language of the study was English. The mean age of the

participants was 25.41 years ($SD$ = 3.57). The majority of the participants were from

North America (92%).

*Materials and Procedure*

After consenting to participate, participants completed a series of demographic

items. Next, participants completed an explicit measure of global self-esteem, a

measure of affect-based psychological health, a measure of cognition-based

psychological health[5], and the Name Liking measures in the listed order. At the end of

the study, participants read a feedback page and were thanked for their participation.

The Name Liking measures and the multi-item explicit measure of global self-esteem

($\alpha$ = .93) were identical to the measures used in Study 8. The measures of psychological

health are described below.

*Psychological health.* To tap psychological health broadly, we used an affective

and a cognitive measure of this construct. The affective measure was the Hospital

Anxiety and Depression Scale (Zigmond & Snaith, 1983), which contains 14 items.

Example items are "I feel tense or 'wound up'", and "I feel as if I am slowed down" ($\alpha$

= .87). Participants responded to each item using a 4-point scale ranging from 1 (*never*)

to 4 (*most of the time*). As in previous research (e.g., Zigmond & Snaith, 1983), scores

on the anxiety and depression scales were highly correlated, so they were combined to

form one scale.

The cognitive component of psychological health was assessed via the

Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), which

contains five items. Example items are "In most ways my life is close to my ideal", and

"If I could live my life over, I would change almost nothing" ($\alpha$ = .90). Participants

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[5]  The psychological health measures were included in the study after the first 154

participants. Thus, only 203 of the 357 participants completed these measures.

responded to each item using a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*applies completely*).

Similar to previous studies (e.g., Schimmack & Diener, 2003), the affective and the cognitive measures of psychological health were highly correlated, $r = .55$, $p = .001$. Thus, these scales were combined to form one scale, such that high scores reflected a general sense of high psychological health.

### 4.6.2 Results and Summary

Table 4.4 shows all zero-order correlations between the measures used in this study. We tested whether the relation between implicitly and explicitly measured self-esteem was especially strong when the response latencies of the explicit measure were short. This test was conducted using a multiple regression analysis that entered explicitly measured self-esteem (centred), the response time of explicitly measured self-esteem (centred)[6], and the cross-product of these two variables as predictors of Name Liking. As predicted, there was a significant interaction between explicitly measured self-esteem and response time, $\beta = -.11$, $p \leq .05$. Figure 4.1 shows that explicitly measured self-esteem was a better predictor of Name Liking for participants who

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[6]  Response times greater than 20 seconds per item were excluded because such long responses can be considered as an indication of exceptionally low attention to the item. After excluding these trials, the internal consistency of the response times to the multi-item explicit measure of self-esteem was very high ($\alpha = .90$), suggesting that the mean across these response times is a reliable indicator of an individual's response style (i.e., spontaneous vs. deliberate).

responded more quickly to the explicit measure. Thus, Koole et al.'s (2001, Study 3)

finding was replicated with the Name Liking measure.

Psychological Health was related to explicitly measured self-esteem, $r = .67$, $p \leq$

.001, and Name Liking, $r = .36$, $p \leq .001$. Further, a simultaneous regression revealed

that Name Liking predicted psychological health even when explicitly measured self-

esteem was controlled, $\beta = .12$, $p \leq .05$. Thus, we replicated Study 10 using a broader

operationalization of psychological health.

Table 4.4

*Zero-Order Correlations Between all Measures used in Study 11.*

| N = 357 | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| (1)  First Name Name Liking | -- | | | |
| (2)  Surname Name Liking | .45*** | -- | | |
| (3)  Full Name Name Liking | .77*** | .77*** | -- | |
| (4)  Explicit Measure of Self-Esteem | .26*** | .31*** | .40*** | -- |
| (5)  Subjective Well-Being (N = 202) | .31*** | .34*** | .36*** | .67*** |

*Note.* *** = (p ≤ .001), ** = (p ≤ .01), * = (p ≤ .05).

*Figure 4.1.* The Moderating Effect of Response Time on the Relation between Implicitly and Explicitly Measured Self-Esteem (Low = $M - 2SD$, High = $M +$ $2SD$).
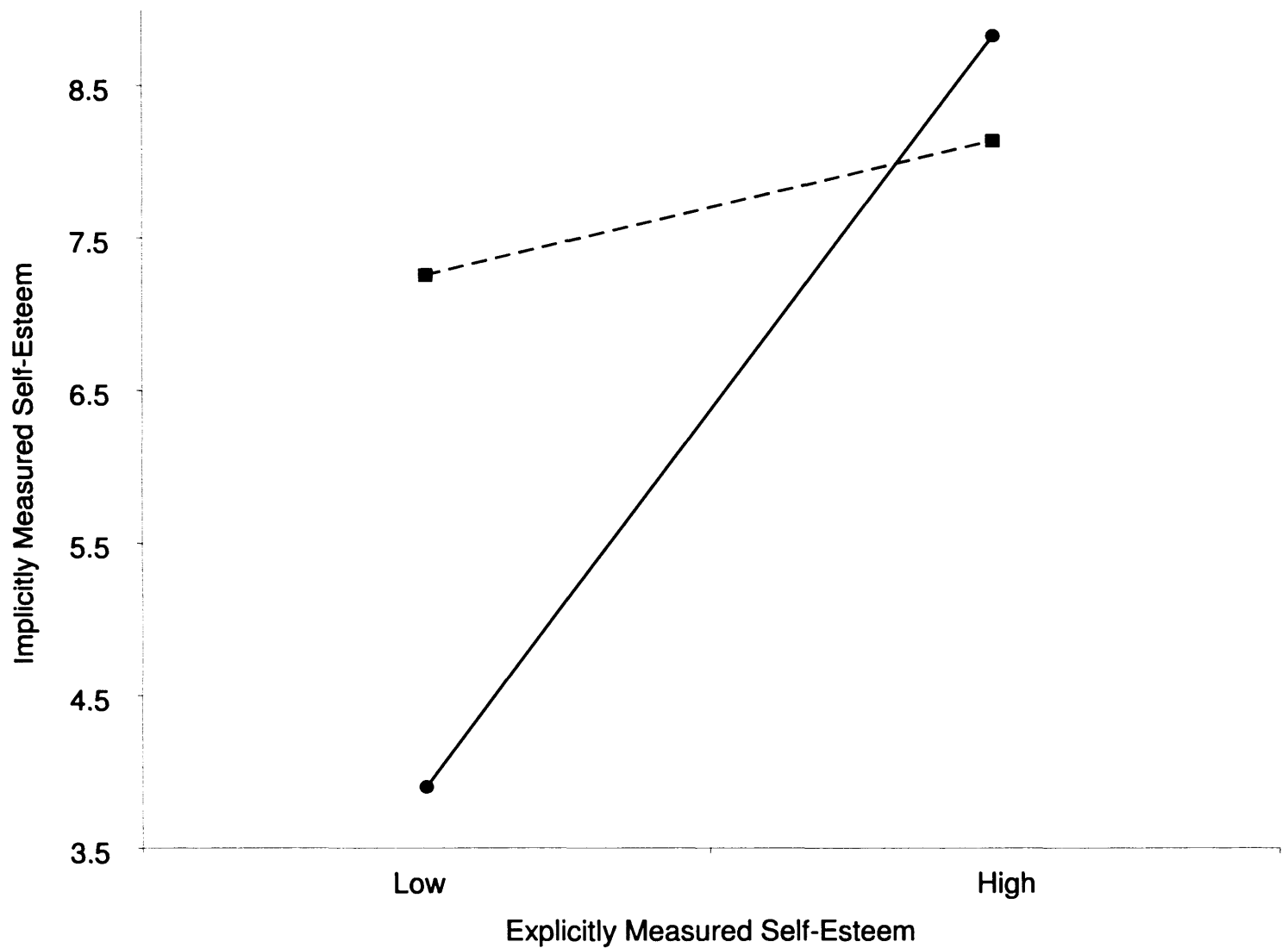


*Note.* Dashed line = relatively slow response on explicit measure; solid line = relatively fast response on explicit measure.

## 4.7    Study 12

The above interpretation of Study 11 rests on the assumption that response times mainly depend on the amount of cognitive deliberation. This follows from both single-attitude and dual-attitude theories because faking on explicit self-esteem measures (cf. single-attitude theories) and the activation of explicit self-esteem (cf. dual-attitude theories) should both require cognitive capacity (e.g., Koole et al., 2001; Paulhus, 1993; Wilson et al., 2000). Nonetheless, a more direct test of this assumption is to manipulate cognitive capacity. Thus, following Koole et al.'s (2001) validation of the Name-Letter-Task, Study 12 extended Study 11 by manipulating cognitive load while participants completed the explicit measure of self-esteem. Koole et al.'s Study 4 showed that the relation between implicitly measured and explicitly measured self-esteem became stronger when participants were under cognitive load while completing the explicit measure. We expected to replicate this finding using the Name Liking measure.

Moreover, we wanted to demonstrate that Name Liking predicts psychological health even in a context where explicitly measured self-esteem fails to predict psychological health. Spalding and Hardin (1999) found that implicitly measured self-esteem is a better predictor of observer-reported anxiety during a demanding interview than is explicitly measured self-esteem. Replication of this pattern using the Name Liking measure would further bolster the argument that Name Liking is a valid measure of self-esteem and in this regard is at least as useful as other implicit measures of self-esteem.

### 4.7.1  Method

*Participants*

35 undergraduate students from the University of Tübingen (18 women and 17 men) completed this laboratory study in individual sessions. The language of the study was German. All participants were German.

*Materials and Procedure*

After consenting to participate, participants completed a series of demographic items. Next, participants completed an explicit measure of self-esteem without cognitive load, a parallel version of the same explicit measure under cognitive load, the Name Liking measures, and were subjected to an anxiety-inducing interview in the listed order. At the end of the study, participants were carefully debriefed (funnel debriefing, cf. Bargh & Chartrand, 2000; Fitzsimons & Bargh, 2003), thanked, and paid (6 Euro) for their participation. The Name Liking measures were identical to the measures used in Studies 8 to 11. The remaining measures are described below.

*Explicit Self-Esteem Without Cognitive Load.* In the no load trait endorsement task (closely modelled after Paulhus, 1993, and Koole et al., 2001) participants were asked to respond as fast as possible to 15 moderately positive and to 15 moderately negative words (word set 1), which were taken from a large German norm list of trait words (Hager & Hasselhorn, 1994, Table 4-3).[7] Participants were instructed to press keys of the keyboard with either the right or the left index finger to either indicate that the word applies or does not apply to them. Each participant completed three practice trails before the actual task.

*Explicit Self-Esteem Under Cognitive Load.* The load trait endorsement task was identical to the no load task except that participants responded to different words (word

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[7] Moderately, rather than extremely, evaluative words were selected in order to avoid ceiling and bottom effects in the trait endorsement task.

set 2) from the same norm list[8] and participants were instructed to rehearse a given 8-digit number throughout the whole task. Participants were informed that they would have to report the number after the trait endorsement task is finished. At the end of the task, participants entered the 8-digit number.

*Anxiety Inducing Interview.* Closely modelled after Spalding and Hardin's (1999) anxiety inducing interview, participants were seated in front of a camera and told that they would be videotaped during the following interview, which ostensibly had the purpose of assessing participants' emotional health. To begin, the experimenter asked the participants to describe their positive and their negative aspects of themselves. During this phase, the experimenter, who was blind to participants' self-esteem scores, ostensibly made a lot of notes and responded to participants' descriptions of themselves with phrases like "ah, that is interesting" and "mh, I see". After that, participants were asked to describe a picture that was taken from a projective test and finally, participants had to indicate their feelings and emotions toward a couple of verbal stimuli (e.g., turtle). In total, the interview took about 5 minutes.

*Observer-Reported Anxiety.* Using 7-point scales ranging from 1 (*does not apply at all*) to 7 (*applies completely*), the experimenter rated participants' anxiety directly after the interview on three items: "The participant showed anxiety during the interview", "The participant's hands have been jittery", and "The participant showed a closed and defensive seating position". Using the Spearman-Brown correction, the internal consistency of the three items ($\alpha = .60$) was adequate.

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[8]    Half of the participants received word set 1 as stimuli for the no load condition and word set 2 as stimuli for the load condition whereas the other half received word set 2 as stimuli for the no load condition and word set 1 as stimuli for the load condition.

## 4.7.2 Results and Summary

Table 4.5 shows all zero-order correlations between the measures used in this study. The first principal analysis tested whether Name Liking was more strongly related to explicitly measured self-esteem under cognitive load than without load. Because each participant completed the explicit measure of self-esteem both under load and without load, the analysis regressed Name Liking on load self-esteem and no-load self-esteem (both entered simultaneously). Name Liking was related to explicitly measured load self-esteem, $\beta = .55$, $p \leq .05$, but unrelated to explicitly measured no-load self-esteem, $\beta = .05$, $ns$. This finding complements the result of Study 11 in showing that spontaneous and non-deliberate responding on explicit self-esteem measures can boost the relation between these measures and Name Liking. However, an alternative explanation should be noted. Participants completed the Name Liking measure always closer in time to the load version of the explicit self-esteem measure than to the no-load version. Thus, order effects may have played a role in the obtained results. Although this alternative explanation is possible, three arguments render this alternative explanation less likely than one may initially think. First, the results are consistent with and compliment the results obtained in Study 11. More importantly, a filler-questionnaire has been administered between the explicit self-esteem measures and the Name Liking measure. Moreover, the self-esteem measures involved in the current analyses are trait measures and show high test-retest reliability. Nonetheless, future research should further examine the conditions that moderate the relation between explicit measures of self-esteem and Name Liking. One may for example experimentally vary self-presentation motivation before explicitly assessing self-esteem and test whether the relation between explicitly measured self-esteem and Name Liking

is highest under conditions where self-presentation motivation is close to zero.

Similarly, one may put people under time-pressure while completing the explicit

measure of self-esteem and show that time pressure increases the relation between

explicitly measured self-esteem and Name Liking.

The next analysis tested whether Name Liking is a better predictor of observer-

rated anxiety during an anxiety-inducing interview than is explicitly measured self-

esteem. Therefore, we simultaneously regressed observer-rated anxiety on Name Liking

and explicitly measured self-esteem (i.e., no-load self-esteem). As expected, Name

Liking was negatively related to anxiety, $\beta = -.41$, $p \leq .05$, whereas explicitly measured

self-esteem was unrelated to anxiety, $\beta = -.13$, $ns$. Together with Studies 10 and 11, this

study suggests that Name Liking is at least as valid as other implicit measures and

predicts important outcomes (psychological health and state anxiety) over and above

explicit measures of self-esteem. Again, this result buttresses the argument that Name

Liking is not merely a noisy measure of explicit self-esteem.

Table 4.5

*Zero-Order Correlations Between all Measures used in Study 12.*

| $N = 35$ | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| (1) First Name Name Liking | -- | | | | |
| (2) Surname Name Liking | .21 | -- | | | |
| (3) Full Name Name Liking | .55*** | .70*** | -- | | |
| (4) Explicit Measure of Self-Esteem – Cognitive Load | .29 | .27 | .48** | -- | |
| (5) Explicit Measure of Self-Esteem – No Cognitive Load | .33* | .31 | .59*** | .78*** | -- |
| (6) Observer-Rated Anxiety | -.18 | -.49** | -.47** | -.32 | -.44** |

*Note.* *** = ($p \leq .001$), ** = ($p \leq .01$), * = ($p \leq .05$).

## 4.8    Study 13

Explicit measures of self-esteem have been empirically linked to the impression

management component of socially desirable responding (e.g., Greenwald & Farnham,

2000; Riketta, 2004). This finding has been labelled the "Achilles' heel" of explicit

measures of self-esteem (Bosson et al., 2000). One crucial advantage of implicit

measures, then, is that they are less likely to be influenced by impression management

than explicit measures (Bosson et al., 2000). Study 13 tested whether Name Liking

does have this virtue; that is, whether it is unrelated to impression management.

A second, distinct self-presentational strategy, and another component of

socially desirable responding, is self-deceptive enhancement. This strategy is defined as

any positively biased response that the participant believes to be true. Paulhus (1991)

argues that self-deceptive enhancement is a valid component of self-esteem. In line

with this claim, prior research has revealed a positive relation between explicitly

measured self-esteem and self-deceptive enhancement (e.g., Raskin et al., 1991;

Paulhus, 1991; Riketta, 2005). It is not entirely clear whether a positive relation

between *implicitly* measured self-esteem and self-deceptive enhancement should be

expected (Riketta, 2005). Although some researchers have argued that implicitly

measured self-esteem should be independent of self-deceptive enhancement (Epstein &

Morling, 1995), Paulhus (1991) assumes that self-deceptive enhancement is an

automatic process. In the latter case, it may be positively related to implicitly measured

self-esteem. Thus, the answer to this question appears to depend on whether self-

deceptive enhancement is truly automatic. Given our evidence for the validity of the

Name Liking measure, we expected that the correlation between self-deceptive

enhancement and Name Liking would be conclusive in this regard.

## 4.8.1    Method

*Participants*

241 participants (187 women, 52 men, and 2 did not respond) completed this

online-study (www.online-studies.org). The study was advertised on John Krantz's web

portal for online-studies. The language of the study was English. The mean age of the

participants was 23.38 years ($SD$ = 9.61). The majority of the participants were from

North America (95%).

*Materials and Procedure*

After consenting to participate, participants completed a series of demographic

items. Next, participants completed measures of self-deceptive enhancement,

impression management, and Name Liking in the listed order. At the end of the study,

participants read a feedback page and were thanked for their participation. The Name

Liking measures were identical to the measures used in Studies 1 to 5. The remaining

measures are described below.

*Self-deceptive enhancement and impression management.* Participants

completed the Balanced Inventory of Desirable Responding (BIDR) Version 6 – Form

40 (Paulhus, 1988). The inventory is divided into a 20-item Self-Deceptive

Enhancement Scale and a 20-item Impression Management Scale. Example items for

the Self-Deceptive Enhancement Scale are "I have not always been honest with myself"

and "I rarely appreciate criticism" (reverse-scored) ($\alpha$ = .69). Example items for the

Impression Management Scale are "I never cover up my mistakes" and "I sometimes

tell lies if I have to" (reverse-scored) ($\alpha$ = .79). Participants responded to each item

using a 7-point scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*).

## 4.8.2   Results and Summary

Table 4.6 shows all zero-order correlations between the measures used in this study. To disentangle the empirical overlap between self-deceptive enhancement and impression management, Paulhus (1991) suggests controlling for one when testing for the effects of the other. Therefore, we regressed Name Liking simultaneously on impression management and self-deceptive enhancement. Impression management was unrelated to Name Liking, $\beta = .03$, $ns$, whereas self-deceptive enhancement was associated with higher Name Liking, $\beta = .23$, $p \leq .001$.

These results indicate that Name Liking overcomes a crucial limitation of explicit self-esteem measures in that it is unrelated to impression management. Moreover, the positive relation between Name Liking and self-deceptive enhancement is consistent with Paulhus's (1991) argument that self-deceptive enhancement operates automatically. This argument suggests that self-deceptive enhancement should colour responses to implicit (and not only explicit) measures of self-esteem, and the obtained data support this reasoning.

Table 4.6

*Zero-Order Correlations Between all Measures used in Study 13.*

| $N = 241$ | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| (1)   First Name Name Liking | -- | | | |
| (2)   Surname Name Liking | .39*** | -- | | |
| (3)   Full Name Name Liking | .76*** | .69*** | -- | |
| (4)   Impression Management | .02 | .10 | .11 | -- |
| (5)   Self-Deceptive Enhancement | .14* | .23*** | .24*** | .35*** |

*Note.* *** = ($p \leq .001$), ** = ($p \leq .01$), * = ($p \leq .05$).

## 4.9     Discussion

Past research found that implicit measures of self-esteem are not consistently

related to self-reported psychological health (Bosson et al., 2000; Schimmack &

Diener, 2003; Shimizu & Pelham, 2004). In the rare cases where implicit measures of

self-esteem *did* relate to self-reported psychological health, these relations were

rendered non-significant as soon as explicit measures of self-esteem were controlled.

This pattern of results concerning the relationship between implicitly measured self-

esteem and self-reported psychological health questions the validity of the idea that

self-esteem and psychological health are strongly related (Baumeister et al., 2003;

Diener & Diener, 1995; Sedikides et al., 2004). The weak relationship between

implicitly measured self-esteem and psychological health is especially troublesome for

advocates of a single-attitude view of self-esteem (Dijksterhuis et al., 2008; Farnham et

al., 1999; Olson et al., 2007), because these researchers often dismiss the validity of

explicit measures of self-esteem (Dijksterhuis et al., 2008; Farnham et al., 1999). If

explicit measures of self-esteem are dismissed, implicit measures of self-esteem build

the only ground to evaluate the question whether self-esteem is related to psychological

health. As shown before, previous implicit measures of self-esteem are generally

unrelated to self-reported psychological health. Together then, single-attitude theorists

of self-esteem, who dismiss the validity of explicit measures (Dijksterhuis et al., 2008;

Farnham et al., 1999) would have to conclude that self-esteem is unrelated to

psychological health.

An alternative to this conclusion may be that existent implicit measures of self-

esteem do not assess global self-esteem, eliciting a need for the development of an

implicit measure of global self-esteem, which may reveal consistent relations between

implicitly measured self-esteem and self-reported psychological health. In support of

this assumption, past research and theory suggests that existing implicit measures of

self-esteem assess different facets of self-esteem, rather than global self-esteem

(Bosson et al., 2000; Campbell et al., 2007; Sakellaropoulo & Baldwin, 2007; Wentura

et al., 2006). Thus, the studies described in this chapter aimed to develop an implicit

measure that assesses global, rather than domain specific, self-esteem.

Building on the mere-ownership effect (Koole et al., 2001), these studies

examined an implicit measure that simply asks participants to evaluate their name with

a single item. We expected that Name Liking should capture global self-esteem more

adequately than the Name-Letter-Task and the Self-Esteem IAT, because the evaluation

of one's name is particularly representative of the self as a whole (Koole & Pelham,

2003). In line with this argument, the evaluation of one's full name was the most

suitable implicit measure of self-esteem, although the first name and surname versions

of Name Liking produced similar results. In fact, the first name and surname versions

correlated positively with each other across all six studies, $r(1090) = .42, p \leq .001$ (see

also Tables 3 to 8). This supports the assumptions that responses to these items, too, are

driven by the mere-ownership effect.

Support for Name Liking as an *implicit* measure of *global* self-esteem was

obtained in several ways. For one, Name Liking was positively related to the Name-

Letter-Task and the Self-Esteem IAT, even though the latter two tasks were unrelated.

These relations remained virtually identical even after controlling for explicitly

measured self-esteem. This latter finding provides first support that Name Liking is not

merely a poor proxy for explicitly measured self-esteem. In addition, a validation

criterion developed by Koole et al. (2001) was used to test the "implicitness" of Name

Liking. Koole et al. (2001) expected that the implicit-explicit relation is especially

strong for people who (a) are dispositionally prone to responding quickly to the explicit

measure and (b) are under cognitive load. Both findings were replicated with the Name

Liking measure. Furthermore, Study 12 replicated Spalding and Hardin's (1999)

finding that implicit measures of self-esteem predict observer-reported anxiety, whereas

explicit measures do not. Moreover, a post-experimental probe that asked participants

what they had indicated when completing the Name Liking measure revealed that not a

single participant reported responding on the basis of his or her self-esteem. On the

whole, these findings suggest that the Name Liking measure is not just a proxy for an

explicit measure of self-esteem. Moreover, the findings show that Name Liking is at

least as valid as other implicit measures of self-esteem and has predictive power over

and above explicit measures of self-esteem.

Capitalizing on the validity of our Name Liking measure, two large samples

from different cultures (USA and United Kingdom) were used to test whether implicitly

measured global self-esteem predicts psychological health. Analyses of these data

revealed a consistent positive relationship between implicitly measured global self-

esteem and psychological health. Moreover, this relationship remained significant even

after controlling for explicitly measured self-esteem. These findings provide the first

consistent support for the claim that implicitly measured self-esteem is positively

related to psychological health (e.g., Bosson et al., 2000). Additionally, these findings

buttress our argument that Name Liking is more than an imprecise measure of explicit

self-esteem, given that Name Liking showed predictive validity over and above explicit

measures of self-esteem.

Despite the manifold and consistent empirical evidence that Name Liking

differs from explicit measures of self-esteem in theoretically meaningful ways,

especially the rather high correlation between Name Liking and explicit measures of

self-esteem may lead to questions regarding the implicitness of the Name Liking

measure. Study 8 allows a direct comparison of the effect sizes of the relation between

Name Liking and explicitly measured self-esteem on the one hand and Name Liking

and other implicit measures of self-esteem on the other hand. Study 8 shows that these

effect sizes are virtually identical. Is it justifiable to label our Name Liking measure an

implicit measure of self-esteem given that it relates as highly to explicit measures than

to implicit measures? We believe that it is. Specifically, past theory and research has

suggested that existent implicit measures of self-esteem fail to assess global self-esteem

but rather assess domain-specific self-esteem (Bosson et al., 2000; Campbell et al.,

2007; Sakellaropoulo & Baldwin, 2007; Wentura et al., 2006). If this is indeed the

case—and the null-relation between existent implicit measures has been cited as

suggestive for this (Bosson et al., 2000; see also Study 8)—both, single-attitude

theories as well as dual-attitude theories of self-esteem readily explain the pattern of

relations obtained between Name Liking and explicit measures of global self-esteem as

well as implicit measures of domain-specific self-esteem. Adopting a single-attitude

perspective—that endorses the view that explicit measures of self-esteem are

hopelessly confounded by social desirability and lack of introspection—an overlap

between a valid implicit measure of global self-esteem (i.e., Name Liking) and a largely

invalid explicit measures of self-esteem of about 15% (see Studies 8 to 12) seems about

right. At the same time the overlap between explicit measures of global self-esteem and

domain-specific self-esteem is typically about 20% (see Brown, 1998; see also Study

9). Given that at least existent implicit measures of self-esteem suffer from somewhat

lower internal consistency than explicit measures (e.g., Bosson et al., 2000) an overlap

between implicitly measured global self-esteem and implicitly measured domain-

specific self-esteem of about 8% (see Study 8) is within the realm of expectations.

Adopting a dual-attitude perspective, it is not surprising that two global but distinct constructs (i.e., global explicit self-esteem and global implicit self-esteem) are similarly strongly related than a global construct and one of its facets (global implicit self-esteem and domain-specific implicit self-esteem). Finally, we wish to note in respect to this issue that the categorization of measures in either an explicit category or an implicit category may be oversimplified. For example, there is room within dual-attitude theories that the Self-Esteem IAT may in fact assess people's implicit self-esteem (or facets of it), but the name-letter task may assess people's explicit self-esteem (or facets of it) without being confounded by social desirability. Such a perspective may also explain why the two measures are not related to each other. For our Name Liking measure such a position may mean that this measure assesses partly aspects of the implicit and partly aspects of the explicit self-concept. Clearly, it is too early to make any definite statement about the processes that underlie *all* implicit and explicit measures of self-esteem. Nonetheless, the Name Liking measure is an interesting measure that promises to be a useful tool in future endeavours to understand the function and nature of self-esteem and it has already contributed to a better understanding of the relation between self-esteem and psychological health.

Another interesting question for future research is whether Name Liking is a valid measure of self-esteem in Eastern, collectivistic cultures, and not only in Western, individualistic cultures, as examined here (US, UK, and Germany). The tendency to link objects to the self may be less strong in relatively non-materialistic, (i.e., Eastern) cultures than in materialistic (i.e., Western) cultures, which may make Name Liking less suitable for assessing self-esteem in Eastern cultures. Alternatively, a person's name is clearly of less material value than other self-related objects, such as personal belongings. Furthermore, admitting to thinking very positively about oneself (i.e.,

indicating high self-esteem on explicit measures) violates the cultural norms of many

Eastern societies. Therefore, the Name Liking measure may be even more suitable in

Eastern cultures. This latter position is consistent with studies showing the predictive

validity of other mere-ownership based implicit measures of self-esteem (evaluation of

name letters and birthday numbers) in Eastern cultures (Kitayama & Karasawa, 1997).

Thus, an important topic for future research is to test whether Name Liking relates more

or less strongly to psychological health in collectivistic than in the individualistic

cultures. Diener and Diener (1995) have shown that self-esteem has a stronger effect on

life satisfaction in individualistic than in collectivistic cultures. As argued above, the

validity of explicit measures of self-esteem is questionable in collectivistic cultures (see

also Yamaguchi, Greenwald, Banaji, et al., 2007). Thus, Diener and Diener's finding

may be due to the invalidity of explicit measures of self-esteem in collectivistic cultures

rather than due to actual differences in the effect of self-esteem on psychological

health. The Name Liking measure as an implicit measure of global self-esteem should

not be subject to reporting biases exerted by cultural norms and thus may be an

especially suitable measure to test whether the effect of self-esteem on psychological

health varies cross-culturally.

# Chapter 5

# General Discussion

## 5.1 Chapter Overview

In the next section, I summarize the main research findings across the three empirical chapters (Chapters 2 to 4). Most of the specific implications of each line of research have been elucidated in the discussion sections of the individual chapters. Therefore, this summary focuses on the broader, inter-related implications of the research for understanding the relationship between self-esteem and psychological health.

Furthermore, this summary is accompanied by descriptions of potential future research, including additional relevant research that my collaborators and I have conducted subsequent to the publication of the research reported in the empirical chapters. Much of this research is still in progress and therefore not definite. Still, drawing on this research may give the reader a better idea where the research that started with my postgraduate studies may lead in the future.

In the Introduction to this thesis, I highlighted the potential complexity of the relationship between self-esteem and psychological health. In the remainder of this chapter, it will become clear that the research conducted by my collaborators and me underscores this complexity. Nonetheless, I wish to close this thesis by suggesting a model that may help to integrate past research, the research presented in this thesis, and the research that my collaborators and I are currently conducting. Although it seems impossible that any model of the relationship between self-esteem and psychological health can do justice to all the findings that have been reported in the literature

(including this thesis), the model proposed here will make a significant step by focusing

on elements that have been shown to explain the largest amount of variance in the

relationship between self-esteem and psychological health, while acknowledging the

role of several other processes and influences.

## 5.2  Review of the Main Findings

In the Introduction to this thesis, I have highlighted the fact that the relationship

between self-esteem and psychological health is far from being fully understood.

Specifically, despite a total of over 10,000 studies on the relationship between self-

esteem and psychological health, the directions, dynamics, and processes that underlie

this relationship are still not entirely clear. The literature review presented in the

Introduction pointed towards a need to conduct research on several urgent topics—three

of which are conducted in this thesis. First, my literature review pointed toward the

need to investigate the effects of psychological health on self-esteem, while focussing

on the processes that underlie such effects. Second, the literature review suggested that

there is a need for research investigating the role of belongingness in the relationship

between self-esteem and psychological health, while extending belongingness research

from a pure analysis of amount of belongingness to the simultaneous analysis of

amount and unconditionality of belongingness. Finally, the review identified a need to

re-examine the relationship between implicitly measured self-esteem and psychological

health, while using implicit measures of global self-esteem, rather than the implicit

measures of domain-specific self-esteem that have been used in past research.

Before describing a model that helps to integrate these three topics, it is useful

to first provide brief summaries of the three sets of studies examining the topics. After

reviewing these sets of studies and outlining future research aims relevant to each one,

I'll turn to considering some more general aspects that cut across all three topics.

### 5.2.1   Review of the First Empirical Chapter

The first empirical chapter (Chapter 2) presented research in which my

collaborators and I (see also Gebauer et al, 2008a) found evidence consistent with the

hypothesis that psychological health, operationalized as chronic mood, has effects on

self-esteem when it comes to recalling positively and negatively valenced selves (i.e.,

past episodes and past traits). This research has a specifically strong focus on the

processes that underlie these effects. The research presented in Chapter 2 is relevant

because there is virtually no research examining the effect of psychological health on

self-esteem. The few studies that examine such effects mainly use longitudinal designs

(Ormel et al., 2004; Orth et al., 2008; Shahar & Davidson, 2003). However, these

studies remained inconclusive because they revealed mixed results concerning the

effect of psychological health on self-esteem. More importantly, these studies did not

provide empirical tests of the processes that underlie a possible effect of psychological

health on self-esteem. The research presented in Chapter 2 is unique in that it

repeatedly provides empirical evidence in line with the hypothesis that chronic mood

has an effect on self-esteem in the realm of recalling valenced selves, while examining

the process that underlies this effect.

In a nutshell, Chapter 2 shows that chronically happy people perceive mood

congruence between a recalled positive self and the current self. Mood congruence

elicits feelings of temporal recency. Temporal recency elicits assimilation effects of the

recalled positive self on one's current self-esteem (Schwartz & Bless, 1992, 2007).

Hence, our data suggest that recalling positive past selves increases self-esteem for chronically happy people. Further, my collaborators and I showed that chronically sad people perceive mood incongruence between a recalled positive self and the current self. Mood incongruence elicits feelings of temporal distance, and temporal distance elicits contrast effects of the recalled positive self on one's current self-esteem (Schwartz & Bless, 1992, 2007). Hence, our data suggested that recalling positive past selves decreases self-esteem for chronically sad people.

The reverse is true for recalling negative past selves. The results obtained in Chapter 2 show that chronically happy people perceive mood incongruence between a recalled negative self and the current self. Mood incongruence elicits feelings of temporal distance, and temporal distance elicits contrast effects of the recalled negative self on one's current self-esteem (Schwartz & Bless, 1992, 2007). Hence, our data suggests that recalling negative past selves decreases self-esteem for chronically happy people. Further, Chapter 2 shows that chronically sad people perceive mood congruence between a recalled negative self and the current self. Mood congruence elicits feelings of temporal recency. Temporal recency elicits assimilation effects of the recalled negative self on one's current self-esteem (Schwartz & Bless, 1992, 2007). Hence, our data suggests that recalling negative past selves decreases self-esteem for chronically sad people.

Together then, this research is in line with the hypothesis that recalling either positive or negative past selves increases self-esteem for chronically happy people, but decreases self-esteem for chronically sad people. My collaborators and I have termed this model the Mood Congruence Model (MCM) of Temporal Comparison.

*Future Research*

The MCM attributes important roles to chronic mood and perceptions of mood congruence. It is sensible to ascribe the concept of mood a primary role, because of the central role of the hedonic principle in people's lives (Freud, 1920; Kahneman et al., 1999; Sedikides & Gregg, 2008). However, it can be argued that the processes described in the MCM are more generally applicable to perceptions of congruence between a recalled and the current self *in the most salient feature of the recalled self.* This assumption is in line with Chapter 2's findings that mood is the most salient feature when it comes to recalling valenced selves. But what if people recall past selves where other features are more salient? For example, when recalling attachment experiences with one's parents in childhood, parents' behaviour should be more salient than mood. If so, temporal distance perceptions between a recalled attachment episode with parents and the current self may not be moderated by chronic mood, but instead by chronic attachment patterns. People who generally see other people as loving and caring (positive attachment model of others/low attachment avoidance; Brennan, Clark, & Shaver, 1998) may perceive a recalled positive attachment episode from one's childhood as temporally recent and a recalled negative attachment episode as temporally distant. Conversely, people with a negative attachment model of others may perceive a recalled positive attachment episode from one's childhood as temporally distant and a recalled negative attachment episode as temporally recent. According to the Inclusion-Exclusion Model of Social Judgment (IEM; Schwartz & Bless, 1992, 2007), these divergent perceptions of temporal distance should increase attachment security for people with a positive attachment model of others, but decrease attachment security for people with a negative attachment model of others. Consistent with the MCM, these divergent effects should occur independent of whether people recall positive or negative attachment episodes with one's parents in childhood.

Gebauer, Broemer, Haddock, and von Hecker (under review) repeatedly found support for exactly these hypotheses. Specifically, the chronic attachment model of others and neither chronic mood nor the chronic attachment model of self moderated the effect of recalling valenced attachment episodes with one's parents in childhood on perceived temporal distance. In turn, perceived temporal distance moderated the effect of recalled valenced attachment episodes on current attachment security.

These findings have at least two implications. First, Bowlby's attachment theory (Bowlby, 1969, 1973, 1980) assumes that the mental representation of positive past attachment episodes leads to effects that are similar to those evoked by the physical presence of an attachment figure. As a consequence of this assumption, attachment researchers often prime secure attachment by asking people to think about their attachment figures (Mikulincer & Arad, 1999; Mikulincer, Birnbaum, Woddis, Nachmias, 2000; Mikulincer & Shaver, 2001) or to recall positive past attachment experiences (Mikulincer et al., 2003; Mikulincer et al., 2001a). Our research showed that activating positive past attachment episodes only increases attachment security for people with a positive attachment model of others, but decreases attachment security for people with a negative attachment model of others.

The second and theoretically more important implication is that the Mood Congruence Model (MCM) of Temporal Comparison turns out to be a special application of a broader congruence model of temporal comparison, which my collaborators and I termed the General Congruence Model (GCM) of Temporal Comparison. The key difference between the MCM and the GCM is the MCM's narrower focus on *mood* congruence. The GCM subsumes the MCM by showing that it is not mood congruence per se that determines temporal distance perceptions between a recalled and the current self, but that it is congruence concerning the *most salient*

*feature of the recalled self* that determines assimilation and contrast effects. Future

research should test further applications of the GCM and should test boundary

conditions to it. For example, Gebauer, Broemer, Maio, and Haddock (in preparation)

are currently investigating whether religious people increase their religiosity by either

recalling personal religious or non-religious behaviours, whereas non-religious people

should decrease their religiosity by either recalling personal religious or non-religious

behaviours.

### 5.2.2   Review of the Second Empirical Chapter

The second empirical chapter (Chapter 3) presented research in which

belongingness played a crucial role in understanding of the relationship between self-

esteem and psychological health. Whereas past research has exclusively focussed on

the amount of belongingness, my collaborators and I constructed and validated a self-

report scale of belongingness that consists of two independent dimensions: amount of

belongingness and unconditionality of belongingness. Both dimensions were

independently related to better psychological health in three studies. In line with past

research, amount of self-esteem completely mediated the relationship between amount

of belongingness and psychological health. This finding is consistent with Sociometer

Theory's (Leary, 2006; Leary & Baumeister, 2000; Leary & Cox, 2007; Leary et al.,

1995) hypothesis that amount of self-esteem is a meter of a person's amount of

belongingness.

Further extending past research, the research presented in Chapter 3 revealed

that contingent self-esteem (Deci & Ryan, 1995; Kernis, 2000, 2003; Kernis &

Goldman, 2003, 2006; Kernis & Paradise, 2002) completely the relationship between

unconditionality of belongingness and anxiety—but not depression (Figure 3.1). This

finding is important in three ways. First, it suggests that unconditionality of

belongingness is a possible source of non-contingent self-esteem. Second, it suggests a

way to integrate contingent self-esteem into the belongingness framework in general

and into Sociometer Theory in particular. Finally, and most importantly for this thesis,

these findings provide a more complete picture of the interrelations between

belongingness, self-esteem, and psychological health.

*Future Research*

I regard the research presented in Chapter 3 as a first step towards establishing

the role of unconditionality of belongingness for belongingness research in general and

for understanding the relationship between self-esteem and psychological health in

particular. In this first step, my collaborators and I constructed and validated a self-

report scale of amount and unconditionality of belongingness. Then, across several

studies, we provided the first empirical evidence that belongingness varies not only in

its amount, but also in its unconditionality. Nonetheless, the data presented in this

thesis are entirely correlational in nature. Thus, on the basis of this research we cannot

yet conclude that unconditionality of belongingness has a causal effect on

psychological health and that this effect is mediated by contingent self-esteem.

Future research should use experimental designs to provide unequivocal support

for this claim. In fact, my collaborators and I (Gebauer, Sedikides, & Leary, in

preparation) are currently putting together a larger research program that will prime

unconditional versus conditional belongingness and investigate the effects of these

primes on self-esteem, psychological health, and motivation. This issue is important

partly because of fascinating evidence about differences in the basis of self-esteem. For

example, Deci and Ryan (2000) have proposed an intriguing explanation why people

strive for self-esteem. In their view, the striving for self-esteem is a compensatory

motive that arises from the failure to fulfil self-determination theory's universal

psychological needs for autonomy, relatedness, and competence (Deci & Ryan, 2000).

Similar compensatory motives in different domains of psychology have been

hypothesized by Brennan and Morris (1997), Swann (1996), and Kuhut (1971). In

particular, Brennan and Morris (1997) suggested that securely attached individuals

"should derive self-esteem from warm associations with others, whereas dismissing

individuals, lacking such associations, may learn to compensate by deriving self-esteem

from alternative sources" (p. 23). Further, these researchers argue that "dismissing

individuals, lacking a base of positive regard from others, should compensate by

investing more in abilities or accomplishments" (p. 25). Similarly, Swann (1996)

reports that some children derive their self-esteem from interpersonal relationships to

the exclusion of achievement concerns, whereas other children neglect relationships in

favour of personal accomplishments. Moreover, Kohut (1971) suggests that the striving

to appear grandiose (cf. narcissism) is due to a lack of the feeling of being accepted and

being inherently "good" in childhood.

These views are reflected in my master thesis at the University of Tübingen,

which developed Unconditional Love Theory (ULT; Gebauer, 2005). ULT proposes

that the hierarchically highest psychological need is a need for security, which can be

achieved by the satisfaction of various hierarchically lower-order needs (for a similar

argument, see Hart, Shaver, & Goldenberg, 2005). One primary subordinate need is the

need to belong unconditionally (or unconditional love). ULT proposes that the

unconditional quality of belongingness is vital because only belongingness that is

unconditional cannot be lost, whereas conditional belongingness is always

accompanied by the fear of losing belongingness (see Fromm, 1956, and Rogers, 1951,

1961, for similar arguments regarding parental love and positive regard from the therapist towards the client). Hence, unconditional belongingness should satisfy the overarching need for security, but conditional belongingness should not. Thus, according to ULT, people have a fundamental psychological need for unconditional belongingness and develop a compensatory motive for conditional belongingness if they are not able to satisfy their need for unconditional belongingness.

ULT's compensatory hypothesis may be useful for understanding the relationship between self-esteem and psychological health. On the one hand, ULT adopts the idea of Sociometer Theory that self-esteem is a meter of one's belongingness status. On the other hand, researchers have argued that the fulfilment of psychological needs are more strongly related to psychological health than the fulfilment of compensatory motives (Baumeister & Leary, 1995; Deci & Ryan, 2000; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Sheldon & Elliot, 1999; Sheldon et al., 2001; Sheldon, Ryan, & Reis, 1996).

Together then, our future research will further elevate the understanding of the relationship between belongingness (amount and unconditionality), self-esteem (amount and contingency), and psychological health via adopting a priming method in order to draw causal explanations.

## 5.2.2   Review of the Third Empirical Chapter

The third empirical chapter (Chapter 4) presented research in which my collaborators and I (see also Gebauer et al., 2008b) re-examined the relationship between implicitly measured self-esteem and self-reported psychological health. Past research has generally found no relationship between implicit measures of self-esteem

and self-reported psychological health (Schimmack & Diener, 2003; Shimizu &

Pelham, 2004), and, in the few cases where a reliable relationship emerged, this

relationship was rendered non-significant when controlling for explicitly measured self-

esteem (e.g., Bosson et al., 2000). It is widely acknowledged that explicit measures of

self-esteem are influenced by response biases (Baumeister et al., 1989; Farnham et al.,

1999; Tice, 1991) and many researchers suggest that the only viable way of assessing

genuine self-esteem is via implicit measures (Dijksterhuis et al., 2008; Farnham et al.

1999; Greenwald & Farnham, 2000). Thus, the null-relation between implicitly

measured self-esteem and self-reported psychological health seriously questions

whether there is a relationship between self-esteem and psychological health at all.

Chapter 4 described how the absence of a reliable relationship between

implicitly measured self-esteem and self-reported psychological health may be due to

problems with existing implicit measures of self-esteem. Several researchers have

speculated that existing implicit measures of self-esteem assess domain-specific rather

than global self-esteem (Banaji, 1999; Bosson et al., 2000), and more recent research

has supported this claim empirically (Campbell et al., 2007; Sakellaropoulo & Baldwin,

2007; Wentura et al., 2005). My collaborators and I reasoned that one reason that led to

null-results between implicitly measured self-esteem and self-reported psychological

health in the past may be because available implicit measures fail to assess global self-

esteem. Thus, we developed and validated an implicit measure of global self-esteem –

the Name Liking Measure.

Name Liking related consistently to psychological health in two studies.

Further, this relationship even remained significant after controlling for explicitly

measured self-esteem. Together then, the relationship between self-esteem and

psychological health is pervasive even if it is argued that explicit measures of self-

esteem are unsuitable for assessing self-esteem (Baumeister et al., 1989; Farnham et al.,

1999; Tice, 1991) and that only implicit measures of self-esteem can assess genuine

self-esteem (Dijksterhuis et al., 2008; Farnham et al., 1999; Greenwald & Farnham,

2000).

*Future Research*

With a series of subsequent studies, Constantine Sedikides and I (Gebauer &

Sedikides, in preparation) have tried to understand the suitability of assessing self-

esteem with explicit measures of global self-esteem versus Name Liking. The first aim

of this subsequent project is to evaluate critically the claim of some researchers that

explicit measures of self-esteem are unsuitable to assessing self-esteem. The second

aim is to utilize the lessons learned from research elucidating the first aim, in order to

better understand the relationship between self-esteem and psychological health. In a

first study, participants completed an explicit measure of global self-esteem and our

Name Liking measure. Further, participants provided the addresses of two friends who

functioned as peer-reporters of participants' self-esteem. Also, the peer-reporters

indicated to what degree they feel suitable to function as an objective observer of the

participant's personality. The results of this study revealed Name Liking was positively

related to peer-reported self-esteem, whereas the explicit measure of global self-esteem

was unrelated to peer-reported self-esteem. Interestingly, this effect occurred only when

peer-reporters indicated that they are suitable to function as objective observers. For

peer-reporters who indicated that they are unsuitable as objective observers, the

opposite was the case: the explicit measure of self-esteem related positively to peer-

reported self-esteem, and the implicit measure of global self-esteem was unrelated to

peer-reported self-esteem. This pattern of findings suggests that Name Liking is a more

suitable measure of real or genuine self-esteem than are explicit measures of self-

esteem. Furthermore, these findings are first empirical support of Baumeister et al.'s

(1989; see also Tice, 1990) assertion that explicit measures of self-esteem assess the

motivation to possess high self-esteem, rather than actual level of self-esteem.

In the next step, we wished to consolidate the finding that explicit measures of

self-esteem are less suitable measures of self-esteem than the Name Liking measure.

Thus, we conducted a study testing which measure of self-esteem is more strongly

related to IAT-Anxiety (Egloff & Schmukle, 2002). IAT-Anxiety assesses trait levels of

anxiety via an IAT procedure (see Chapter 4, Study 8 for a description of the IAT).

IAT-Anxiety has been shown to be a suitable measure of anxiety, with scores free of

social desirability. Because of the resilience to being biased by social desirability, IAT-

Anxiety has been found to predict a number of behavioural manifestations of anxiety,

which are not predicted by self-report measures of anxiety (e.g., experimenter-rated

anxiety, performance decrements after failure, and behavioural indicators of anxiety

during a stressful speech; Egloff & Schmukle, 2002). The results of our study including

IAT-Anxiety among measures of self-esteem were in line with our prior evidence that

explicit measures of self-esteem are unsuitable for assessing genuine self-esteem.

Specifically, the explicit measures of self-esteem were unrelated to IAT-Anxiety

scores, but Name Liking did relate to IAT-Anxiety.


## 5.3 Tying Everything Together


If I had to summarize what I have learned from three years of research on the

relationship between self-esteem and psychological health, I would say that I have

learned that this relationship is far more complex and multifaceted than I originally

anticipated. First, under certain circumstances, self-esteem exerts effects on

psychological health, but, under other circumstances, psychological health exerts

effects on self-esteem (see Chapter 2). Second, self-esteem is closely bound to

belongingness and both constructs do not only vary in their amount, but also in their

unconditionality. Both amount and unconditionality of belongingness and self-esteem

are independently related to psychological health (see Chapter 3). Finally, implicit and

explicit measures of self-esteem sometimes converge and sometimes diverge in their

relationship with psychological health (see Chapter 4). Nonetheless, past research, the

research presented in this thesis, and the research that followed the research in this

thesis all paint a picture that helps to identify major and minor contributors to the

relationship between self-esteem and psychological health. Although a single model

will never be able to completely explain this relationship, a new fruitful, integrative

model may be beneficial.

In my opinion, this new model is Unconditional Love Theory (ULT, Gebauer,

2005). It attempts to explain as much variance in the relationship between self-esteem

and psychological health as possible, while drawing attention to additional processes

that are not a part of the model but nonetheless contribute to the relationship between

self-esteem and psychological health. The model can be understood by considering that

a suitable starting point for thinking about the relation between any two variables is to

understand the nature and function of each individual variable involved in this

relationship. With regard to the relationship between self-esteem and psychological

health, there exists a lot of research on each variable, but relatively little research

concerns the function of these variables. In other words, why do people possess self-

esteem and psychological health?

Only two theories to date explain comprehensively why people need self-

esteem: Terror Management Theory (TMT; e.g., Greenberg et al., 1986; Pyszczynski et

al., 2004; Solomon, Greenberg, & Pyszczynski, 1991) and Sociometer Theory (Leary,

2006; Leary & Baumeister, 2000; Leary & Cox, 2007; Leary et al., 1995). TMT

conceptualizes self-esteem as a buffer against the existential terror that is accompanied

by the awareness of one's own death. Sociometer Theory conceptualizes self-esteem as

a meter of the level of belongingness. There is heated debate between the two camps of

researchers, with each camp attacking and dismissing the reasoning of the other (e.g.,

Leary & Baumeister, 2000; Pyszczynski et al., 2004). A closer look at both theories,

however, suggests that the TMT's and the Sociometer Theory's explanations of why

people need self-esteem are not all that different.

        Both theories seem to suggest that self-esteem is an epiphenomenon, although

Sociometer Theory is more explicit in this claim than TMT. Sociometer Theory

suggests that self-esteem is a gauge or meter of one's amount of belongingness, which

developed evolutionarily, because a sufficient level of belongingness has always been

vital for the survival of our species. Consequently, there is high evolutionary value in

possessing a sophisticated monitoring system that tracks one's belongingness status

(e.g., Leary & Baumeister, 2000). Similarly, in order to explain why self-esteem buffers

people from the paralyzing terror of death awareness, TMT posits that high self-esteem

results from feelings of literal or symbolic immortality, with feelings of literal or

symbolic immortality being achieved by living up to cultural standards of value (e.g.,

Pyszczynski et al., 2004). This hypothesis assumes that the real buffer against death

anxiety is the feeling of overcoming death, either literally or symbolically. Put simply,

TMT assumes that self-esteem is a meter or gauge of people's "immortality status" and

hence, is similar to the meter or gauge hypothesis of people's belongingness status

(Sociometer Theory; Leary, 2006; Leary & Baumeister, 2000; Leary & Cox, 2007;

Leary et al., 1995). In both cases, self-esteem is an epiphenomenon.

Thus, the real debate between TMT and Sociometer Theory is whether self-esteem gauges immortality status or belongingness status. Unconditional Love Theory (ULT, Gebauer, 2005) suggests that both may play a role. According to ULT, psychological needs can be ordered hierarchically (e.g., see Maslow, 1968) with the overarching or most fundamental psychological need being a need for security (for initial empirical support, see Hart et al., 2005). Felt immortality and a high belongingness status can both contribute to this security need: self-esteem is assumed to indirectly – via the satisfaction of one's security need – gauge both immortality status and belongingness status. This interpretation is in line with the many findings supporting TMT (for reviews, see Greenberg et al., 1986; Pyszczynski et al., 2004; Solomon et al., 1991) and Sociometer Theory (for reviews, see Leary, 2006; Leary & Baumeister, 2000; Leary & Cox, 2007; Leary et al., 1995) and, therefore promises to reconcile the dispute between the two theories.

With the assertion that self-esteem is an epiphenomenon that monitors or gauges people's security status, the relationship between self-esteem and psychological health becomes equivalent to the relationship between felt security and psychological health. Although many different factors contribute to psychological security (e.g., felt immortality, certainty, etc.), ULT concurs with Sociometer Theory in ascribing belongingness a central role in achieving psychological security. Again, this is not to say that other variables do not exert important effects on psychological security and thus self-esteem. However, the evolutionary importance of belongingness (Baumeister & Leary, 1995) and the high correlations between belongingness and self-esteem (Leary & Baumeister, 2000) provide a compelling argument for the centrality of belongingness as a contributor to psychological security and thus self-esteem.

Of importance, ULT extends Sociometer Theory by proposing a need to belong

*unconditionally,* rather than a need to belong per se. The rational for this emphasis on

the need to belong unconditionally is that there are reasons to believe that a high level

of belongingness does not always foster psychological security. These reasons were

outlined in my description of theory and research by humanistic psychologists in

Chapters 1 and 3 (e.g., Fromm, 1965; Rogers, 1951, 1961), and in my description of

Baumeister and Leary's (1995) argument for a role of conditionality of belongingness.

Moreover, Chapter 3 provides empirical evidence for the importance of the

unconditionality dimension in research on belongingness. This chapter shows that

people with a high amount and high unconditionality of belongingness are

psychologically most healthy, whereas people with a high amount and high

conditionality of belongingness are psychologically less healthy. A strong relationship

between the fulfilment of a candidate psychological need and psychological health is an

important criterion for regarding the candidate need as being a real psychological need

(Baumeister & Leary, 1995; Deci & Ryan, 2000; Reis et al., 2000; Sheldon & Elliot,

1999; Sheldon et al., 2001; Sheldon et al., 1996). Thus, these data provide initial

support for a need to belong unconditionally, which stands in the service of the

hierarchically higher need for psychological security. The hierarchical structure is

further elucidated by the finding that the relation between level of belongingness and

psychological health was mediated by level of self-esteem and that the relation between

unconditionality of belongingness and psychological health (at least anxiety) was

mediated by contingent self-esteem (see Chapter 3, Study 7). This evidence supports

the idea that both level of self-esteem and contingent self-esteem function as gauges of

belongingness.

Together then, these analyses suggest that the main reason why self-esteem is related to psychological health is that self-esteem mirrors one's psychological security status and psychological security is related to psychological health. Of importance, unconditional belongingness plays a major role in the aforementioned model, because psychological security is to a large degree determined by fulfilling the hierarchically lower need for unconditional belongingness. This model fits abundant research and theoretical assumptions that self-esteem plays a causal role in the relationship between self-esteem and psychological health (for a review, see Baumeister et al., 2003).

The above reasoning not withstanding, the empirical foundation of ULT is still sparse. More research is needed to test the key assumptions of the theory: First, it is important to find a way to assess the need for and level of psychological security. Second, research that facilitates strong causal conclusions is needed (e.g., priming studies, longitudinal studies). Finally, research should elucidate the dynamics underlying the aforementioned motive to compensate the lack of a high amount of unconditional belongingness via the pursuit of conditional belongingness.

Nonetheless, two of the three empirical chapters of this study helped to lay the groundwork for this research. Specifically, as described in Chapter 3, my collaborators and I have developed and validated a self-report measure of the amount and unconditionality of belongingness. This measure will be central for future analyses of the effects of the unconditionality of belongingness. Furthermore, as described in Chapter 4, my collaborators and I have developed and validated a novel implicit measure of self-esteem, which promises to be a useful research tool for assessing self-esteem within the belongingness and security framework. The use of the Name Liking measure in this respect is particularly pressing, given the accumulating evidence for the unsuitability of explicit measures of self-esteem (Baumeister et al., 1989; Dijksterhuis

et al., 2008; Farnham et al., 1999; Gebauer & Sedikides, in preparation; Horney, 1937; Tice, 1991).

Together then, future research that builds on the research presented in this thesis promises to further increase our understanding of the relationship between self-esteem and psychological health. It is likely that studying a need for unconditional belongingness and the issues related to this need may help to understand much of what is currently puzzling in the relationship between self-esteem and psychological health. Over and above this, Chapter 2 is an important reminder that the relation between self-esteem and psychological health is not solely due to a causal effect of self-esteem. The MCM lines out a sound reasoning for a causal effect of chronic mood on self-esteem in the domain of recalling valenced selves. There may be numerous other domains in which psychological health may affect self-esteem and future research is needed to identify these domains.

On page 1 of this thesis, I summarized friends and colleagues' sceptical questions about my dissertation research. 170 pages later – on the last page of this thesis – it is worth revisiting these questions. People have wondered whether the study of a single relation between two psychological variables is negligible, given the large number of variables in our discipline. I hope that I was able to infect the reader with the fascination that I possess for the relationship between self-esteem and psychological health. At the minimum, I hope that this thesis makes the point for more thorough research on this relationship well. Similarly, people have wondered how it can take all of three whole years to "figure out" the relationship between self-esteem and psychological health. As is true for most research, the extended "future direction" sections in this chapter show that "figuring out" this relationship will take many more years. I would like to believe that this thesis has made some progress in the right

direction towards the final aim to fully understand the relationship between self-esteem

and psychological health.

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## Appendix

*Regression analyses employed in Studies 9 to 13.*

| Study 9 | first name | surname | full name |
|---|---|---|---|
| Explicit Measure of Global Self-esteem (hierarchical regression) | .36 *** | .21 ** | .36 *** |
| Domain-Specific Self-Esteem Measure – Ability (hierarchical regression) | .17 | .13 | .15 |
| Domain-Specific Self-Esteem Measure – Social (hierarchical regression) | .00 | .06 | .02 |
| Domain-Specific Self-Esteem Measure – Appearance (hierarchical regression) | .09 | .01 | .09 |
| Domain-Specific Self-Esteem Measure – Public (hierarchical regression) | .03 | .02 | -.08 |

| Study 10 | first name | surname | full-name |
|---|---|---|---|
| Depression (controlling for explicitly measured self-esteem) | -.14 * | -.12 * | -.15 ** |

| Study 11 | first name | surname | full-name |
|---|---|---|---|
| Explicit Measure of Self-Esteem x Response Time (multiple regression) | -.05 | -.13 ** | -.11 * |
| Subjective Well-Being (controlling for explicitly measured self-esteem) | .10 | .17 ** | .12 * |

| Study 12 | first name | surname | full-name |
|---|---|---|---|
| No-Load Explicit Measure of Self-Esteem (controlling for load self-esteem) | .08 | .06 | .05 |
| Load Explicit Measure of Self-Esteem (controlling for no-load self-esteem) | .28 | .27 | .55 * |
| Observer-Rated Anxiety (controlling for no-load self-esteem) | -.10 | -.43 ** | -.41 * |

| Study 13 | first name | surname | full-name |
|---|---|---|---|
| Impression Management (controlling for Self-Deceptive Enhancement) | -.03 | .03 | .03 |
| Self-Deceptive Enhancement (controlling for Impression Management) | .15 * | .22 *** | .23 *** |

*Note.* *** = ($p \leq .001$), ** = ($p \leq .01$), * = ($p \leq .05$).