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Discrepancies Between Implicit and Explicit Self-Esteem:

Measurement Issues and Relations to

Health and Defensiveness

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Erklärung

Die vorliegende Arbeit wurde von mir selbstständig verfasst. Ich habe keine anderen als die angegeben Hilfsmittel benutzt.

Michela Schröder-Abé

Chemnitz, den 15.10.2007

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1. Einführung und Integration

> Denn wohl gibt's Dunkelheit in mir, die ich beklagen muß und die mir ein Vermögen oft verbirgt, das in mir ist. Und wenn die Seele dann sich selbst nach ihren eignen Kräften fragt, so glaubt sie sich nicht gern und leicht, weil das auch, was da in ihr ist, gar oft im Dunkel bleibt, bis die Erfahrung erst ans Licht es bringt.
>
> (Augustinus, 397, übers. 1955, S. 182-183)

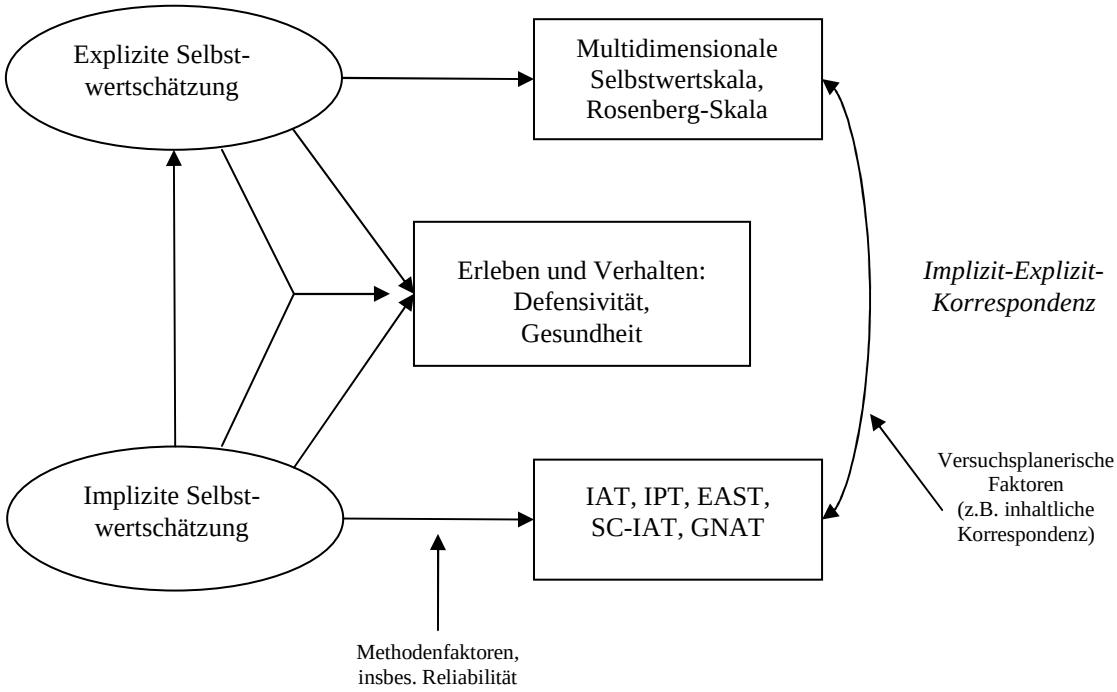
> Selbstbeobachtung. – Der Mensch ist gegen sich selbst, gegen Auskundschaftung und Belagerung durch sich selber, sehr gut vertheidigt, er vermag gewöhnlich nicht mehr von sich, als seine Aussenwerke wahrzunehmen. Die eigentliche Festung ist ihm unzugänglich, selbst unsichtbar, es sei denn, dass Freunde und Feinde die Verräther machen und ihn selber auf geheimem Wege hineinführen.
>
> (Friedrich Nietzsche, 1878, S. 318-319)

> There is a certain average tone of self-feeling, which each of us carries about with him, and which is independent of the objective reasons we may have for satisfaction or discontent.
>
> (William James, 1890, S. 306)

Schon seit Jahrhunderten beschäftigen sich Philosophie und Psychologie mit den Grenzen der Selbsterkenntnis. Dabei ist gerade die Fähigkeit zur Selbstreflexion ein Merkmal, das den Menschen von den meisten anderen Lebewesen unterscheidet. Von zentraler Bedeutung ist hierbei, wie positiv oder negativ sich Menschen selbst bewerten – ihre Selbstwertschätzung. Nicht immer besitzen Menschen jedoch vollständigen Selbstzugang bzw. ausreichende Introspektionsfähigkeit, manchmal täuschen sie sich selbst, indem sie sich beispielsweise selbst überschätzen. Außerdem kann es sein, dass Menschen nach außen ein Bild von sich vermitteln, das von ihrem Selbstbild abweicht, also z.B. positiver oder auch bescheidener ist. Diese Einschränkungen erlangen eine besondere Bedeutung, wenn zur Erfassung von Persönlichkeitseigenschaften wie der Selbstwertschätzung, fast ausschließlich auf Selbstbeschreibungsfragebogen zurückgegriffen wird.

An dieser Stelle setzt die implizite Selbstwertschätzung, die automatische, überlernte Bewertung der eigenen Person, an. Implizite Selbstwertschätzung wird nicht per Selbstbericht erfasst, sondern mittels indirekter Verfahren aus den Reaktionen auf selbstbezogene Stimuli erschlossen. Implizite Selbstwertschätzung ist das zentrale Thema der vorliegenden Arbeit, die eine diagnostische mit einer persönlichkeitspsychologischen Fragestellung vereint. Abbildung 1 gibt einen Überblick über die Fragestellungen der Arbeit.

Abbildung 1. Übersicht über die Fragestellungen der vorliegenden Arbeit (in Anlehnung an das Modell von Gschwendner, Hofmann & Schmitt, 2006a)



Aus diagnostischer Sicht wird untersucht, mit welchen etablierten (IAT, IPT) und neu entwickelten (z.B. SC-IAT, GNAT) indirekten Verfahren implizite Selbstwertschätzung reliabel und valide erfasst werden kann. Insbesondere wird dabei betrachtet, wie die Struktur und die Reliabilität der Verfahren ihre Konvergenz untereinander sowie die Korrespondenz mit expliziter Selbstwertschätzung beeinflussen. Dazu wird ein eingereichtes Manuskript von Rudolph, Schröder-Abé, Gregg und Schütz (2007) in diese Arbeit eingebracht.

Aus persönlichkeitspsychologischer Perspektive wird die Interaktion von impliziter und expliziter Selbstwertschätzung betrachtet (in der Abbildung dargestellt als zwei ineinander übergehende Pfeile): Untersucht wird, wie Selbstwertdiskrepanzen und -kongruenzen mit defensivem Verhalten und psychischer Gesundheit zusammenhängen. Besonderes Augenmerk liegt dabei auf der bisher wenig beachteten Kombination aus niedriger expliziter und hoher impliziter Selbstwertschätzung. Zu diesem Themenkomplex werden zwei bereits veröffentlichte Artikel in diese Arbeit eingebracht (Schröder-Abé, Rudolph, Wiesner & Schütz, 2007; Schröder-Abé, Rudolph & Schütz, 2007).

Die Zeitschriftenartikel stellen das Herzstück der Arbeit dar, der vorangestellte Einleitungsteil dient der allgemeinen Einführung und der Integration der Befunde aus den Artikeln.

1.1 Explizite Selbstwertschätzung

Selbstwertschätzung wird als habituelle Selbstbewertung definiert, das heißt als subjektives Empfinden des eigenen Wertes (Coopersmith, 1967). Während das Selbstkonzept als kognitive Komponente des Selbst beschrieben wird, bezieht sich Selbstwertschätzung auf den affektiven Teil – die Bewertung des selbstbezogenen Wissens (Baumeister, 1998; Schütz, 2003).

1.1.1 Positive Aspekte hoher Selbstwertschätzung

Hohe Selbstwertschätzung ist mit Optimismus (Taylor & Brown, 1988), Lebenszufriedenheit (z.B. Diener & Diener, 1995), emotionaler Stabilität (Judge, Erez, Bono & Thoresen, 2002; Robins, Hendin & Trzesniewski, 2001) und geringen Depressionswerten (z.B. Tennen & Herzberger, 1987; Watson, Suls & Haig, 2002) verbunden. Zudem erleben Personen mit hoher Selbstwertschätzung nach negativen Ereignissen weniger Stress und negativen Affekt (Brown & Dutton, 1995; DiPaula & Campbell, 2002). Niedrige Selbstwertschätzung ist hingegen Symptom bzw. Begleiterscheinung vieler psychischer Störungen (für einen Überblick siehe Rudolph, Schütz & Schröder-Abé, in Druck). Einige Autoren betrachten hohe Selbstwertschätzung als zentrale Variable für menschliches Wohlbefinden (z.B. Pyszczynski, Greenberg, Solomon, Arndt & Schimel, 2004), die unter anderem eine Pufferfunktion gegen existenzielle Ängste erfüllt. Dagegen sind andere Autoren inzwischen vorsichtiger und konstatieren, dass nur sehr wenige Belege für eine kausale Verursachung positiver Ergebnisse durch hohe Selbstwertschätzung existieren (Baumeister, Campbell, Krueger & Vohs, 2003).

1.1.2 Widersprüchliche Befunde und negative Aspekte hoher Selbstwertschätzung

Crocker und Park (2004) weisen darauf hin, dass das Streben nach hoher Selbstwertschätzung auch mit Kosten, wie beispielsweise verpassten Lerngelegenheiten verbunden ist. Auch hängt hohe Selbstwertschätzung mit negativen Verhaltensweisen wie Aggressivität nach Selbstwertbedrohung zusammen (Baumeister, Smart & Boden, 1996; Bushman & Baumeister, 1998). Darüber hinaus hat insbesondere die Forschung zum Zusammenhang von Selbstwertschätzung und defensiven Verhaltensweisen widersprüchliche Ergebnisse

erbracht: Während einige Studien hohe Selbstwertschätzung mit geringerer Defensivität in Zusammenhang brachten (z.B. Harmon-Jones et al., 1997; Steele, Spencer & Lynch, 1993), fanden andere Studien positive Zusammenhänge zwischen Selbstwert und Defensivität (z.B. Baldwin & Wesley, 1996; Gibbons, Eggleston & Benthin, 1997).

1.1.3 Optimale Selbstwertschätzung

Um diese Widersprüche aufzuklären wurde versucht, zwischen sicheren und fragilen Formen der Selbstwertschätzung zu differenzieren. Um so genannte *optimale Selbstwertschätzung* zu konzeptualisieren, werden neben der Höhe der Selbstwertschätzung zusätzliche Variablen betrachtet, wie beispielsweise die Stabilität oder Kontingenzen der Selbstwertschätzung (zusammenfassend siehe Kernis, 2003; siehe auch Schütz, 2003).
Eine weitere Variable, die eine derartige Differenzierung ermöglichen soll, ist die implizite Selbstwertschätzung. Da implizite Selbstwertschätzung mittels indirekter Verfahren aus den Reaktionen auf selbstbezogene Stimuli erschlossen wird, bieten sich hierbei besonders interessante Potenziale: Die Erfassung von Selbstwertschätzung erfolgte üblicherweise mit Hilfe von Selbstbeschreibungsfragebogen (Blascovich & Tomaka, 1991; Rosenberg, 1965; Schütz & Sellin, 2006). Diese Verfahren sind jedoch in ihrer Validität prinzipiell durch die Faktoren der Selbstdarstellung (Schlenker, 1980), Selbsttäuschung (Paulhus, 1984) und Selbstignoranz (Wilson, Lindsey & Schooler, 2000) eingeschränkt. Der Einsatz indirekter Verfahren zur Erfassung impliziter Selbstwertschätzung ist mit der Hoffnung verbunden, diese Probleme zumindest teilweise zu umgehen.

1.2 Implizite Selbstwertschätzung

Implizite Selbstwertschätzung wird definiert als „the introspectively unidentified (or inaccurately identified) effect of the self-attitude on evaluation of self-associated or self-dissociated objects“ (Greenwald & Banaji, 1995, S. 11). Anstatt „implizit“ vereinfachend mit “unbewusst” gleichzusetzen, wird hier jedoch eine Definition von *impliziter Selbstwertschätzung als automatische Bewertung der eigenen Person* angenommen. Automatizität ist ein breiteres Konzept, das neben Unbewusstheit auch andere Aspekte wie z.B. Zielunabhängigkeit, Unkontrollierbarkeit, Effizienz und Geschwindigkeit umfasst, die nicht immer gleichzeitig bzw. in gleichem Maße gegeben sein müssen (Bargh, 1994; Moors &

De Houwer, 2006). Eine derartige Konzeptualisierung spiegelt den derzeitigen Wissensstand zum Konstrukt der impliziten Selbstwertschätzung und den zu ihrer Erfassung eingesetzten Messverfahren besser wider als eine einseitige Festlegung auf unbewusste Prozesse.

1.2.1 Impliziter Selbstwert und Zwei-Prozess-Theorien der Informationsverarbeitung

In Anlehnung an *Zwei-Prozess-Theorien der Informationsverarbeitung* (insbesondere Strack & Deutsch, 2004) kann man implizite Selbstwertschätzung als Prozess im impulsiven System verstehen, während explizite Selbstwertschätzung sich auf Prozesse im reflektiven System bezieht. Nach dem Modell von Strack und Deutsch (2004) resultiert Verhalten aus der Aktivität von zwei parallel arbeitenden Informationsverarbeitungssystemen, einem *reflektiven* und einem *impulsiven System*. Im impulsiven System sind Einstellungen, Persönlichkeitseigenschaften und andere Repräsentationen als Verknüpfungen in einem assoziativen Netzwerk abgespeichert. Durch Aktivierungsausbreitung im Netzwerk können diese Dispositionen auch bei geringen kognitiven Kapazitäten verhaltenswirksam werden, indem sie Verhaltensschemata aktivieren. Das reflektive System beansprucht für seine Aktivität hingegen kognitive Kapazitäten. Dieses System kann Konzepte aus dem impulsiven System in ein propositionales Format transformieren, bei dem Elemente durch semantische Relationen verbunden und mit Wahrheitswerten versehen sind. Verhaltenswirksam wird dieses System, indem Propositionen durch Entscheidungsprozesse und Intentionen in Verhaltensschemata transformiert werden. Implizite Selbstwertschätzung könnte demnach als evaluative Assoziation, d.h. als Verbindung zwischen dem Selbstkonzept und evaluativen Elementen im impulsiven System verstanden werden (vgl. auch Greenwald et al., 2002), während explizite Selbstwertschätzung aus einer evaluativen Entscheidung folgt, beispielsweise anhand der Reflexion über eigene positive und negative Eigenschaften.

1.2.2 Korrelationen zwischen impliziter und expliziter Selbstwertschätzung und Moderatoren des Zusammenhangs

Implizite und explizite Selbstwertschätzung sind nur sehr schwach miteinander korreliert (z.B. Bosson, Swann & Pennebaker, 2000). In einer Metaanalyse fanden Hofmann, Gawronski, Gschwendner, Le und Schmitt (2005) im Selbstwertbereich lediglich eine durch-

schnittliche Implizit-Explizit-Korrelation von .13, die damit deutlich niedriger war als in anderen Inhaltsbereichen. Dieses Ergebnis deutet darauf hin, dass implizite und explizite Selbstwertschätzung relativ unabhängig voneinander sind.

Die genannten Ergebnisse zur geringen Korrelation zwischen impliziter und expliziter Selbstwertschätzung lassen gerade im Selbstwertbereich die Untersuchung von Moderatoren der Implizit-Explizit-Konsistenz (siehe Gschwendner, Hofmann & Schmitt, 2006b; Hofmann, Gschwendner, Nosek und Schmitt, 2005) äußerst interessant erscheinen. Bisher liegen hierzu noch relativ wenige Ergebnisse und z.T. auch widersprüchliche Befunde vor.

Die von Pelham et al. (2005) veröffentlichten Befunde zum moderierenden Einfluss des Geschlechts der Probanden auf den Zusammenhang zwischen impliziter und expliziter Selbstwertschätzung konnten in neueren Untersuchungen nicht bestätigt werden (Jordan, Whitfield & Zeigler-Hill, in press; Riketta, 2005). Allerdings deuten erste Befunde auf die Gültigkeit des von Pelham et al. (2005) angenommenen, dem Moderatoreffekt zu Grunde liegenden, Mechanismus hin. Jordan et al. (in press) fanden, dass sich bei Personen, die ihren Intuitionen vertrauen, ein stärkerer Zusammenhang zwischen impliziter und expliziter Selbstwertschätzung zeigt. Die Korrelation zwischen expliziter und impliziter Selbstwertschätzung ist außerdem höher, wenn die kognitiven Kapazitäten zur reflektiven Verarbeitung durch Zeitdruck oder cognitive load (Koole, Dijksterhuis & van Knippenberg, 2001) eingeschränkt werden bzw. wenn Tendenzen zu sozial erwünschten Antworten durch Priming oder die direkte Instruktion zum ehrlichen Antworten reduziert werden (Dijksterhuis, Albers & Bongers, in press; Olson, Fazio & Hermann, 2007). Auch wenn situativ eine Selbstwertbedrohung hergestellt wird (Jones, Pelham, Mirenberg & Hetts, 2002) findet sich eine höhere Korrelation zwischen impliziter und expliziter Selbstwertschätzung. Bezüglich dispositioneller Tendenzen zum sozial erwünschten Antworten zeigten sich jedoch widersprüchliche Ergebnisse (Riketta, 2005).

1.2.3 Prädiktive Validität impliziter Selbstwertschätzung

Bisher konnten erst wenige Studien direkte Zusammenhänge zwischen impliziter Selbstwertschätzung und relevanten Kriterien (bei statistischer Kontrolle der Effekte expliziter Selbstwertschätzung) finden: Implizite Selbstwertschätzung sagt nonverbale Angst in einem selbstwertbedrohlichen Interview vorher (Spalding & Hardin, 1999) und ist mit mehr spontanen nonverbalen Indikatoren für Unsicherheit in einem schwierigen Vortrag

verbunden (Rudolph, Schröder-Abé & Schütz, 2007). Niedrige implizite Selbstwertschätzung sagt außerdem mehr negativen Affekt, Stress und Pessimismus im Alltag vorher (Conner & Barrett, 2005) und geht mit habituellen (d.h. automatischen, häufig auftretenden, schwer zu kontrollierenden) negativen selbstbezogenen Gedanken einher (Verplanken, Friborg, Wang, Trafimow & Woolf, 2007).
In einigen Studien zeigen sich jedoch Effekte von impliziter Selbstwertschätzung in Interaktion mit anderen Variablen, wie z.B. Lebensereignissen (Steinberg, Karpinski & Alloy, 2007) oder Selbstwertbedrohungen (McGregor & Jordan, 2007). Als besonders vielversprechend hat es sich herausgestellt, implizite Selbstwertschätzung in Interaktion mit expliziter Selbstwertschätzung zu untersuchen, worauf im Abschnitt zu Selbstwertdiskrepanzen gesondert eingegangen wird.

1.3 Erfassung impliziter Selbstwertschätzung

Implizite Selbstwertschätzung kann mittels *indirekter Verfahren* untersucht werden. Indirekte Verfahren erfassen das interessierende Konstrukt nicht über Selbstberichte, sondern durch anderen Prozeduren (De Houwer, 2006). Andere Autoren (z.B. Fazio & Olson, 2003) bezeichnen die Messverfahren als „implizite Verfahren“. Wir schließen uns jedoch der Auffassung von De Houwer (2006) an, dass, um von einem „impliziten Maß“ sprechen zu können, empirisch nachgewiesen werden muss, dass ein Messverfahren ein bestimmtes Konstrukt erfasst, obwohl sich die Probanden beispielsweise nicht darüber bewusst sind, dass die Einstellung gemessen wird, bzw. keinen bewussten Zugang zu der Einstellung oder keine Kontrolle über das Ergebnis der Messung haben.
Die eingesetzten Methoden zur Erfassung impliziter Selbstwertschätzung beruhen auf drei kognitiven Phänomenen (Bosson, 2006): Erstens schreiben Menschen Objekten, die mit dem Selbst eng verbunden sind (wie beispielsweise ihrem Namen oder ihren Initialen), einen (meist positiven) Wert zu, ohne sich dessen bewusst zu sein (Greenwald & Banaji, 1995; Koole, Dijksterhuis & van Knippenberg, 2001). Um implizite Selbstwertschätzung zu erfassen, kann man demzufolge erfassen, wie positiv sie selbstbezogene Stimuli bewerten. Dieses Prinzip liegt der Initials Preference Task (oder auch Name Letter Task, wenn nicht nur die Initialen, sondern alle im Namen vorkommenden Buchstaben einbezogen werden) von Nuttin (1985) zu Grunde. Zweitens werden bei Konfrontation mit Objekten deren Bewertungen automatisch aktiviert (Fazio et al., 1986) und drittens erleichtert die

Aktivierung affektiver Zustände die darauf folgende Verarbeitung evaluativ ähnlicher Information (Collins & Loftus, 1975). Um implizite Selbstwertschätzung zu erfassen, kann man daher auch zunächst das Selbstkonzept primen und anschließend messen, wie leicht es den Probanden fällt, positive oder negative Stimuli zu verarbeiten. Beispiel für eine indirekte Messung des zweiten Typs ist die Implicit Self-Evaluation Survey (ISES; Pelham & Hetts, 1999).

Bosson et al. (2000) untersuchten die psychometrischen Eigenschaften einer ganzen Reihe indirekter Verfahren zur Erfassung von impliziter Selbstwertschätzung: Eingesetzt wurden supraliminales (Hetts, Sakuma & Pelham, 1999) und subliminales Priming (Spalding & Hardin, 2000), ein Impliziter Assoziationstest (IAT, Greenwald & Farnham, 2000), eine Stroop-Aufgabe (Stroop, 1935), die Implicit Self-Evaluation Survey (ISES; Pelham & Hetts, 1999), sowie Präferenzen für die eigenen Initialen und Geburtsdaten (Nuttin, 1985). Die Untersuchung zeigte, dass die unterschiedlichen Verfahren keine konvergente Validität untereinander aufwiesen und auch nur sehr gering mit expliziter Selbstwertschätzung korrelierten. Zudem zeigten nur der IAT und die Initialen- und Geburtsdatumspräferenzen ausreichende interne Konsistenz und Stabilität. Aus diesem Grund, und da sie bisher in den meisten publizierten Studien zu impliziter Selbstwertschätzung Verwendung fanden, sollen diese beiden Verfahren kurz näher beschrieben werden.

1.3.1 Initialenpräferenzen

Die Initialenpräferenzaufgabe (*Initials Preference Task, IPT*; Bosson et al., 2000) beruht auf dem bereits 1985 von Nuttin beschriebenen „Name-Letter-Effekt“ – dem Phänomen, dass Menschen die Buchstaben in ihrem Namen vor anderen Buchstaben des Alphabets bevorzugen. Dieser Effekt wurde seither vielfach repliziert und findet sich sogar in asiatischen Kulturen (z.B. Kitayama & Karasawa, 1997). Bei der Aufgabe werden die Probanden gebeten, alle Buchstaben des Alphabets auf einer Ratingskala zu bewerten (z.B. von 1 = *mag ich überhaupt nicht* bis 7 = *mag ich sehr*). Anschließend wird berechnet, wie stark sie ihre Initialen (in manchen Studien auch alle Buchstaben, die in ihrem Namen vorkommen, z.B. Koole, Dijksterhuis & van Knippenberg, 2001) gegenüber anderen Buchstaben bevorzugen. Anhand dieser Aufgabe wird noch einmal der Unterschied zwischen direkten und indirekten Maßen deutlich (De Houwer, 2006): Die Initialenpräferenzaufgabe ist ein *direktes* Maß zur Erfassung von Einstellungen gegenüber den Buchstaben des Alphabets;

durch die Berechnung der Präferenz für die Initialen der Probanden wird jedoch indirekt auf ihren Selbstwert geschlossen, die Aufgabe ist also gleichzeitig ein *indirektes* Maß zur Erfassung von Selbstwertschätzung.

Der „Name-Letter-Effekt“ tritt auf, ohne dass sich Personen dessen bewusst sind (Koole, Dijksterhuis & van Knippenberg, 2001) und kann nicht durch einfache Alternativerklärungen begründet werden – er tritt beispielsweise auch für seltene Buchstaben auf, so dass ein „Mere-Exposure-Effekt“ nicht die alleinige Ursache sein kann (Jones, Pelham, Mirenberg & Hetts, 2000). Pelham, Mirenberg und Jones (2002) sowie Pelham, Carvallo, DeHart und Jones (2003) haben darüber hinaus gezeigt, dass Menschen überzufällig häufig an Orten leben, deren Buchstaben ihren Namensbuchstaben oder den Zahlen in ihrem Geburtsdatum ähneln. Auch findet sich ein überzufälliger Zusammenhang mit der Berufswahl (Pelham et al., 2002). In Archiv- und Laborstudien hat sich zudem gezeigt, dass sich Menschen von anderen angezogen fühlen, deren Namen oder Geburtsdaten ihren eigenen ähneln (Jones, Pelham, Carvallo & Mirenberg, 2004). Implizite Präferenzen für die Initialen des Partners hängen darüber hinaus mit der Qualität der Beziehung zusammen (DeHart, Pelham & Murray, 2004).

1.3.2 Impliziter Assoziationstest

Implizite Assoziationstests (IATs; Greenwald, McGhee & Schwartz, 1998) messen implizite Einstellungen über Reaktionszeiten. Im Falle impliziten Selbstwerts (Greenwald & Farnham, 2000; Rudolph, Schröder & Schütz, 2006) wird so die Verknüpfung zwischen der Objektdimension *selbstrelevant (ich) vs. nicht-selbstrelevant (nicht-ich)* und der Attributdimension *positiv (angenehm) vs. negativ (unangenehm)* gemessen (vgl. Abbildung 2). Bei der Testdurchführung wird der IAT als Zuordnungsaufgabe vorgestellt, in der die Probanden Stimuli per Tastendruck klassifizieren sollen. Während es sich bei den Blocks 1, 2 und 4 um Übungsblocks handelt, sind die Blocks 3 und 5, bei denen die Objekt- und die Attributdimension gemeinsam kategorisiert werden, die für die Messung kritischen Blocks. Der IAT-Effekt gibt an, wie viel höher die mittlere Reaktionsgeschwindigkeit in Block 3 im Vergleich zu Block 5 ist. Diese Reaktionszeitdifferenz wird als Hinweis darauf interpretiert, wie eng Begriffe assoziiert sind, d.h. wie viel einfacher es für den Probanden ist, angenehme Begriffe mit dem Selbst zu verbinden als unangenehme. Es wird angenommen, dass Individuen mit relativ hoher impliziter Selbstwertschätzung eine automati-

sche Assoziation des Selbst mit positivem Affekt aufweisen. Daher antworten sie schneller, wenn dieselbe Antworttaste für die selbstrelevante und die angenehme Kategorie steht, als wenn die selbstrelevante und die unangenehme Kategorie gekoppelt sind.

Abbildung 2. Schematische Darstellung des Ablaufs eines Selbstwert-IATs in Anlehnung an Greenwald und Farnham (2000)

Block	Dimension linke Taste	Beispielitems	Dimension rechte Taste
1	ich		nicht-ich
(24 Trials)	●	mein	○
	○	andere	●
2	angenehm		unangenehm
(24 Trials)	●	Freude	○
	○	Leid	●
3	ich oder angenehm		nicht-ich oder unangenehm
(96 Trials)	●	mein	○
	●	Freude	○
	○	andere	●
	○	Leid	●
4	nicht-ich		ich
(24 Trials)	○	mein	●
	●	andere	○
5	nicht-ich oder angenehm		ich oder unangenehm
(96 Trials)	○	mein	●
	●	Freude	○
	●	andere	○
	○	Leid	●

Anmerkung. ● = korrekte Antwort ○ = inkorrekte Antwort; Trials = Anzahl der Durchgänge in einem Block, die Stimuli werden wiederholt dargeboten

Der IAT ist inzwischen in zahllosen Untersuchungen in den verschiedensten Bereichen der Psychologie eingesetzt worden. Er weist im Allgemeinen hohe bis sehr hohe interne Konsistenzen auf (Nosek, Greenwald & Banaji, 2007) und zeigte in vielen Studien inkrementelle Validität über Selbstbeschreibungsverfahren (Poehlman, Uhlmann, Greenwald & Banaji, 2007).

Allerdings ist der IAT auch verschiedentlich kritisiert worden. Studien zur internen Validität zeigen, dass dem IAT neben automatisch aktivierten Assoziationen auch nicht-assoziative Prozesse zugrunde liegen. Untersuchungen zum Einfluss von Aufgabenwechselkosten (Back, Egloff & Schmucke, 2005; Klauer & Mierke, 2005; McFarland & Crouch, 2002; Mierke & Klauer, 2001, 2003) und zur intentionalen Anpassung von Reaktionsschwellen (Brendl, Markman & Messner, 2001) zeigen, dass der IAT-Effekt auch Methodenvarianz beinhaltet und weisen auf einen Einfluss exekutiver Kontrollprozesse hin. Ein neu entwickelter Scoring-Algorithmus für den IAT, der eine intraindividuelle

Standardisierung vornimmt, kann den Anteil derartiger assoziationsirrelevanter Informationen jedoch verringern (Greenwald, Nosek & Banaji, 2003). Außerdem wird in verschiedenen mathematischen Modellen versucht, unterscheidbare Komponenten des IAT zu trennen (Conrey, Sherman, Gawronski, Hugenberg & Groom, 2005; Klauer, Voss, Schmitz & Teige-Mocigemba, 2007). Weiterhin stellen Figur-Grund-Kompatibilitäten, die nicht notwendigerweise auf mentalen Assoziationen beruhen müssen, eine Varianzquelle im IAT dar (Rothermund & Wentura, 2001, 2004). Auch weisen Materialeffekte darauf hin, dass nicht immer reine Katgorieassoziationen erfasst werden, sondern eine gewisse Abhängigkeit vom Stimulusmaterial besteht (z.B. Blümke & Friese, 2006).

Gegen die ursprüngliche Annahme, dass mittels IAT zeitlich stabile, robuste Assoziationen (z.B. Wilson et al., 2000) erfasst werden können, sprechen nur befriedigende Retest-Korrelationen, die Ergebnisse von Latent-State-Trait-Analysen (Bosson et al., 2000, Schmuckle & Egloff, 2005; Egloff, Schwerdtfeger & Schmucke, 2005) sowie die leichte Beeinflussbarkeit von IAT-Effekten durch Kontexteffekte (z.B. Dasgupta & Grenwald, 2001). Mehrere Studien haben gezeigt, dass der IAT kaum oder nur mit genauen Instruktionen zu fälschen ist (z.B. Banse, Seise & Zerbes, 2001; Egloff & Schmuckle, 2002; Steffens, 2004; aber siehe Fiedler & Blümke, 2005).

Ein weiterer Kritikpunkt, der im Grunde jeden IAT betrifft, bei Selbstwert-IATs aber besonders augenfällig wird, ist, dass mit IATs immer relative Messungen vorgenommen werden können: Bei Selbstwert-IATs misst man beispielsweise die Bewertung des Selbst *in Relation zur Bewertung anderer*. Karpinski (2004) konnte zeigen, dass sich die Ergebnisse von Selbstwert-IATs stark unterscheiden, je nachdem, ob die Kategorie „andere“ eher neutral und unspezifiziert bleibt, oder durch positiv oder negativ besetzte Exemplare repräsentiert wird. Zwar wurden bisher nur Auswirkungen auf die Absolutwerte des IAT gezeigt (vgl. auch Pinter & Greenwald, 2005), doch ist anzunehmen, dass sich die Rangordnung der Probanden auch bei standardisierten IATs mit einer relativ neutralen „anderen“ Kategorie möglicherweise systematisch oder unsystematisch ändern könnte, wenn sich Probanden unter der Kategorie unterschiedliches vorstellen.

1.3.3 Neuere indirekte Verfahren

In jüngerer Zeit wurden neue indirekte Verfahren entwickelt, die zum Teil die genannten Kritikpunkte am IAT aufgreifen. Der *Single Category IAT* (SC-IAT, Karpinski & Stein-

man, 2006) bzw. Single Target IAT (ST-IAT, Wigboldus, Holland & van Knippenberg, 2005) verwendet nur eine Target-Kategorie (im Selbstwertbereich nur die Kategorie „ich") und verzichtet auf die Gegenkategorie (hier „andere" bzw. „nicht-ich").

Die *Extrinsic Affective Simon Task* (EAST, De Houwer, 2003) und die Identification EAST (ID-EAST; De Houwer & De Bruycker, 2007) basieren, anders als der IAT, beide auf irrelevanter Stimulus-Response-Kompatibilität (De Houwer, in press). Bei beiden Aufgaben werden die Zielkonzepte (hier z.B. „ich") auf der Basis eines irrelevanten Merkmals kategorisiert, beispielsweise anhand ihrer Farbe oder der Schreibung in großen vs. kleinen Buchstaben, während die Attributkonzepte anhand ihrer Valenz kategorisiert werden. Durch die Kategorisierung anhand von Valenz werden die Reaktionstasten extrinsisch mit der Valenz assoziiert, was die Bearbeitung der Klassifikation anhand des irrelevanten Merkmals erleichtert oder erschwert. Der Unterschied zwischen den beiden Varianten ist, dass bei der ID-EAST sichergestellt wird, dass die Probanden die Wortbedeutung der Stimuli zunächst identifizieren müssen, bevor sie wissen, ob sie der Kategorisierungsregel für Target-Stimuli (anhand Groß- und Kleinschreibung) oder für Attributstimuli (anhand der Valenz) folgen sollen.

Bei der *Go/No-Go Association Task* (GNAT; Nosek & Banaji, 2001) wird nur eine Reaktionstaste verwendet und die Probanden sind aufgefordert, nur bei bestimmten Kombinationen von Stimuli (z.B. „ich" und „angenehm") zu reagieren (Go) und bei der Präsentation von Distraktorreizen die Reaktions-Deadline verstreichen zu lassen (No-Go).

Diese neueren Verfahren umgehen das Problem der relativen Messungen und ermöglichen es, spezifisch die Einstellung zu nur einer Zielkategorie zu erfassen. Im Selbstwertbereich bedeutet das, dass mit Hilfe dieser Verfahren die Bewertung des Selbst (ohne Einfluss der Bewertung anderer) gemessen werden kann. So sollte eine eindeutigere Interpretation der Messwerte und möglicherweise eine höhere Validität der Messverfahren erreicht werden.

1.3.4 Eigene Untersuchungen zur Erfassung impliziter Selbstwertschätzung

Die vorgestellten Verfahren wurden bisher nur in einigen wenigen Studien zur Erfassung von impliziter Selbstwertschätzung eingesetzt (z.B. De Houwer, 2003; Karpinski & Steinman, 2006) und es existieren kaum Angaben zu ihrer Reliabilität und Validität. Zum Zeitpunkt der Durchführung der Studie von Bosson et al. (2000) waren die genannten Instrumente noch nicht entwickelt, so dass noch nicht untersucht werden konnte, ob diese neuen

Verfahren konvergieren und ob bedeutsame Korrelationen mit expliziter Selbstwertschätzung bestehen. Da in der Studie von Bosson et al. (2000) für fast alle eingesetzten Verfahren sehr geringe Reliabilitäten gefunden wurden, besteht zudem die Möglichkeit, dass die geringen konvergenten Validitäten (zumindest teilweise) auf die mangelnden Reliabilitäten zurückzuführen sind.

Der in diese Arbeit eingebrachte Artikel von Rudolph, Schröder-Abé, Gregg & Schütz (2007) setzt an genau diesem Punkt an. In drei Studien[1] wurde untersucht, wie reliabel die neuen indirekten Verfahren zur Erfassung von Selbstwertschätzung sind, wie stark die indirekten Verfahren konvergieren und wie hoch die Korrelationen mit expliziter Selbstwertschätzung sind. Dabei erfolgte ein Vergleich mit dem IAT und der IPT als Verfahren, die seit der Studie von Bosson et al. (2000) als relativ etablierte Maße zur Erfassung von Selbstwertschätzung gelten können. Unter der Annahme, dass konzeptuelle Ähnlichkeit zu höheren Korrelationen führt, wurden Verfahren, die eine relative Messung vornehmen (wie der IAT), mit Verfahren, die eine eindimensionale Messung erlauben (SC-IAT, ID-EAST und GNAT), verglichen.

Es zeigte sich, dass der IAT, der SC-IAT und die GNAT gute bis befriedigende, und die IPT sowie die ID-EAST befriedigende Reliabilitäten aufweisen, während für die EAST nur eine ungenügende Reliabilität gefunden wurde. Trotz der hohen Messgenauigkeiten konvergierten die indirekten Verfahren nur sehr schwach bis überhaupt nicht. Auch fanden sich nur sehr geringe Korrelationen mit expliziter Selbstwertschätzung. Somit wurden die Ergebnisse von Bosson et al. (2000) auch für neu entwickelte Maße zur Erfassung impliziter Selbstwertschätzung repliziert. Allerdings fand sich wie erwartet ein Effekt der konzeptuellen Ähnlichkeit der Verfahren: ID-EAST und SC-IAT, die beide eine eindimensionale Messung vornehmen, korrelierten tendenziell signifikant und höher miteinander als mit anderen indirekten Verfahren. Ebenso fanden sich für einen aus der GNAT berechneten relativen Index höhere Korrelationen mit dem IAT als für die spezifischen GNAT-Indizes. Neben praktischen Empfehlungen, mit welchen Maßen implizite Selbstwertschätzung reliabel erfasst werden kann, liefert der Artikel damit einen Beitrag zum Verständnis der Struktur und Funktionsweise indirekter Verfahren.

[1] Teile des Datensatzes, der Studie 1 zu Grunde liegt, wurden unter anderem Aspekt in den Artikeln von Schröder-Abé, Rudolph, Wiesner und Schütz (2007) sowie Schröder-Abé, Rudolph und Schütz (2007) ausgewertet.

1.4 Diskrepanzen zwischen expliziter und impliziter Selbstwertschätzung

Wie bereits erwähnt, kann implizite Selbstwertschätzung auch genutzt werden, um sichere von „fragilen“ (Bosson, Brown, Zeigler-Hill & Swann, 2003) bzw. „defensiven“ (Jordan, Spencer, Zanna, Hoshino-Browne & Correll, 2003) Formen der Selbstwertschätzung zu differenzieren. Zur Vereinfachung werden in Abbildung 3 jeweils nur hohe und niedrige explizite und implizite Selbstwertschätzung betrachtet und die vier möglichen Kombinationen dargestellt. Gehen explizite und implizite Selbstwertschätzung miteinander einher, so spricht man von *kongruenter Selbstwertschätzung*, weichen sie voneinander ab, von *diskrepanter Selbstwertschätzung*. Da explizite und implizite Selbstwertschätzung nur sehr gering miteinander korrelieren (Bosson et al., 2000; Hofmann et al., 2005), kann davon ausgegangen werden, dass alle Kombinationen etwa gleich häufig auftreten.

Abbildung 3. Diskrepante und kongruente Selbstwertschätzung

		Explizite Selbstwertschätzung	
		hoch	niedrig
Implizite Selbstwertschätzung	hoch	kongruent („sichere Selbstwertschätzung“)	diskrepant („verletzte Selbstwertschätzung“)
	niedrig	diskrepant („fragile Selbstwertschätzung“)	kongruent („niedrige Selbstwertschätzung“)

Kongruent hohe Selbstwertschätzung wird auch als *sichere Selbstwertschätzung* bezeichnet und als eine Form optimaler Selbstwertschätzung (Kernis, 2003) angeführt. Von den zwei möglichen Formen diskrepanter Selbstwertschätzung lag der Fokus der Forschung bisher hauptsächlich auf der *fragilen Selbstwertschätzung* (hohe explizite verbunden mit niedriger impliziter Selbstwertschätzung), während die andere Form der Diskrepanz (niedrige explizite verbunden mit hoher impliziter Selbstwertschätzung, von uns als *verletzte Selbstwertschätzung* bezeichnet) bisher kaum betrachtet wurde. Diese einseitige Konzentration der Forschung mag damit zusammenhängen, dass implizite Selbstwertschätzung zunächst

eingesetzt wurde, um widersprüchliche Ergebnisse in Bezug auf hohe explizite Selbstwertschätzung zu erklären.

1.4.1 Fragile Selbstwertschätzung

Die gemeinsame Berücksichtigung expliziter und impliziter Selbstwertschätzung ermöglichte es, klassische Theorien zum Narzissmus (z.B. Horney, 1937; Kernberg, 1975) zu testen, die Narzissten als Personen mit einem augenscheinlich positiven Selbstbild beschreiben, die sich unbewusst jedoch negativ bewerten. Angenommen wurde dabei, dass die unbewussten Selbstzweifel insbesondere bei Selbstwertbedrohungen (wie Misserfolgen und Ablehnung) bewusst werden können, was wiederum verbunden ist mit einem instabilen Selbstbild sowie Defensivität als Versuch, die positive Selbstsicht aufrecht zu erhalten oder wieder herzustellen.
In Übereinstimmung mit diesen Annahmen kann inzwischen als relativ gut belegt gelten, dass fragile Selbstwertschätzung mit Defensivität und ähnlichen dysfunktionalen Eigenschaften und Verhaltensweisen verbunden ist. Mehrere unabhängige Arbeitsgruppen fanden hierzu konzeptuell ähnliche Ergebnisse. Fragile Selbstwertschätzung hängt mit Narzissmus und instabilem Selbstwert zusammen (Jordan et al., 2003; Zeigler-Hill, 2006) und ist verbunden mit Selbstaufwertung und Selbstüberschätzung, wie sie sich beispielsweise in unrealistischem Optimismus sowie geringen Abweichungen zwischen Real- und Idealselbst ausdrückt (Bosson et al., 2003). Weiterhin sagt fragile Selbstwertschätzung defensive Verhaltensweisen, wie z.B. Dissonanzreduktion und Eigengruppenfavorisierung vorher (Jordan et al., 2003). Weitere Studien haben gezeigt, dass Personen mit fragiler Selbstwertschätzung insbesondere auf Selbstwertbedrohungen defensiv reagieren (Jordan, Spencer & Zanna, 2005; McGregor & Marigold, 2003; McGregor, Nail, Marigold & Kang, 2005) und Selbstregulationsprobleme zeigen (Lambird & Mann, 2006). Außerdem sind sie nach zwischenmenschlichen Verletzungen rachsüchtiger und reagieren auf Entschuldigungen mit weniger Vergebung und Empathie (Eaton, Struthers, Shomrony & Santelli, 2007).

1.4.2 Verletzte Selbstwertschätzung

Wie bereits angedeutet, wurde die andere Form der Selbstwertdiskrepanz (niedrig explizit, hoch implizit) bisher kaum betrachtet. In den Studien von Bosson et al. (2003) und Jordan

et al. (2003) fanden sich bei dieser Gruppe Hinweise auf höhere Defensivität im Vergleich zu Personen mit kongruent niedriger Selbstwertschätzung, ohne dass dies jedoch erwartet worden wäre. Die angebotenen Post-Hoc-Interpretationen waren nicht sehr schlüssig: Es wurde argumentiert, dass es sich bei den gefundenen Effekten um den Versuch handelt, ursprünglich positive Selbstbilder wieder herzustellen (Jordan et al, 2003). Auch wurden Interpretationen als Hoffnungsschimmer (Spencer, Jordan, Logel & Zanna, 2005) oder als Puffer gegen die Effekte niedriger expliziter Selbstwertschätzung (Bosson et al., 2003) angeboten. Insbesondere letztere Interpretation erscheint sehr widersprüchlich, weil sie das gleiche defensive Verhalten bei einer Gruppe (Personen mit fragiler Selbstwertschätzung) als dysfunktional, bei einer anderen Gruppe (Personen mit verletzter Selbstwertschätzung) aber als funktional auslegt.

Im Gegensatz dazu steht unsere Annahme, dass hohe implizite Selbstwertschätzung nicht notwendigerweise eine Ressource darstellen muss, sondern in Kombination mit niedriger expliziter Selbstwertschätzung (zumindest in bestimmten Bereichen) dysfunktional ist. Damit wird argumentiert, dass Selbstwertdiskrepanzen, gleich in welche Richtung, maladaptiv sind und Personen mit verletzter Selbstwertschätzung (niedrig explizit, hoch implizit) möglicherweise in bestimmten Bereichen sogar schlechter gestellt sind als Personen mit kongruent niedriger Selbstwertschätzung. Diese Annahme stützt sich auf klinische Theorien zu Subtypen des Narzissmus, Befunde zu Bescheidenheit und Forschung zu ambivalenten Einstellungen.

Zum ersten wurden in letzter Zeit Subtypen des Narzissmus beschrieben, die durch äußerlich negative Selbstbewertungen bei gleichzeitigen, weniger bewussten Gefühlen der Überlegenheit und Anspruchsdenken gekennzeichnet sind (z.B. Dickinson & Pincus, 2003). Einige klinische Theoretiker (z.B. Millon & Davis, 1996) nehmen an, dass eine derartige Diskrepanz auftreten kann, wenn ursprünglich hohe Selbstwertschätzung im Laufe der Zeit reduziert wird, weil beispielsweise übermäßig hohe Erwartungen nicht erfüllt werden konnten. In Anlehnung an dieses Konzept haben wir diese Diskrepanz (niedrig explizit, hoch implizit) vorläufig „verletzte Selbstwertschätzung“ genannt.

Zweitens könnte man annehmen, dass niedrige explizite verbunden mit hoher impliziter Selbstwertschätzung eine Form der Bescheidenheit darstellt, was bedeuten würde, dass sich Personen mit dieser Diskrepanz zwar positiv bewerten, dies jedoch nach außen nicht zeigen, was sich in niedrigen Werten im Selbstwertfragebogen widerspiegelt. Bescheidenheit ist jedoch nicht so uneingeschränkt positiv zu sehen, wie es auf den ersten Blick viel-

leicht scheinen mag: Neben vielen positiven Effekten von Bescheidenheit, insbesondere im interpersonellen Bereich (z.B. Keltner, Young & Buswell, 1997) wurden auch negative Effekte von Bescheidenheit gefunden, insbesondere in Bezug auf den Umgang mit eigenen Emotionen (Luminet, Bagby, Wagner, Taylor & Parker, 1999).

Zum dritten haben inzwischen viele Studien gezeigt, dass Personen gleichzeitig inkompatible oder ambivalente explizite Einstellungen, Emotionen oder Verhaltenstendenzen aufweisen können, was jedoch häufig als unangenehm empfunden wird und beispielsweise mit inneren Spannungen und negativen Emotionen einhergehen kann (z.B. Carver & Scheier, 1990; Hass, Katz, Rizzo, Bailey & Moore, 1992). Erst kürzlich wurde gezeigt, dass ähnliche Effekte auch bei Implizit-Explizit-Diskrepanzen auftreten können. Implizit-Explizit-Diskrepanzen sind verbunden mit inneren Konflikten, impliziten Selbstzweifeln und der Motivation, die Diskrepanzen aufzulösen, indem relevante Informationen gründlicher verarbeitet werden (für einen Überblick vgl. Briñol, Petty & Wheeler, 2006). Diese Effekte waren unabhängig von der Richtung der Diskrepanzen, was vermuten lässt, dass auch im Selbstwertbereich Diskrepanzen in beide Richtungen dysfunktionale Effekte haben könnten.

1.4.3 Eigene Untersuchungen zu Selbstwertdiskrepanzen

Um die Annahme zu prüfen, dass beide Formen diskrepanter Selbstwertschätzung dysfunktional sind, führten wir insgesamt drei Studien durch. Die ersten beiden Studien (veröffentlicht in Schröder-Abé, Rudolph, Wiesner & Schütz, 2007) knüpften zunächst an die Forschung zu Defensivität an. Unter Verwendung von zwei unterschiedlichen Maßen zur Erfassung impliziter Selbstwertschätzung (IPT in Studie 1 und IAT in Studie 2) wurde, wie angenommen, auch für Personen mit verletzter Selbstwertschätzung defensives Verhalten gefunden. Besonders hervorzuheben ist die zweite Studie, in der ein innovatives, nonreaktives Verfahren zur Erfassung von Defensivität eingesetzt wurde: Es wurde gemessen, wie schnell Personen eine Rückmeldung lasen und dabei angenommen, dass höhere Lesegeschwindigkeiten Defensivität in Form der Vermeidung eines negativen Feedbacks darstellen. Zudem wurde in dieser Studie eine situative Variable als Between-Subjects-Faktor eingeführt: Über die Vorgabe eines positiven vs. negativen Feedbacks wurde Selbstwertbedrohung manipuliert. Wie erwartet zeigten sich die Effekte der Selbstwertdiskrepanzen nur in der Bedingung mit Selbstwertbedrohung.

Anschließend gingen wir über die Untersuchung von Defensivität hinaus und wendeten uns dem Zusammenhang von Selbstwertdiskrepanzen und psychischer Gesundheit sowie dem Umgang mit Emotionen zu (veröffentlicht in Schröder-Abé, Rudolph & Schütz, 2007). Wir fanden, dass insbesondere Personen mit verletzter Selbstwertschätzung mehr Ärgerunterdrückung zeigten (Studie 1), einen depressiveren Attributionsstil aufwiesen sowie über mehr Krankheitstage stärkere Nervosität und Somatisierungstendenzen berichteten (Studie 2)[2] als Personen mit kongruent niedriger Selbstwertschätzung.

1.5 Kritik, offene Fragen und Ansätze für die zukünftige Forschung

Die berichteten Studien haben eine Reihe interessanter Ergebnisse erbracht, aber mindestens ebenso viele Fragen offen gelassen bzw. neue Fragen aufgeworfen. Im folgenden soll ausgehend von Kritik an den durchgeführten Untersuchungen sowie von Fragestellungen, die im Rahmen dieser Arbeit nicht beantwortet werden konnten, aufgezeigt werden, an welchen Punkten zukünftige Untersuchungen zur impliziten Selbstwertschätzung ansetzen könnten.

1.5.1 Erfassung impliziter Selbstwertschätzung

Mit der Untersuchung von Rudolph, Schröder-Abé, Gregg und Schütz (2007) wurde eine Art Update zur Studie von Bosson et al. (2000) erstellt, indem mehrere neu entwickelte Verfahren eingesetzt wurden. Im vorgegebenen Rahmen war es allerdings nicht möglich, alle Neuentwicklungen der letzten Jahre einzubeziehen. So wurden inzwischen weitere interessante und viel versprechende Verfahren, wie die Affect Misattribution Procedure (AMP, Payne, Cheng, Govorun & Stewart, 2005), die Implicit Association Procedure (IAP, Schnabel, Banse & Asendorpf, 2006), der Brief IAT (Sriram & Greenwald, 2007), sowie der Single Block IAT (Teige-Mocigemba, Klauer & Rothermund, 2007) entwickelt. Auch für diese Verfahren muss getestet werden, ob sie zur reliablen und validen Erfassung impliziter Selbstwertschätzung geeignet sind. Auch war es nicht möglich, unter den in unserer Studie eingesetzten Verfahren einen „Favoriten“ auszumachen, d.h. ein Verfahren, das die reliabelste und valideste Erfassung impliziter Selbstwertschätzung erlaubt. Dazu sind weitere Studien nötig, die insbesondere die prädiktive Validität bezüglich verschiede-

[2] In Studie 2 wurden Teile des Datensatzes, der auch der Studie 1 im Artikel von Schröder-Abé, Rudolph, Wiesner und Schütz (2007) zu Grunde liegt, unter anderem Aspekt ausgewertet.

ner Kriterien untersuchen. Wenn ein besseres Verständnis der Verfahren und ihrer zugrunde liegenden Prozesse erreicht ist, stellt sich möglicherweise heraus, dass für unterschiedliche Fragestellungen auch unterschiedliche Verfahren am besten geeignet sind.

Da auch in unserer Untersuchung selbst mit reliablen indirekten Verfahren nur sehr geringe Korrelationen mit expliziter Selbstwertschätzung gefunden wurden, scheint die Untersuchung von Moderatoren der Implizit-Explizit-Konsistenz (z.B. Hofmann et al., 2005) hier besonders viel versprechend. Der Moderatorenansatz kann zudem als eine Art „Spiegelbild“ zur Untersuchung von Selbstwertdiskrepanzen ansehen: Während Konsistenz beim Moderatorenansatz die „abhängige Variable“ darstellt, wird Konsistenz vs. Diskrepanz in den Untersuchungen zu Selbstwertdiskrepanzen als „unabhängige Variable“ betrachtet. Eine Integration beider Forschungstraditionen kann dabei sicher zu einer gegenseitigen Befruchtung beitragen.

Eine Frage, der in den letzten Jahren nur wenig Beachtung geschenkt wurde, ist die der im Selbstwert-IAT verwendeten Stimuli. Die meisten Studien verwendeten eine Version des von Greenwald und Farnham (2000) entwickelten affektiven Selbstwert-IATs. Bei diesem werden als Target-Stimuli Pronomen (wie „ich“, „sie“) und für die Attributkategorie positive und negative Substantive verwendet. Weniger häufig eingesetzt wurde die so genannte evaluative Variante (Greenwald & Farnham, 2000), bei der positive und negative Persönlichkeitseigenschaften für die Attributkategorie genutzt wurden. Die beiden Varianten korrelierten in der Studie von Greenwald und Farnham (2000) nur zu .43, was angesichts der im IAT enthaltenen Methodenvarianz nicht sehr hoch erscheint. Zwei Studien haben in jüngerer Zeit gezeigt, dass bei Verwendung derartiger Eigenschaftswörter (insbesondere aus dem instrumentellen Bereich) Haupteffekte für den IAT gefunden werden, die unter Verwendung der affektiven Variante nur selten auftreten. (Campbell, Bosson, Goheen, Lakey & Kernis, 2007; Dislich, Gschwendner, Zinkernagel, Hofmann & Schmitt, 2007). Möglicherweise lassen sich so, ähnlich wie bei expliziter Selbstwertschätzung (z.B. Schütz & Sellin, 2006), auch Facetten impliziter Selbstwertschätzung identifizieren, die prädiktive Validität für unterschiedliche Kriterien besitzen. Ebenso wurde bisher noch kaum untersucht, wie der Standard-IAT mit den unterschiedlichen Facetten expliziter Selbstwertschätzung korreliert (erste Befunde liegen lediglich von Dijksterhuis, Albers & Bongers, in press, vor).

1.5.2 Diskrepanzen zwischen expliziter und impliziter Selbstwertschätzung

Die hier vorgestellten Befunde gehören zu den ersten, die Zusammenhänge zwischen verletzter Selbstwertschätzung und Defensivität sowie beeinträchtigter Gesundheit aufzeigen. Natürlich sind hier Replikationen nötig, welche uns auch, teils mit ähnlichen, teils mit neuen Kriteriumsmaßen bereits gelungen sind. So fanden sich Zusammenhänge zwischen Selbstwertdiskrepanzen und beeinträchtigter Emotionsregulation (Schröder-Abé, Rudolph & Schütz, 2006) sowie geringerer Partnerschaftszufriedenheit und Liebe zum Beziehungspartner (Schütz, Schröder-Abé, Horch & Rudolph, 2007).

Die hier vorgestellten Studien setzten teilweise Selbstberichtsverfahren zur Erfassung der Kriterien ein. Dadurch kann nicht ausgeschlossen werden, dass die Befunde teilweise durch gemeinsame Verzerrungen der Selbstberichtsverfahren (z.B. durch soziale Erwünschtheit) für expliziten Selbstwert und Gesundheit unterliegen – obwohl dies nicht die zentralen Ergebnisse zum moderierenden Einfluss durch indirekte Verfahren, die deutlich schwerer zu fälschen sind als direkte Verfahren (z.B. Banse et al., 2001; Steffens, 2004), erklären kann. Dennoch scheint es angebracht, diesen Kritikpunkt auszuräumen, und objektivere Kriteriumsmaße zu verwenden. Erste Befunde liegen auch hierzu bereits vor: Die gefundenen Effekte konnten auch dann repliziert werden, wenn Gesundheit im Fremdurteil durch zwei gute Freude oder Bekannte erhoben wurde. Ebenso sagen Selbstwertdiskrepanzen niedrigere Sympathie-Ratings durch unabhängige Beobachter vorher (Schröder-Abé, Rudolph & Schütz, 2007, September).

In unseren Studien wurden teilweise Effekte für beide Formen diskrepanter Selbstwertschätzung gefunden, teilweise aber auch nur für eine der beiden Formen. Hier werden zukünftige Studien klären müssen, für welche Kriterien und unter welchen Bedingungen negative Effekte für welche Art der Diskrepanz erwartet werden können. Möglicherweise wirkt sich fragile Selbstwertschätzung im zwischenmenschlichen Bereich negativer aus, verletzte Selbstwertschätzung hingegen im Gesundheitsbereich. Auch deutet sich an, dass fragile Selbstwertschätzung in Situationen der Selbstwertbedrohung eine größere Rolle spielt als in neutralen Situationen, während die Effekte für verletzte Selbstwertschätzung auch ohne Selbstwertbedrohung gefunden wurden.

Das größtenteils korrelative Design der vorgestellten Studien ermöglicht es bisher nicht, Aussagen zu Kausalbeziehungen zwischen den Variablen zu treffen. Hier sind

längsschnittliche Studien vonnöten, die Änderungen in der impliziten und expliziten Selbstwertschätzung ebenso erfassen wie Änderungen in Gesundheit und Wohlbefinden sowie auftretende positive und negative Ereignisse. Weiterhin können Studien informativ sein, in denen implizite und/oder explizite Selbstwertschätzung manipuliert werden (z.B. Dijksterhuis, 2004) und in denen überprüft werden kann, ob sich die auf dispositioneller Ebene gefundenen Effekte auch zeigen, wenn Selbstwertdiskrepanzen oder -kongruenzen kurzfristig durch Manipulationen hergestellt werden.

Wichtig ist auch, in zukünftigen Studien zu klären, durch welche vermittelnden Prozesse Selbstwertdiskrepanzen sich negativ auf Gesundheit und Wohlbefinden auswirken. Mediationsanalysen könnten hier u.a. Aufschluss bieten. Die bisherigen Befunde legen die Vermutung nahe, dass motivationale (z.B. Attributionsstil) und emotionale Prozesse (z.B. Ärgerunterdrückung) eine vermittelnde Funktion zwischen Selbstwertdiskrepanzen und beeinträchtigter Gesundheit einnehmen könnten. Einen interessanten Hinweis liefert hierzu auch eine inzwischen erschienene Studie von Zeigler-Hill und Terry (2007). Die Autoren fanden bei Personen mit verletzter Selbstwertschätzung mehr maladaptiven Perfektionismus. Da maladaptiver Perfektionismus mit depressiven Tendenzen zusammenhängt und möglicherweise eine gute Operationalisierung der von klinischen Theoretikern (z.B. Millon & Davis, 1996) angenommenen überhöhten Ansprüche darstellt, könnte dieser den Zusammenhang von Selbstwertdiskrepanzen und beeinträchtigter Gesundheit vermitteln.

Eine große offene Frage ist auch, durch welche Prozesse Selbstwertdiskrepanzen entstehen können. Die bisherige Forschung zu Selbstwertdiskrepanzen ließ sich von klinischen Narzissmustheorien inspirieren. Die auf diesen Theorien beruhenden Annahmen zur Entstehung von Selbstwertdiskrepanzen hängen aber stark von der Annahme ab, dass implizite Selbstwertschätzung insbesondere in früheren Lebensphasen beeinflusst wird und anschließend relativ stabil bleibt (Wilson, Lindsey & Schooler, 2000). Hierfür wurde erste Evidenz gefunden (DeHart, Pelham & Tennen, 2006): In drei Studien wurden Zusammenhänge zwischen impliziter Selbstwertschätzung und durch die Probanden selbst bzw. durch deren Eltern berichteten frühen Interaktionen gefunden: Elterliche Wärme ist mit höherer, elterliche Überbehütung mit niedriger impliziter Selbstwertschätzung verbunden. Ähnliche Befunde zeigten sich für den Zusammenhang zwischen erinnerten elterlichen Erziehungsstilen und Narzissmus (z.B. Otway & Vignoles, 2006). Allerdings ist anzumerken, dass die Ergebnisse zu impliziter Selbstwertschätzung bisher nur mit einem indirekten Maß (Initia-

lenpräferenz) gefunden wurden und als retrospektive Einschätzungen möglichen Erinnerungsverzerrungen unterliegen können.

Trotz dieser ersten ermutigenden Befunde muss die Annahme stabiler impliziter Repräsentationen aufgrund mehrerer Befunde angezweifelt werden. Zum einen hat sich schon früh gezeigt, dass die Retest-Reliabilitäten indirekter Maße nur moderat ausgeprägt sind (Bosson et al., 2000), ein Befund, der auch in unseren eigenen Studien mit neueren Maßen mit guter interner Konsistenz bestätigt werden konnte (Rudolph et al., 2007). Indirekte Verfahren scheinen also zumindest teilweise auch State-Varianz zu erfassen (Schmuckle & Egloff, 2005), was durch Befunde untermauert wird, die zeigen, dass implizite Selbstwertschätzung zumindest für bestimmte Personen (z.B. mit niedriger Selbstkonzeptklarheit) mit täglichen negativen Ereignissen variiert (DeHart & Pelham, 2007). Zudem hat sich gezeigt, dass implizite Selbstwertschätzung beispielsweise durch Priming (Hannover, Birkner & Pöhlmann, 2006) sowie evaluatives Konditionieren verändert werden kann (Baccus, Baldwin & Packer, 2004; Dijksterhuis, 2004), wobei aber derartige Effekte nicht sehr lange anzuhalten scheinen (Schnabel, 2007). Da zusätzlich auch direkte Maße gewissen Schwankungen unterworfen sind, ist zu vermuten, dass Diskrepanzen noch instabiler sind als explizite und implizite Selbstwertschätzung allein. Aus diesem Grund sollten auch alternative Modelle zur Erklärung der Effekte in Betracht gezogen werden. Hier könnte das APE-Modell (Gawronski & Bodenhausen, 2006) hilfreich sein: Da implizite und explizite Repräsentationen durch unterschiedliche Prozesse beeinflusst werden (siehe dazu v.a. auch Grumm, Nestler & v. Collani, 2007), treten möglicherweise asymmetrische Veränderungen auf, die wiederum zu Diskrepanzen, beispielsweise zwischen impliziter und expliziter Selbstwertschätzung führen können. Die Frage nach der Stabilität derartiger Effekte und den Ursachen für die Zusammenhänge zwischen Selbstwertdiskrepanzen und dysfunktionalem Verhalten wäre aber auch hier zu klären.

1.5.3 Implizite Selbstwertschätzung und Selbstwertdiskrepanzen in klinischen Stichproben

Während hohe Selbstwertschätzung häufig als Indikator psychischer Gesundheit angesehen wird, ist niedrige Selbstwertschätzung ein Merkmal vieler psychischer Störungen. Empirische Befunde zeigen dies u.a. bei Depressionen, Ängsten und Zwängen, Essstörungen, Schizophrenie, Delinquenz, Alkohol- und Drogengebrauch, Suizidversuchen und Persön-

lichkeitsstörungen (für einen Überblick siehe Rudolph, Schütz & Schröder-Abé, in Druck; Westen & Kegley-Heim, 2003).

Bezüglich impliziter Selbstwertschätzung ist die Befundlage noch nicht so klar. Selbstwertbeeinträchtigungen werden beispielsweise im Rahmen der Kriterien einer Depression in den Manualen für die Diagnostik psychischer Störungen ICD-10 und DSM-IV sowie in der Theorie der erlernten Hilflosigkeit (Seligman, 1975) und der kognitiven Triade der Depression (Beck, 1974) ausdrücklich genannt. In mehreren unabhängigen Studien konnten bisher jedoch keine Hinweise auf eine beeinträchtigte implizite Selbstwertschätzung bei depressiven Personen gefunden werden (De Raedt, Franck, Schacht & De Houwer, 2006; Franck, De Raedt & De Houwer, 2007; Gemar, Segal, Sagrati & Kennedy, 2001). Erste Hinweise für eine im Vergleich zu gesunden Kontrollgruppen beeinträchtige implizite Selbstwertschätzung zeigen sich jedoch für schizophrene PatientInnen (Moritz, Werner & v. Collani, 2006), PatientInnen mit einer körperdysmorphen Störung (Buhlmann, Teachman, Gerbershagen, Kikul & Rief, 2007) sowie PatientInnen mit einer Borderline Persönlichkeitsstörung (Schröder-Abé, Vater, Rudolph & Schütz, 2006). Insbesondere tiefgreifende psychische Störungen scheinen also mit verringerter impliziter Selbstwertschätzung verbunden zu sein.

Bei derartigen Befunden zu Gruppenunterschieden sollte jedoch beachtet werden, dass kognitive Fähigkeiten (Back et al., 2005; Klauer & Mierke, 2005; McFarland & Crouch, 2002; Mierke & Klauer, 2001, 2003) mit der Gruppenzugehörigkeit konfundiert sein können, so dass die Daten besonders sorgfältig geprüft und behandelt (Nosek et al., 2003; Conrey et al., 2005; Klauer et al., 2007) und Interpretationen besonders vorsichtig vorgenommen werden sollten.

Nachdem sich in studentischen Stichproben Evidenz für die Dysfunktionalität von Selbstwertdiskrepanzen gezeigt hat, stellt sich zusätzlich die Frage, inwiefern die Ergebnisse auch auf klinische Stichproben übertragbar sind. Hier zeigen sich erste Ergebnisse für Patientinnen mit einer Borderline Persönlichkeitsstörung: Patientinnen mit diskrepanter Selbstwertschätzung zeigten mehr borderlinespezifische Symptome, insbesondere mehr Autoaggression und verstärkte Probleme in der Selbstwahrnehmung (Vater, Schröder-Abé, Schütz & Lammers, 2007).

Der Aufbau einer positiven und stabilen expliziten Selbstwertschätzung stellt seit langen eine wichtige Säule verschiedenster therapeutischer Ansätze dar (Rudolph et al., in Druck). Sollten sich die ersten Hinweise zur Bedeutsamkeit impliziter Selbstwertschätzung bei

psychischen Störungen und Persönlichkeitsstörungen erhärten, wäre langfristig auch zu prüfen, ob sich diese Erkenntnisse auch im Rahmen von Therapieansätzen sinnvoll nutzen lassen. Zum einen könnten Methoden zur Steigerung impliziter Selbstwertschätzung (vgl. Baccus, et al., 2004; Dijksterhuis, 2004) eingesetzt werden, wenngleich Befunde zur Stabilität der Effekte und zur Wirksamkeit bei psychischen Störungen noch ausstehen.
Angesichts der in der vorliegenden Arbeit aufgezeigten Ergebnisse zur Dysfunktionalität von Selbstwertdiskrepanzen scheint es insbesondere auch wichtig zu sein, explizite oder implizite Selbstwertschätzung nicht einseitig zu erhöhen. Würde beispielsweise der explizite Selbstwert einer Person, deren impliziter Selbstwert niedrig ist, durch psychotherapeutische Interventionen gefördert, entstünde eine Selbstwertdiskrepanz im Sinne fragiler Selbstwertschätzung (explizit hoch, implizit niedrig). In diesem Fall könnte eine zusätzliche Intervention zur Erhöhung impliziter Selbstwertschätzung hilfreich sein, kongruent hohen Selbstwert zu fördern (explizit hoch und implizit hoch) und somit dem Aufbau fragiler, mit defensiven Verhaltensweisen verbundener, Selbstwertschätzung entgegenzuwirken. Ein weiterer Ansatz wäre, nicht direkt auf die Höhe expliziter oder impliziter Selbstwertschätzung Einfluss zu nehmen, sondern Diskrepanzen zu beseitigen. Vorstellbar wären hierbei u.a. sogenannte Mindfulness-Trainings (Brown & Ryan, 2003).

1.6 Fazit

Anhand der oben aufgeführten Ansätze für zukünftige Studien wird deutlich, dass im noch jungen Gebiet der Forschung zu impliziter Selbstwertschätzung noch deutlich mehr Fragen offen als bereits beantwortet sind. Die vorliegende Arbeit hat ihren Beitrag zu diesem Forschungsfeld geleistet, indem sie aufgezeigt hat, mit welchen Verfahren implizite Selbstwertschätzung reliabel und valide erfasst werden kann. Außerdem wurde in mehreren Studien demonstriert, dass Diskrepanzen zwischen impliziter und expliziter Selbstwertschätzung mit defensivem Verhalten und Beeinträchtigungen in Gesundheit und Wohlbefinden einhergehen. Ich freue mich darauf, in nächster Zeit wenigstens einigen der offenen Fragen nachzugehen und mich weiterhin mit dem faszinierenden Forschungsthema „Implizite Selbstwertschätzung“ zu beschäftigen.

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2. Zeitschriftenartikel

Through a Glass, Less Darkly?
Reassessing the Convergent and Divergent Validity of Implicit Self-Esteem

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Abstract

Self-esteem has been traditionally measured by self-report (explicit self-esteem: ESE). However, the limitations of self-report have prompted efforts to index self-esteem using more indirect measures (implicit self-esteem: ISE). In addition, it has been theorized that ISE and ESE reflect the operation of largely distinct mental systems. Indeed, low correlations between indices of ISE and ESE support their divergent validity; however, similar correlations between indices of ISE fail to support their convergent validity. We explored whether such patterns would re-emerge if newer, more specific, and more reliable measures of ISE were used. In general, they did, although convergent validity among measures of ISE emerged once confounds due to conceptual mismatch, individual differences, and random variability were minimized. Our findings suggest low correlations among measures of ISE are not due to the usual psychometric suspects, but to other factors that may include subtle aspects of their underlying structure.

To investigate people's attitude towards themselves—their *self-esteem*—psychologists have traditionally relied on self-report (Blascovich & Tomaka, 1991; Rosenberg, 1965). Fortunately, when reporting their self-esteem, people are reasonably knowledgeable about themselves, honest with themselves, and honest with others. Nonetheless, people sometimes lack self-insight ("How do I feel about myself *really*?"; Wilson, 2002), deceive others ("I really think I'm useless, but I better pretend to be great!"; Schlenker & Leary, 1982), or deceive themselves ("I'm great—even if everyone hates me!"; Paulhus, Fridhandler, & Hayes, 1997). Hence, self-reports of self-esteem, though tolerably valid, still contain some systematic error.

One way to curtail such error is to employ *indirect measures* of self-esteem (Greenwald & Farnham, 2000) that specifically seek to infer people's attitude towards themselves from their reactions to stimuli representing the self (e.g., first and last names, first-personal pronouns), typically under conditions where people are either unaware of, or lack control over, the measurement process (e.g., Rudolph, Schröder, & Schütz, 2006). Consider unawareness: the *initials preference task* (*IPT*; Koole & Pelham, 2003; Nuttin, 1985), for example, requires respondents to rate all letters of the alphabet for likeability, whereupon people typically exhibit an unknowing preference for their initials.[1] Or consider uncontrollability: the *Implicit Association Test (IAT*; Greenwald, McGhee, & Schwartz, 1998) requires respondents to co-classify self-related and self-unrelated stimuli alongside positive and negative stimuli, whereupon people typically find the task more difficult with categories configured one way (e.g., *Self* with *Bad*, *Non-Self* with *Good*) rather than another (e.g., *Self* with *Good*, *Non-Self* with *Bad*). What indirect measures assess is often termed *implicit self-esteem* (*ISE*), in contrast to what self-report measures assess, namely *explicit self-esteem* (*ESE*). The properties of ISE have been presumed to reflect properties of the indirect measures used to assess it (e.g., ISE is unconscious and automatic; Greenwald & Farnham, 2000). Nonetheless, it remains controversial whether indirect measures operate via *wholly* implicit process (for a discussion, see De Houwer & Moors, 2007).

Recent empirical research has addressed basic psychometric issues, such as whether different measures of ESE and ISE correlate, and whether different measures of ISE intercorrelate (Bosson, Swann, & Pennebaker, 2000). Here, two consistent patterns have emerged, one reassuring, the other more troubling. The first pattern suggests *divergent validity*: ISE and ESE typically show *low* positive correlations. Although

moderators of correlation magnitude have been identified (e.g., Pelham, Koole, Hardin, Hetts, Seah, & De Hart, 2005; Riketta, 2005), the general pattern is consistent with the existence of two distinct underlying constructs. The second pattern, however, suggests a *lack* of *convergent validity*: different measures of ISE typically *fail* to intercorrelate highly. If valid, this pattern implies one of two things: either (a) ISE exists and is heterogeneous; or (b) ISE does not even exist. The matter remains unresolved. However, most measures of ISE *do* converge insofar as they register a pronounced average self-positivity bias (e.g., Greenwald & Farnham, 2000; Gregg & Sedikides, 2007; Nosek, 2007). In addition, such measures exhibit meaningful antecedents and consequences (for an overview see Koole & DeHart, 2007; for self-esteem discrepancies see Schröder-Abé, Rudolph, & Schütz, 2007). Hence, there are some reasons to believe (a) over (b).

However, an even gloomier possibility exists: *both* patterns could be artifacts of measurement error. Measures of ISE have a reputation for unreliability (Bosson et al., 2000). Such unreliability could obscure latent correlations, and falsely suggest that ESE and ISE diverge when they do not, or that different indices of ISE do not converge when they do.

In this paper, we reconsider the issue of the convergent and divergent validity of ISE. In particular, we investigate whether and to what extent (a) the reliability and sensitivity of different measures of ISE, and (b) the conceptual correspondence between what different measures of ISE assess, moderate the relationship between measures of ISE and ESE, and between measures of ISE. We then attempt to formulate concrete and constructive recommendations for future research, and make some empirically informed theoretical interpretations.

Some years ago, one study concluded that the IAT and the IPT were the most reliable and valid measures of ISE available (Bosson et al., 2000). Since then, however, indirect measures have proliferated. In particular, three new measures have emerged which—unlike the IAT—permit associations toward an object to be assessed in isolation: the *Single-Category (Target) IAT*[2] *(SC-IAT*; Karpinski & Steinman, 2006; *ST-IAT*; Wigboldus, Holland, & van Knippenberg, 2005), the *Extrinsic Affective Simon Task* (*EAST*; De Houwer, 2003), and the *Go/No-Go Association Task* (*GNAT*; Nosek & Banaji, 2001). These new measures are of interest because they enable self-related evaluations independently of other-related evaluations (see Pinter & Greenwald, 2005), with potentially positive implications for their construct validity and potential to intercorrelate.

In addition, due to acknowledged problems concerning the effect size and reliability of the EAST, an improved variant of the EAST, namely the *Identification* EAST (*ID-EAST*), has been devised (De Houwer & De Bruycker, 2007). Furthermore, the present authors have devised a potentially more reliable version of the IPT, namely the *Duplicate* IPT (*D-IPT*). To update the literature, we conducted three studies to compare and contrast the older IAT and IPT with the newer SC-IAT, EAST, ID-EAST, GNAT, and D-IPT as putative indices of ISE. In addition to using new measures of ISE, we also applied more recently developed algorithms (e.g., *D*-index; Greenwald, Nosek, & Banaji, 2003) to maximize validity, and employed standardized indices of internal consistency (based on equivalent split-halves, and incorporating Spearman-Brown adjustments).

STUDY 1

In our first study, we evaluated three different measures of ISE: an IPT, an EAST, and an IAT. We quantified their internal consistency, their test-retest stability one-week apart, their intercorrelations, and their correlations with ESE.

Method

Participants and Procedure

A total of 102 students (80 female; M_{AGE} = 22.7) participated.[3] They began by providing basic demographic data and by generating an ID code that contained their first and last initials. Next, they completed three measures of ISE in a fixed order: an IPT, an IAT, and an EAST. Finally, participants completed a measure of ESE. They were then dismissed, but returned exactly one week later to redo the three measures of ISE.

Measures of ISE and ESE

IPT. As described by Bosson et al. (2000), participants rated each letter of the alphabet on a scale ranging from 1 (*I dislike this letter very much*) to 7 (*I like this letter very much*). To derive an initials preference index that controlled for general letter popularity and personal rating tendencies, we followed the guidelines described by Koole, Dijksterhuis, and van Knippenberg (2001). Split-half estimates of internal consistency were derived from correlating ratings for first and last initials.

IAT. The IAT conformed to the canonical five-block structure and procedure (see Appendix; Greenwald & Farnham, 2000). Critical block order was kept constant to reduce method variance. The IAT index was computed using the scoring algorithm (the *D*-index) recommended by Greenwald et al. (2003). Higher scores reflect an automatic preference for *Self* over *NonSelf*. The IAT's internal consistency was based on a split-half correlation,

the split-halves being derived from alternating pairs of trials in the compatible and incompatible blocks. This served to ensure (a) that both halves were maximally comparable and (b) that attribute and target trials were equivalently represented in each half.[4]

EAST. The EAST featured the same general structure and response options as described by De Houwer (2003). Analogous to the IAT, the EAST index was computed using the *D*-index. Higher scores reflect an automatic preference for *Self* specifically. Internal consistency was derived on the basis of a split-half estimation like the above.

ESE. The total score from the 32-item Multidimensional Self-Esteem Scale (*MSES*; Schütz & Sellin, 2006) served as our index of ESE. Each item featured a seven-point scale with one of two types of endpoints (1 = *Not at All* to 7 = *Very Much*; 1 = *Never* to 7 = *Always*.)

Results and Discussion

Overall Effects. All indices of ISE, like the index of ESE, yielded significant effects that were both positive in sign and large in magnitude, although the EAST index lagged comparatively behind the others (see Table 1). Thus, all indices of self-esteem, implicit and explicit, converged at a directional level, in that they revealed a general bias towards positive self-evaluation.

Internal Consistency and Temporal Stability. As Table 1 shows, the IAT displayed satisfactory levels of internal consistency. However, levels were less satisfactory for the IPT, and unsatisfactory for the EAST. In addition, only the IAT (r_{tt} = .54) and the IPT (r_{tt} = .56) but not the EAST (r_{tt} = .18) showed satisfactory levels of temporal stability over one week.

Intercorrelations. Correlations between the three indices of ISE hovered around zero on both measurement occasions (see Table 2). In addition, neither the IPT nor the IAT index correlated significantly with the ESE index on either occasion; and although the EAST index did on one occasion, its failure to do so on another, combined with its trifling internal consistency, suggest that this correlation is a fluke.

The overall pattern implies that, although indices of ISE and ESE show directional convergence, they do not show convergence at the level of individual scores. Hence, it would seem either that the underlying “elephant” of ISE (Bosson et al., 2000) is an illusory beast or that different indices of ISE map on to utterly different parts of that underlying “elephant”. However, given that the IAT and IPT at least showed a degree of internal

consistency, the lack of emergent relations does not appear to have been solely the result of measurement unreliability.

STUDY 2

We proceeded to test a further indirect measure of ISE capable of specifically assessing automatic attitudes toward the *Self* —the SC-IAT—in conjunction with structurally improved versions of previous measures (i.e., the ID-EAST and D-IPT) plus an IAT. We examined their relative psychometric properties, their intercorrelations, and their correlations with ESE.

Method

Participants and Procedure

A total of 60 students (11 female; M_{AGE} = 22.4) participated. In fixed order, participants completed four measures of ISE (an IAT, an IPT, an ID-EAST, and a SC-IAT) followed by one measure of ESE. Due to computer problems, data from eleven participants on the ID-EAST were lost. Additionally, one participant was excluded due to extreme scores.

Measures of ISE and ESE

D-IPT. The IPT was administered as in Study 1 except that all letters were now presented for rating, not just once, but *twice*, in the same fixed random order. The repetition was designed to increase its reliability. An overall initial preference index was derived by averaging the two initial preference scores (calculated as before) computed separately from each of the rated alphabets. We estimated internal consistency using split-halves based on the (now averaged) initials preference scores for first and last initials.

IAT. The layout of the IAT, and the computation of its results, was the same as in Study 1. The only difference was the addition of a few extra target stimuli (e.g., I, mine, their, them), to broaden the generality of findings; these were also added to the SC-IAT and the ID-EAST.

SC-IAT. Unlike the IAT, the two critical blocks of the SC-IAT required participants to classify stimuli into one of three categories using two keys (see Appendix; Karpinski & Steinman, 2006). Automatic liking for self was indexed by an analogue of the *D*-index. Internal consistency was estimated as for the IAT.

ID-EAST. The ID-EAST contains a structural modification designed to ensure that the stimuli it contains are processed semantically rather than featurally (De Houwer & De Bruycker, 2007).[5] We adopted a single category version of the ID-EAST, using only the

Me target category (see Appendix).[6] Trial data were aggregated, and internal consistency was estimated, just as in the original EAST.

MSES. As in Study 1, ESE was measured with the MSES (Schütz & Sellin, 2006).

Results and Discussion

Overall Effects. Again, all indices, yielded significant effects that were both positive in sign and large in magnitude, with the ID-EAST index lagging behind the others (see Table 1). Thus, a convergent directional bias towards positive self-evaluation re-emerged.

Internal Consistency.[7] Both the IAT and SC-IAT displayed high levels of internal consistency: with the value for the latter even numerically exceeding that for the former (Table 1). In addition, both the D-IPT and the ID-EAST showed reasonable levels of internal consistency, respectively higher than for the IPT and original EAST in Study 1.

Intercorrelations. Overall, the pattern replicated Study 1 (Table 2). First, no correlation between any index of ISE and the ESE index approached significance. Second, none of the intercorrelations between indices of ISE attained significance, although one approached it. However, given that, thanks to methodological innovations to the EAST and IPT, the internal consistency was even higher than in Study 1, measurement unreliability is unlikely to be whole explanation for the absence of significant correlations.

Nonetheless, from an exploratory perspective, one might ask why the sole marginal correlation found was between the ID-EAST and the SC-IAT. Both indices reflect specific self-attitudes (as opposed to the relative index of the IAT), and that both take the form of speeded classification tasks: hence, both indices correspond conceptually, and derive from techniques that possess methodological communalities.

STUDY 3

Our investigations of measures of ISE had yet to include a promising methodology: the GNAT, originally designed to provide an alternative to the IAT assessing automatic associations towards individual objects. In Study 3, therefore, we duly examined the reliability and sensitivity of the GNAT as a potential measure of ISE. We additionally examined the relation of the GNAT to another indirect measure of self-esteem, the IAT, as well as to a traditional direct measure (Rosenberg, 1965).

One notable feature of the GNAT is that, when used to assess automatic associations towards *two* individual objects, the results obtained can be combined to create an index that conceptually corresponds to the index yielded by a conventional IAT. In

particular, if one derives a *comparative index* from the GNAT that captures both automatic liking for *and* automatic dislike of *both* Self and NonSelf, this will map on to the IAT index that assesses automatic *preference* for Self *over* NonSelf. Building on the suggestive results of Study 2, with regard to the one marginal correlational observed, we tested in Study 3 whether the IAT index would correlate better with a comparative GNAT index than with specific GNAT indices, given that the conceptual correspondence would be exact in the former case, but inexact in the latter cases.

We also explored the impact on levels of convergent validity of attempting to reduce, first, systematic error (i.e., variance due to individual differences in classification ability), and second, random error (i.e., variance due to measurement unreliability). Specifically, we (a) compared correlations obtained using the original IAT index (Greenwald et al., 1998) to those based on the newer algorithm (Greenwald et al., 2003)—thereby controlling for some systematic error— and (b), compared the second set of correlations to corresponding coefficients estimated in a structural model—thereby controlling for random error. We predicted that the combined use of both the improved algorithm and structural modeling would increase convergent validity.

Method

Participants and Procedure

The sample comprised 195 students.[8] They were predominantly young (M_{AGE} = 20.5) and female (85%). Due to participant dropout, technical failures, task non-compliance, or extreme scores, listwise *N*s ranged from 182 to 195 across various analyses. The data subset featured scores from two self-esteem IATs and GNATs, both run twice a week apart, together with the similar scores from a traditional self-esteem questionnaire. The IAT and GNAT contained identical stimuli and categories. To generate manifest variables on the basis of which latent correlations could be estimated, we created four parcels for each measure, consisting of equivalent split-halves derived from each of the two measurement occasions.

Measures of ISE and ESE

IAT. The IAT in Study 3 closely resembled those in preceding studies, except that it comprised only two critical blocks (Teachman, Gregg, & Woody, 2001) presented in random order.

GNAT. The GNAT (Nosek & Banaji, 2001) comprised four blocks (*Self-Positive*, *Self-Negative*, *NonSelf-Positive*, and *NonSelf-Negative*) presented in random order, each of

which featured two target categories out of a possible four (i.e., *Self, NonSelf, Positive, Negative*). Participants attempted to press a key by a tight 750ms deadline when a word presented matched those categories, but not to press it when a word did not (see Appendix). Accordingly, data on each trial could be classed as a *hit, false alarm, correct rejection* or *miss*. Overall accuracy within each block at distinguishing target from non-target items was duly quantified by *d'* (i.e., the normalized hit rate minus the normalized false alarm rate; Green & Swets, 1966).

We derived *five* GNAT indices. In particular, four *differential d' indices* were computed: *Self P>N* (*d'* in the *Self-Positive* block minus *d'* in the *Self-Negative* block); *NonSelf N>P* (*d'* in the *NonSelf-Negative* block minus *d'* in the *NonSelf-Positive* block); *Positive S>NS* (*d'* in the *Self-Positive* block minus *d'* in the *NonSelf-Positive* block); and *Negative NS>S* (*d'* in the *NonSelf-Negative* block minus *d'* in the *Self-Negative* block). Finally, we computed the key *comparative index* (*Overall*), by averaging *Self P>N and NonSelf N>P*.

ESE. We used a 10-item questionnaire (*RSES*; Rosenberg, 1965) to assess participants' overall liking for themselves along a four-point scale (1 = strongly agree; 4 = strongly disagree).

Results

Overall Effects and Reliability. Averaging across sessions, GNAT indices showed satisfactory internal consistency (differential indices *r*s = .52 to .59; comparative index *r* = .65), modest test-retest reliability (differential indices *r*s = .23 to .38; comparative index *r* = .51), and high sensitivity to self-positivity bias (differential indices *d*s = .80 to 1.60; comparative index *d* = 1.56). Corresponding IAT indices were comparable (original index: r_{ic} = .85, r_{tt} = .39, *d* = 1.66; new index: r_{ic} = .67, r_{tt} = .29, *d* = 1.54). Hence, both measures of ISE exhibited adequate psychometric properties.

Convergent Validity. Table 4 displays the correlations between each of the five GNAT indices and (a) the original IAT index, (b) the new IAT index, and (c) the new IAT index, estimated as part of structural model (also including the RSES index). In all cases, values reflect data aggregated across or derived from all sessions.

As predicted, the correlations with differential and comparative GNAT indices were always larger when the new IAT index was used as opposed to the original IAT index. Moreover, they were larger again when estimated from a structural model using the new IAT index. In particular, this increase in magnitude coincided with one index (*Positive*

S>NS) yielding newly statistical significant results ($p < .05$), and another index (*Overall*) yielding them at a more stringent level ($p < .01$). Finally, numerically higher correlations were obtained for the *Overall* GNAT index than for any of the other GNAT indices, suggesting that use of a conceptually corresponding measure maximizes the chance of obtaining convergent validity. Although the increment in the magnitude and reliability of correlations after taking each step was admittedly small, the *combined* increment after taking all three steps was consequential. For example, if a researcher using our dataset had *neither* attempted to minimize systematic and random error *nor* attempted to use a conceptually convergent index, then he or she might well have falsely concluded that the IAT and GNAT (e.g., using the *Positive S>NS* index) did *not* converge ($r = .11$, $p = .14$), whereas had they taken all these steps, they would have correctly concluded that the IAT and GNAT (using the *Overall* index) *did* converge ($r = .27$, $p < .01$). Indeed, when underlying relations are weak, as in the present case, it is critical to maximize all available statistical power and conceptual correspondence.

Divergent Validity. The RSES failed to covary even marginally with either index of ISE, both at the level of raw correlations (GNAT: $-.07 < r < -.01$; IAT: $.01 < r < .10$) and estimated structural coefficients (GNAT: $-.11 < r < -.01$; IAT: $r \approx .01$). Thus, both the GNAT and IAT indices were still independent of the RSES index.

General Discussion

We close by making some practical recommendations for researchers wishing to explore ISE empirically and then draw some theoretical conclusions from our findings.

Practical Recommendations

Across three studies, the IAT—and two of its methodological offshoots designed to capture ISE more specifically, the SC-IAT and GNAT—exhibited good or satisfactory levels of reliability. The IPT and EAST exhibited comparatively lower levels, although their improved methodological variants, the D-IPT and ID-EAST, fared somewhat better. Hence, the former set of measures are, for psychometric reasons, to be recommended over the latter set (at least in their original form) for use in research on individual differences in ISE. In addition, the smaller aggregate self-positivity biases obtained for the EAST and ID-EAST (although not for the IPT and D-IPT) suggest less sensitivity self-positivity bias, and may counterindicate their use.

Theoretical Conclusions

If ISE is a single construct distinct from ESE, then one would expect, all else equal, different indices of ISE to correspond more strongly with one another than with an index of ESE. Having employed several newly developed, reliable, and specific measures of ISE (i.e., the SC-IAT, EAST, and GNAT), what did we find?

First, we found that, despite a pronounced positivity bias for ESE and ISE indices at a directional level, individual ISE scores remained independent of individual ESE scores. Moreover, this independence could not be attributed to measurement unreliability: most indices exhibited satisfactory or good internal consistency, and estimated structural coefficients were no higher than observed raw correlations. Nor could this independence be attributed to a lack of correspondence between direct and indirect measures of self-esteem: the more specific ISE indices did not correlate any better with ESE than the relative IAT indices. Thus, in the absence of other explanations, our results are in keeping with dual-process models of cognition when applied to self-esteem (Epstein, 2003; Strack & Deutsch, 2004). However, our results also go beyond them, for these models postulate that underlying implicit and explicit systems at least interact, whereas our negligible correlations provide no evidence for this possibility. Normally, some degree of explicit-implicit correlation, corroborating a two-factor account, is observed (Nosek & Smyth, 2007). However, it is unclear whether known moderators of explicit-implicit correlations (Hofmann, Gschwendner, Nosek, & Schmitt, 2005; Nosek, 2007) can explain the stark independence of ISE and ESE we observed. One would expect attitudes towards self to be particularly strong, rooted in personal experience, and free of self-presentational concerns (at least under conditions of anonymity): but such factors that should *augment* the ISE-ESE correlation, not diminish it. Consistent with a two-factor account, however, ESE correlates with ISE under conditions that make self-report more automatic (Koole et al., 2001).

Second, we found, in Studies 1 and 2, that nearly all correlations between indices of ISE—even involving several newer, more specific, and more reliable measures—fell well short of significance. These results echoed previous research casting doubt on the convergent validity of measures of ISE (Bosson et al., 2000). The only exception was the marginal correlation obtained between two measures of ISE that were structurally similar and conceptually correspondent (SC-IAT and ID-EAST). Taking our cue from this suggestive finding, we took great pains in Study 3 to *simultaneously* minimize confounding sources of variance (i.e., conceptual mismatch between indices, individual

differences in reaction time, random error of measurement). When we did so, some evidence of convergent validity finally *did* emerge. Nonetheless, the level of convergence remained curiously low, and the question is why.

We suspect these answer may lie, not merely in the construct of ISE itself, but in the differential structure that underlies even apparently similar indirect measures (De Houwer & Moors, 2007; Gregg, 2003). For example, *salience asymmetry* is known to drive IAT effects above and beyond automatic associations (Rothermund & Wentura, 2004). Yet this mechanism may affect the more specific indirect measures of self-esteem (e.g., SC-IAT and GNAT) less. To shed more light onto the question whether ISE itself is a heterogeneous construct, or whether the measures used to tap it constitute a heterogeneous set, future studies will first need to properly characterize the mechanisms that underlie measures of ISE (De Houwer & Moors, 2007).

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Footnotes

[1] Although the bias extends to all letters in one's name, it is most pronounced for one's initials (see Koole & Pelham, 2003), a pattern measures of ISE tend to exploit.

[2] Both methodologies are conceptually identical, differing only in minor procedural details. We refer only to SC-IAT in the remainder of this manuscript.

[3] We reanalyzed in greater detail a subset of the data reported by Schröder-Abé et al. (2007).

[4] As Schmukle and Egloff (2006) note, this alternating method of deriving split-halves is liable to estimate internal consistency better than one in which the data is simply split into earlier and later trials, because temporal order effects are avoided. A further advantage of using split-half correlations is that they can be computed across every index of ISE and ESE, thereby increasing comparability.

[5] The convention so far has been to classify target stimuli in the ID-EAST on the basis of their being shown in uppercase or lowercase (De Houwer & De Bruycker, 2007). We also adopted this convention.

[6] In addition, one *Self* stimulus used in the ID-EAST was idiosyncratic: each participant's first name.

[7] In addition, we analyzed temporal stability for a subset of the sample (N=39) and the measures: the IAT (r_{tt} = .60) and the D-IPT (r_{tt} = .68) but not the SC-IAT (r_{tt} = .44) showed satisfactory levels of temporal stability over six months.

[8] We reanalyzed in greater detail a subset of the data reported by Gregg and Sedikides (2007).

Table 1

Study 1 and 2: Descriptive Statistics, Internal Consistency, Directional Significance, and Effect Size of Explicit and Implicit Self-Esteem Indices

Self-Esteem Index	Means (SD)	Split-Half Reliability	One-Sample *t*	Cohen's *d*
		Study 1		
Explicit				
MSES (T1)	4.69 (.90)	.94	13.38	1.33
Implicit				
IPT_1	.87 (.66)	.51	13.37	1.33
IPT_2	.88 (.72)	.50	12.29	1.22
IAT_1	.62 (.33)	.85	19.18	1.91
IAT_2	.58 (.32)	.83	18.21	1.81
$EAST_1$	.34 (.55)	.16	6.22	.62
$EAST_2$	.45 (.61)	.24	7.39	.74
		Study 2		
Explicit				
MSES	4.75 (.87)	.93	11.15	1.45
Implicit				
D-IPT	.72 (.64)	.69	8.41	1.09
IAT	.64 (.30)	.80	16.67	2.17
SC-IAT	.46 (.29)	.88	12.42	1.62
ID-EAST	.67 (.76)	.64	6.19	.81

Note. $N_{\text{Study 1}} = 102$, $N_{\text{Study 2}} = 60$. MSES = Multidimensional Self-Esteem Scale; (D-) IPT = (Duplicate) Initials Preference Task; (SC-) IAT = (Single Category) Implicit Association Test; (ID-) EAST = (Identification) Extrinsic Affective Simon Task.

SD = standard deviation; Subscripts (1, 2) indicate measurement occasion (one week apart).

One-sample *t*-tests to compare the mean of each index with the theoretical midpoint of its scale. All *t*-values reported are significant at $p < .0001$.

Table 2

Study 1 and 2: Correlations between Indices of Explicit and Implicit Self-Esteem

	Study 1				
	Self-Esteem Index	1	2	3	4
	Explicit				
1	MSES	-	.03	.14	.28**
	Implicit				
2	IPT	-.07	-	-.07	.07
3	IAT	-.06	.06	-	-.08
4	EAST	.09	.07	-.09	-

	Study 2					
	Self-Esteem Index	1	2	3	4	5
	Explicit					
1	MSES	-				
	Implicit					
2	D-IPT	.11	-			
3	IAT	-.04	.07	-		
4	SC-IAT	-.05	-.07	.09	-	
5	ID-EAST	-.04	-.06	-.03	.25†	-

Note. $N_{\text{Study 1}} = 102$, $N_{\text{Study 2}} = 60$. MSES = Multidimensional Self-Esteem Scale. (D-) IPT = (Duplicate) Initials Preference Task; (SC-) IAT = (Single Category) Implicit Association Test; (ID-) EAST = (Identification) Extrinsic Affective Simon Task.

In Study 1, Time 1 correlations appear below the diagonal, Time 2 correlations above the diagonal (with the MSES administered only once).

† $p < .10$, ** $p < .01$.

Table 3

Study 3: Intercorrelations between Indices of Implicit Self-Esteem (zero-order coefficients and coefficients estimated in a structural model)

GNAT Index	IAT original algorithm	IAT new algorithm	IAT new algorithm (SEM)
Differential Indices			
Self P>N	.14*	.14*	.21
NonSelf N>P	.11	.15*	.21
Positive S>NS	.11	.13	.25*
Negative NS>S	.15*	.17*	.24
Comparative Index			
Overall	.15*	.18**	.27*

Note. N = 195. GNAT = Go/No-Go Association Task; IAT = Implicit Association Test; Self P>N = Self-Positive block minus Self-Negative block; NonSelf N>P = NonSelf-Negative block minus NonSelf-Positive block; Positive S>NS = Self-Positive block minus NonSelf-Positive block; Negative NS>S = NonSelf-Negative block minus Self-Negative block.

* $p < .05$, ** $p < .01$.

Appendix

Studies 1, 2, and 3: Structural and Categorical Features of All Indirect Measures of Self-Esteem

Block	*Trial N*	*Task*	*Press Left Key*	*Press Right Key*
Extrinsic Affective Simon Task (Study 1)				
1	20	P: Attribute's semantic discrimination	Unpleasant	Pleasant
2	20	P: Target's color discrimination	Green[a]	Blue[a]
3-6	30	T: Combined task	Unpleasant + Green[a]	Pleasant + Blue[a]
Single Target Implicit Association Test (Study 2)				
1	40	P: Attribute discrimination	Pleasant	Unpleasant
2-3	40+80	T: Initial combined task	Pleasant + Me	Unpleasant
4-5	40+80	T: Reversed combined task	Pleasant	Unpleasant + Me
Identification Extrinsic Affective Simon Task (Study 2)				
1	30	P: Attribute discrimination	Unpleasant	Pleasant
2	30	P: Target's letter case discrimination	Lower case[a]	Upper case[a]
3-5	50 each	T: Combined task	Unpleasant + lower case[a]	Pleasant + upper case[a]
Implicit Association Test (Study 1 & 2)				
1	24	P: Attribute discrimination	Pleasant	Unpleasant
2	24	P: Target discrimination	Me	Not-Me
3	96	T: Initial combined task	Pleasant + Me	Unpleasant + Not-Me
4	24	P: Reversed target discrimination	Not me	Me
5	96	T: Reversed combined task	Pleasant + Not-Me	Unpleasant + Me
Implicit Association Test (Study 3)				
1	48	T: Initial combined task	Nice + Me	Nasty + Not-Me
2	48	T: Reversed combined task	Nice + Not-Me	Nasty + Me
Go/No-Go Association Task (Study 3)				
			Press Space Bar	*Don't Press Space Bar*
1	16+48	P+T: Target / Non-target discrimination	Nice + Me	Nasty + Not-Me
2	16+48	P+T: Target / Non-target discrimination	Nasty + Not-Me	Nice + Me
3	16+48	P+T: Target / Non-target discrimination	Nice + Not-Me	Nasty + Me
4	16+48	P+T: Target / Non-target discrimination	Nasty + Me	Nice + Not-Me
Sample stimuli (Study 1 & 2): Pleasant (*smile, joy*); Unpleasant (*pain, war*); Me (*self, my*); Not-Me (*other, yours*)				
Sample stimuli (Study 3): Nice (*excellent, love*); Nasty (*bomb, hatred*); Me (*myself, my*); Not-Me (*they, them*)				

Note. P = practice blocks; T = test blocks.

[a] Stimuli of the target category (*Self* and *Non-Self*) are presented in the defined color or letter case.

A complete list of the stimuli can be obtained from the authors.

Self-Esteem Discrepancies and Defensive Reactions to Social Feedback

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Abstract

Recent research has provided increasing evidence that discrepancies between implicit and explicit self-esteem (SE) are related to defensiveness. However, only one pattern, called fragile SE (a combination of high explicit and low implicit SE), has been the focus of research so far. Relatively little attention has been paid to the second possible SE discrepancy (low explicit/high implicit). We propose that both types of discrepancies are maladaptive, because they indicate a lack of integration in self-representation. We conducted two studies on the correlates of discrepant SE in the sphere of defensiveness. We hypothesized that persons with discrepant SE exhibit more defensive behavior than individuals with congruent SE. In two student samples explicit SE was measured by means of the Multidimensional Self-Esteem Scale. Implicit SE was measured with the Name Letter Technique (Study 1) and an Implicit Association Test (Study 2). In Study 1 (N = 102) we examined effects of implicit and explicit SE on defensive reactions to ambiguous statements. For this purpose, we adapted the Ambiguous Statements Task (AST, Tafarodi, 1998), a procedure that measures participants' tendency to interpret ambiguous expressions in a positive vs. negative manner. We found that the combination of low explicit SE and high implicit SE was associated with a more positive interpretation of the ambiguous statements. Study 2 (N = 87) investigated the effects of discrepant SE on reactions to SE threat in an experimental setting. The time participants spent reading positive or negative social feedback was used as an unobtrusive measure of defensiveness. We found that people with discrepant SE went through the negative feedback faster than people with congruent SE. In sum, the studies provide converging evidence that both kinds of discrepancies between implicit and explicit SE are related to defensive behavior.

> Nothing is easier than self-deceit. For what each man wishes, that he also believes to be true.
>
> (Demosthenes, trans. 1930, Olynthiac III, para. 19)

The Greek orator Demosthenes had already addressed the phenomenon of self-deception in the fourth century B.C. Psychological research has examined defensive behavior starting with Freud (1894). Since then, there has been a growing body of research dealing with this issue (see Baumeister, Dale, & Sommer, 1998, for a review). Modern personality and social psychology has mainly focused on defensive behavior aimed at protecting self-esteem (SE). The present research studies defensive reactions as a function of discrepancies between implicit and explicit SE.

Discrepancies between Implicit and Explicit SE

Self-esteem, the "positivity of a person's evaluation of self" (Baumeister, 1998), is related to various positive outcomes, such as life satisfaction (Diener, 1984) and emotional stability (Robins, Hendin, & Trzesniewski, 2001). Highly positive self-views, however, are also related to aggressive and defensive behavior (Baumeister, Smart, & Boden, 1996; Blaine & Crocker, 1993; Bushman & Baumeister, 1998). In order to resolve these apparently contradictory findings, several attempts have been made to distinguish secure and fragile forms of high SE (Kernis, 2003). One way to do so is the examination of discrepancies between explicit and implicit SE (Bosson, Brown, Zeigler-Hill, & Swann, 2003; Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003). Implicit SE is defined as an individual's overlearned, automatic and nonconscious self-evaluation (Greenwald & Banaji, 1995). Several methods of measuring implicit SE have been proposed, but only the Name Letter Preference Task (Nuttin, 1985) and the Implicit Association Test (IAT; Greenwald & Farnham, 2000) have demonstrated satisfactory reliability and validity (Bosson, Swann, & Pennebaker, 2000). Implicit SE refers to the experiential mode, while explicit SE refers to the cognitive mode as distinguished by dual-process models of information processing (e.g., Epstein, 1994; Wilson, Lindsey, & Schooler, 2000). Accordingly, explicit SE is attained through conscious and rational processing of self-relevant information, whereas implicit SE is the product of automatic, intuitive processing of affective experiences (Epstein & Morling, 1995) and is at least partly influenced by social interactions in early life (DeHart, Pelham, & Tennen, 2006). If people receive diverging information through these different pathways, discrepancies between implicit and explicit SE might develop.

There are two possible variants of discrepant SE: (a) the combination of high explicit SE and low implicit SE, and (b) the combination of low explicit SE and high implicit SE. So far, most research has concentrated on the former, referred to as "defensive high SE" (Jordan et al., 2003), or "fragile high self SE" (Bosson et al., 2003). Recent studies have found self-enhancement (e.g., unrealistic optimism, and smaller differences between actual and ideal self; Bosson et al., 2003), defensiveness (Jordan et al., 2003; McGregor & Marigold, 2003; McGregor, Nail, Marigold, & Kang, 2005), and prejudice (Jordan, Spencer, & Zanna, 2005) to be related to this discrepancy. This dovetails with clinical accounts on narcissism (e.g., Horney, 1937; Kernberg, 1975), which describe individuals with overtly positive self-views who unconsciously evaluate themselves negatively. When their fragile SE is threatened they engage in defensive behaviors to protect it.

Relatively little attention has been paid to the second possible SE discrepancy: the combination of low explicit and high implicit SE. Although not focusing on this group, Bosson et al. (2003) found higher self-enhancement and Jordan et al. (2003) found higher defensiveness among people with low explicit and high implicit SE compared with people low in both types of SE. It has been argued that implicit SE buffers against the negative effects of low explicit SE (Bosson et al., 2003) or motivates tendencies to restore historically positive self-views (Jordan et al., 2003). So far, these interpretations are inconclusive, and it remains unclear whether this discrepancy is adaptive or not.

In contrast to the buffer hypothesis presented above, one could reason that discrepancies of any kind are maladaptive because they indicate deficient integration of self-representation. This interpretation parallels findings on ambivalent attitudes, i.e. attitudes that simultaneously comprise positive and negative dimensions (Thompson & Zanna, 1995). Such conflicting attitudes often result in internal tensions and negative emotions (Hass, Katz, Rizzo, Bailey, & Moore, 1992). Moreover, clinical theorists have identified subtypes of narcissism characterized by overtly negative self-views that conceal less conscious feelings of entitlement and superiority. Similarly, Dickinson and Pincus (2003) described individuals with "vulnerable narcissism" as overtly modest, but having underlying grandiose expectations for themselves. Some theorists (Millon & Davis, 1996; Volkan & Ast, 1994) state that this form of discrepancy might emerge from originally high SE which has been lessened later in life, because the person was unable to live up to overly high expectations. Accordingly, we call this kind of discrepancy "damaged SE."

Forms of Defensiveness

Defensive behavior can take many forms (Baumeister et al., 1998). For example, recent studies investigating SE discrepancies have operationalized defensiveness as conviction and perceived social consensus about social issues, in-group favoritism, and dissonance-reduction. The present research conceptualizes defensiveness as biased processing of social feedback information.

Baumeister and Newmann (1994) identified two pathways through which cognitive processes can be altered: (a) controlling the interpretation of the information, and (b) regulating the collection and encoding of information. Accordingly, people can (a) try to interpret negative feedback in a more favorable way; for example, by discrediting sources of criticism (Pyszczynski, Greenberg, & Holt, 1985). Individuals can also (b) try to prevent the information from entering mind altogether; for example, by processing the information in a rushed and superficial way (Baumeister & Cairns, 1992; Bonanno, Davis, Singer, & Schwartz, 1991).

The present research investigated how discrepancies between implicit and explicit SE are connected with defensive reactions to social feedback. We hypothesized that both kinds of SE discrepancies would predict defensiveness.

Study 1

We first examined whether SE discrepancies are related to defensiveness as a reaction to relatively neutral social feedback. Defensiveness was operationalized as the positively biased interpretation of ambiguous scenarios. We predicted that individuals with discrepant SE would interpret this ambiguous social feedback in a more favorable way than individuals with congruent SE.

Method

Participants and Procedure

A total of 102 students (80 female) participated in exchange for partial course credit. Mean age of participants was 22.69 years (*SD* = 3.74). The study was conducted in the laboratory in groups of up to four individuals. Participants first completed measures of implicit and explicit SE. Subsequently, they completed several personality scales irrelevant to the present study as well as the Ambiguous Statements Task (AST). Finally, participants were debriefed and thanked.

Measures

Initials Preference Task (IPT). The IPT as an index of implicit SE is based on the assumption that peoples' initials are closely connected to the self and that peoples' preferences for their initials relative to other letters express their implicit attitudes towards themselves (name letter effect, cf. Nuttin, 1985). Participants evaluated each letter of the alphabet on scales ranging from 1 (I dislike this letter very much) to 7 (I like this letter very much). The letters were presented one by one in a random order on a computer screen. In order to calculate initials preference scores, each participant's average liking for all letters that were not his/her initials were subtracted from the liking for his or her initials. This idiographic score (Bosson et al., 2000; 2003) controls for individual differences in rating tendencies and liking for objects (e.g., letters) in general. As the liking for non-initial letters was weakly correlated to the extent to which ambiguous statements were interpreted positively (r = .18), this score seems most appropriate.

Multidimensional Self-Esteem Scale (MSES). Explicit SE was measured using the total score of the MSES (Schütz & Sellin, 2006), the German adaptation of the scale by Fleming & Courtney (1984). Responses were made on seven-point scales with end points labeled *not at all* (1) and *very much* (7) or *never* (1) and *always* (7), respectively.

Ambiguous Statements Task (AST). Participants' tendency to interpret ambiguous statements in a positive way was measured by means of the AST by Tafarodi (1998). The instruction asked participants to vividly imagine a scenario in which an acquaintance directed an ambiguous phrase at them (e.g., "You must be kidding."). After imagining each of the 13 scenarios, participants indicated whether the expression reflected a positive or negative feeling toward them and then rated the intensity of the feeling on scales from *very slightly intense* (1) to *extremely intense* (7). Intensity ratings of each statement were assigned a negative sign if the statement was interpreted in a negative manner. Average intensity ratings across all 13 statements were computed. Higher scores reflected a tendency to interpret ambiguous statements in a positive manner.

Results and Discussion

Descriptive statistics and internal consistencies (Cronbach's Alpha) of all measures are displayed in Table 1. The mean of -.28 for the Ambiguous Statements Task indicates that, on average, participants perceived the ambiguous scenarios as slightly negative. The correlation of IPT scores and scores on the MSES was -.12 (*ns),* indicating that implicit and explicit SE were only weakly related to each other.

To determine whether implicit and explicit SE were related to defensiveness, we conducted a multiple regression analysis with explicit SE, implicit SE, and the interaction between them as predictors. Scores on the MSES and the IPT were centered, and the interaction was represented by the cross-product vector (Aiken & West, 1991). We regressed defensiveness (i.e. people's tendency to interpret ambiguous statements positively) onto these variables.

We found a significant main effect of explicit SE (ß = .20; $t(97) = 2.04$; $p = .04$) and the predicted interaction between implicit and explicit SE ($\beta = -.23$; $t(97) = -2.39$; $p = .02$). The main effect of implicit SE was not significant (ß = .08; $t(97) = .79$; $p = .43$). Following Cohen and Cohen (1983), we tested simple slopes at values one standard deviation above and below the mean of explicit SE to further explore these interactions. As Figure 1 shows, among people with high explicit SE, implicit SE did not moderate the tendency to interpret ambiguous statements positively ($\beta = -.16$; $t(97) = -1.25$; $p = .22$). It did, however, among people with low SE, as individuals low in explicit SE and high in implicit SE interpreted ambiguous statements more positively than individuals low in explicit and implicit SE ($\beta = .32$; $t(97) = 2.12$; $p = .04$).

The results thus partially supported our predictions. We found that individuals with damaged SE (low explicit, high implicit) interpreted ambiguous scenarios more positively than individuals with congruent low SE. However, contrary to expectations, individuals with fragile SE (high explicit, low implicit) did not interpret the ambiguous statements significantly more positively than individuals with congruent high SE. One reason for this finding might be that individuals with fragile SE only react defensively when their overtly positive self-views are threatened (e.g. McGregor & Marigold, 2003; McGregor et al., 2005).

Study 2

In Study 2, we sought to extend the findings of Study 1 in several ways. Firstly, we introduced a SE threat by manipulating social feedback (rejection versus acceptance). By doing so, we aimed to test whether defensive behavior occurs in individuals with fragile SE (high explicit, low implicit) under threat only. Secondly, we used a different measure of implicit SE. We administered a SE IAT in order to increase generalizability of the findings to other measures of implicit SE. Thirdly, we operationalized defensiveness in a different way. We measured how fast participants read social feedback and interpreted higher speed of reading as defensiveness. We theorized that this would enable participants to avoid

deeper processing of potentially negative information (cf. Baumeister & Cairns, 1992; Bonanno et al., 1991). We predicted that, especially in the rejection condition, individuals with both forms of discrepant SE (fragile and damaged SE) would react more defensively to social feedback than individuals with congruent SE.

Method

Participants and Procedure

Eighty-seven students (58 female) participated in exchange for partial course credit. Mean age of participants was 22.67 years (*SD* = 4.86).

Participants were run individually in the laboratory. After completing implicit and explicit SE measures, participants were subjected to a procedure for manipulating social rejection versus acceptance (modified from Buckley, Winkel, & Leary, 2004). Participants were told that the study was on new media and getting to know people via the Internet. Participants completed an online questionnaire about themselves. Questions were adapted from the Relation Closeness Induction Task (Sedikides, Campbell, Reeder, & Elliott, 1999). Participants were told that the information about themselves would be sent electronically to another participant in the laboratory room next door, who would then send the participant feedback and evaluate him or her on the basis of the information provided in the questionnaire. The other participant would also indicate how much s/he wanted to work with the participant during the remainder of the study.

Participants were given feedback after three minutes of waiting. In fact, there was no other participant, but the questionnaire and the feedback were programmed in Inquisit 1.33 software. Participants were randomly assigned to one of two experimental groups: One group (39 participants) received positive feedback indicating that the other participant had evaluated them positively (e.g., likable) and wanted to cooperate with them (acceptance condition). The other group (48 participants) received negative feedback indicating that the other participant had formed a negative impression of them (e.g., boring) and did not want to work with them (rejection condition). The feedback consisted of eight ratings on several traits that were rated on 7-point semantic differentials (e.g., from *dull* to *intelligent*) and answers to three questions (e.g., “How much do you want to work with the participant?”) on 10-point scales ranging from 1 *(not at all)* to 10 *(very much).* In the acceptance condition, participants received ratings in the range of 6 or 7 (semantic differentials) and 8 to 10 (rating scales). In the rejection condition, participants received ratings of 1 or 2 (semantic differentials) and 1 to 3 (rating scales). As an unobtrusive

indicator of defensiveness, we summed up the time participants spent on reading the feedback items on their computer screen.

After completing a series of measures irrelevant for the present study, participants completed two manipulation check items worded “How much did the other participant want to work with you?” and “How much did the other participant want to get to know you?” Finally, participants were debriefed and thanked.

Measures

Implicit Association Test (IAT). As a measure of implicit SE participants completed an IAT (Greenwald, McGhee, & Schwartz, 1998). We used the affective generic variant of the SE IAT (Greenwald & Farnham, 2000; Rudolph, Schröder, & Schütz, 2006) with target-concept discrimination between 3 self-relevant and 3 non-self-relevant words, and attribute discrimination between 6 pleasant and 6 unpleasant words. The IAT consisted of five blocks of trials (see Table 2 for a detailed illustration of the SE IAT). Data from the combined blocks (3 and 5) were used to compute IAT scores (*D* measure) following Greenwald, Nosek, and Banaji (2003).

In order to compute internal consistency, the IAT was split into four subtests of equal length. Each subtest contained equal numbers of target and attribute stimuli. To avoid biases caused by order effects, each subtest contained trials of all combined blocks (block 3 and 5). Internal consistency was evaluated by computing Cronbach’s Alpha with the four IAT subtests (see Table 1).

Multidimensional Self-Esteem Scale (MSES). As in Study 1, explicit SE was measured using the MSES (Schütz & Sellin, 2006). For economical reasons, we administered a short version of the scale.

Results and Discussion

Manipulation checks

Participants accurately perceived the degree to which the alleged other participant wanted to work with them, $t(85) = -42.73$, $p < .001$, $d = -7.95$. Participants also correctly identified the degree to which the other participant wanted to get to know them, $t(85) = -40.70$, $p < .001$, $d = -8.64$. Internal consistency of these two measures was .98.

Descriptive statistics

Descriptive statistics and internal consistencies (Cronbach’s Alpha) of all measures are displayed in Table 1. We omitted the first item of the reading speed measure (i.e., the time participants spent on reading the first trait rating on the dimension “insecure vs.

secure"), because of its lengthened latency, heightened standard deviation and low item-total correlation. This produced an increase in internal consistency from .75 to .87. [1] The correlation of IAT scores (*D* measure) and scores on the MSES was .12 (*ns*), indicating that implicit and explicit SE were only weakly related to each other.

Regression analyses

We conducted multiple regression analyses with rejection-acceptance condition, explicit SE, implicit SE, and all interactions entered as predictor variables. Scores on the MSES and the SE IAT (*D* measure) were centered. We then regressed defensiveness (time spent reading the feedback) onto these variables.

There were no significant main effects of condition, MSES, or IAT scores (*p*s > .25) predicting reading speed. However, we found a significant two-way interaction between implicit and explicit SE (*ß* = .33; *t*(77) = 2.27; *p* = .03) and a significant three-way interaction between condition, implicit and explicit SE (*ß* = -.30; *t*(77) = -2.05; *p* = .04). Subsequently, we tested simple slopes at values one standard deviation above and below the mean of explicit SE. We did not find any significant effects in the acceptance condition (*p*s > .19), but we did find marginally significant effects in the rejection condition: Among people high in explicit SE, implicit SE was positively related to the time spent reading the feedback (*ß* = .40; *t*(77) = 1.71; *p* = .09). That is to say, individuals with fragile SE (high explicit, low implicit) showed a tendency to read the negative feedback faster than individuals with congruent high SE. Among people low in explicit SE, implicit SE was negatively related to the time spent reading the feedback (*ß* = -.37; *t* (77) = -1.79; *p* = .08). That is, there was a trend in individuals with damaged SE (low explicit, high implicit) to read the negative feedback faster than individuals with congruent low SE.

For a more thorough analysis, we computed separate sum scores of the trait ratings and questions concerning cooperation in the further course of the study (see Table 1 for descriptives) and conducted regression analyses for those scores separately. There were no significant main effects or interactions with the trait ratings as dependent variable (*p*s > .13). However, when using the questions about further cooperation as dependent variable, we found highly significant effects. There was a significant two-way interaction between implicit and explicit SE (*ß* = .42; *t*(77) = 3.00; *p* < .01) and a significant three-way interaction (Figures 2 and 3) between condition, implicit and explicit SE (*ß* = -.40; *t*(77) = -2.84; *p* < .01). Except for a marginally significant main effect of condition (*ß* = .20; *t*(77) = 1.84; *p* = .07) there were no other significant effects of the remaining predictors (*p*s > .28).

When conducting simple slope tests, we did not find significant effects (*p*s > .15) in the acceptance condition (Figure 2). In the rejection condition (Figure 3), however, the effects were significant. That is, implicit and explicit SE predicted the speed of reading the feedback mainly in the rejection condition. Among people high in explicit SE, implicit SE was positively related to the time spent reading the feedback (*ß* = .58; *t*(77) = 2.58; *p* = .01). Among people low in explicit SE, implicit SE was negatively related to the time spent reading the feedback (*ß* = -.40; *t* (77) = -2.00; *p* = .04).

In conclusion, the results supported our predictions. Individuals with both forms of discrepant SE (high explicit/low implicit, and low explicit/high implicit) spent less time on reading negative social feedback than individuals with congruent SE. Interestingly, these effects were especially strong for feedback that implied rejection by another person, i.e. feedback that indicated the other person was not interested in cooperation. By contrast, no such effects were found with feedback that only implied negative evaluation (without rejection).

General Discussion

Taken together, these studies provide converging evidence of defensive behavior in both possible patterns of discrepant SE (fragile SE, i.e. high explicit/low implicit, and damaged SE, i.e. low explicit/high implicit).

Individuals with fragile SE read negative feedback faster than individuals with congruent high SE, which suggests that they avoided negative social information implying rejection by another person. This finding corresponds to recent studies showing heightened defensiveness in individuals with fragile SE (Bosson et al., 2003; Jordan et al., 2003; Jordan et al., 2005; McGregor & Marigold, 2003; McGregor et al., 2005). In contrast to Bosson et al. (2003) and Jordan et al. (2003) we did not find elevated defensiveness in individuals with fragile SE in neutral situations (Study 1). Our results correspond to the findings of Jordan et al. (2005), McGregor and Marigold (2003), and McGregor et al. (2005), who also found defensiveness in individuals with fragile SE only after threat. The results show that individuals with fragile SE get along pretty well as long as they do not experience setbacks, such as failure or rejection. Only when their SE is threatened, defensive patterns emerge.

Individuals with damaged SE displayed defensive behavior across both measures we used. Compared with individuals holding congruent low SE, they interpreted ambivalent social feedback more positively and read negative social feedback more

quickly. These findings support the notion that both SE discrepancies are maladaptive and dovetail with clinical work on vulnerable narcissism (Dickinson & Pincus, 2003; Volkan & Ast, 1994).

Clinical theorists (e.g., Kernberg, 1975; Millon & Davis, 1996; Volkan & Ast, 1994) have proposed that dysfunctional early interactions lead to discrepancies, but these notions have thus far received only preliminary empirical support (DeHart et al., 2006). Clearly more research on the development of SE discrepancies is warranted. In future research SE discrepancies and defensiveness should also be analyzed in community samples and clinical populations, such as patients with very low (Major Depression) or very high (Narcissistic Personality Disorder) explicit SE.

Defensiveness may be the result of internal tensions and negative emotions that occur when ambivalent attitudes are held (Hass et al., 1992). Whereas individuals with fragile SE showed defensiveness only after SE threat, individuals with damaged SE behaved defensively even in relatively neutral situations. They seem to almost constantly see their SE at stake and may therefore try to defend it. To further explore this hypothesis, outcomes and behaviors other than defensiveness should be observed in individuals with damaged SE. Experiencing feelings of inadequacy and threat over a long period of time may, for example, lead to impaired well-being. Preliminary evidence suggests that individuals with damaged SE show even lower indicators of psychological and physical health than individuals with congruent low SE (Schröder-Abé, Rudolph, & Schütz, in press). Additionally, it may be interesting to investigate long-term consequences of defensive behavior. Individuals who repeatedly avoid negative feedback are prone to miss the chance to learn from mistakes. In the long run, this may cause interpersonal problems. Future research could investigate possible consequences and examine how SE discrepancies are related to contentment with social relationships, and social skills.

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Footnotes

1) We thank an anonymous reviewer for suggesting to analyze the internal consistency of the measure in more detail.

Table 1

Descriptive statistics of all variables

	#	α	*M*	*SD*	Min	Max
Study 1						
Explicit SE	32	.94	4.69	.90	2.41	6.41
Implicit SE (initials preferences)	2	.63	3.47	2.44	-4.74	7.33
Ambiguous Statements Task	13	.71	-.28	1.97	-5.85	5.38
Study 2						
Explicit SE	22	.93	4.70	.91	2.82	6.55
Implicit SE (IAT, *D* measure)	n/a[a]	.80	.73	.33	-.13	1.33
Implicit SE (IAT, ms)	n/a[a]	.80	325.66	207.13	-52.22	837.39
Time Spent Reading Feedback (ms)						
total	10	.87	35103.91	10517.83	12402	63984
Trait ratings	7	.85	20664.87	7081.72	8188	42221
Cooperation questions	3	.64	14439.03	4462.46	3804	29434

Note. [a]: See the description of the IAT in the text for details on how internal consistencies were computed, and see Table 2 for a detailed description of the IAT trials. #: Number of items, α: Internal Consistency (Cronbach's Alpha), IAT: Implicit Association Test.

Table 2

Illustration of the Self-esteem Implicit Association Test (SE IAT)

			Response key assignment		
Block	No. of trials	Task	Left key	Right key	Sample items
1	24	Attribute discrimination	Pleasant	Unpleasant	Happiness, friend, harm, agony
2	24	Target discrimination	Me	Not Me	Me, my, it, that
3	96	Initial combined task	Pleasant or Me	Unpleasant or Not Me	Happiness, friend, harm, agony; me, my, it, that
4	24	Reversed target discrimination	Not Me	Me	It, that, me, my
5	96	Reversed combined task	Pleasant or Not Me	Unpleasant or Me	Happiness, friend, harm, agony; it, that, me, my

Note. The original German stimuli can be obtained from the authors.

Figure captions.

Figure 1. Predicted values for positive interpretation of ambiguous stimuli as a function of explicit SE and implicit SE. SE = self-esteem, SD = standard deviation.

Figure 2. Acceptance Condition: Predicted values for time spent reading feedback about cooperation as a function of implicit SE and explicit SE. SE = self-esteem, SD = standard deviation.

Figure 3. Rejection Condition: Predicted values for time spent reading feedback about cooperation as a function of implicit SE and explicit SE. SE = self-esteem, SD = standard deviation.

Figure 1

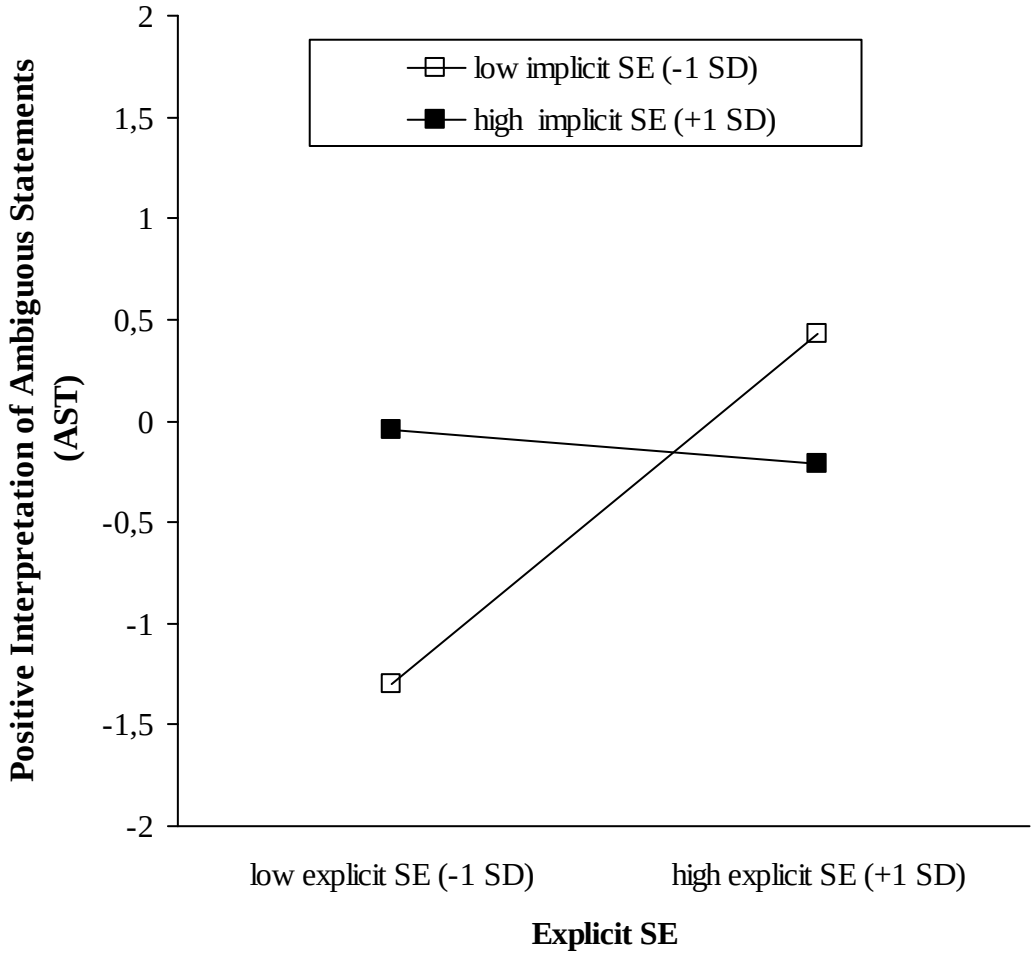

low implicit SE (-1 SD)
high implicit SE (+1 SD)
Positive Interpretation of Ambiguous Statements (AST)
2
1,5
1
0,5
0
-0,5
-1
-1,5
-2
low explicit SE (-1 SD)
high explicit SE (+1 SD)
Explicit SE

Figure 2

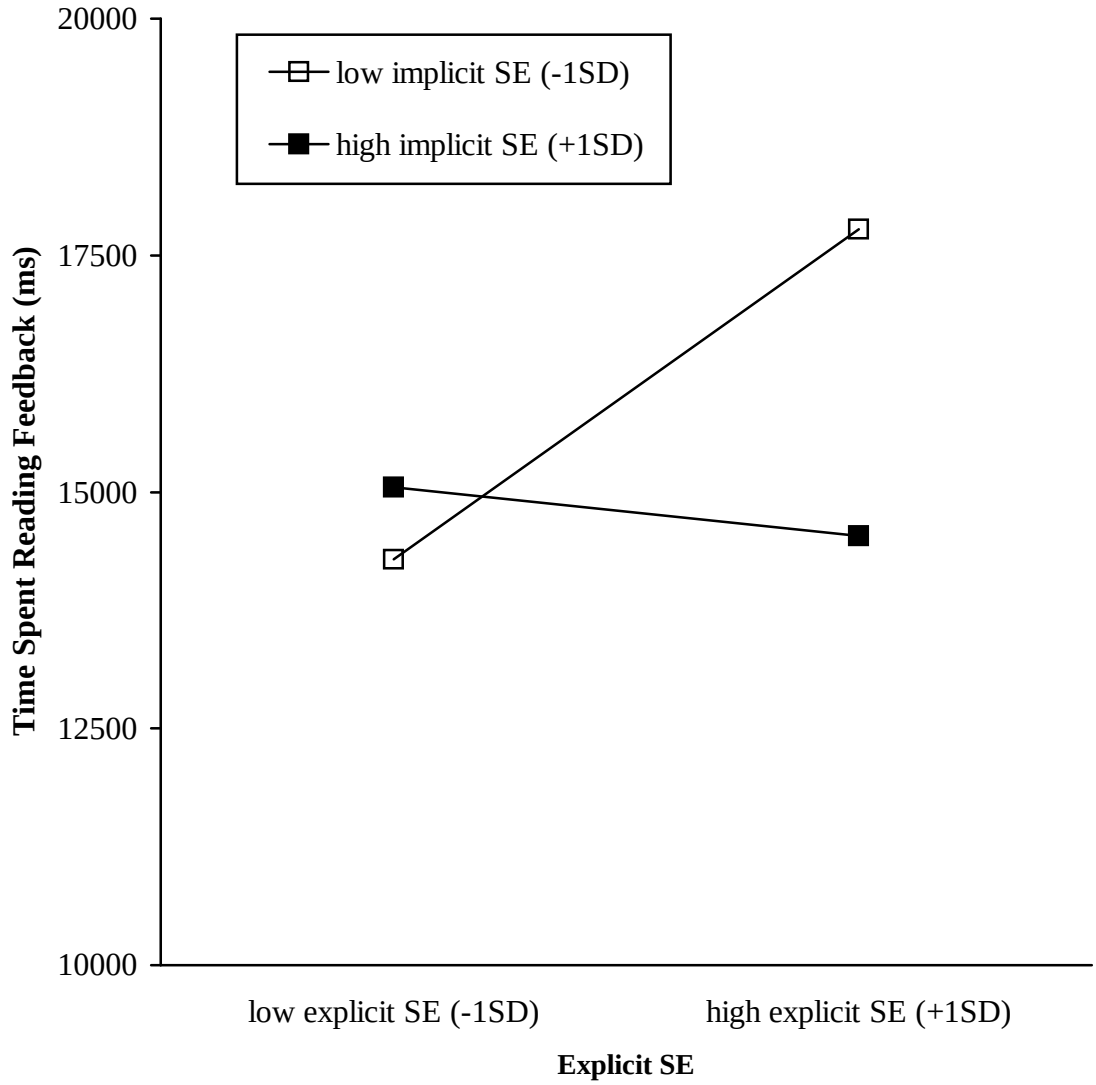
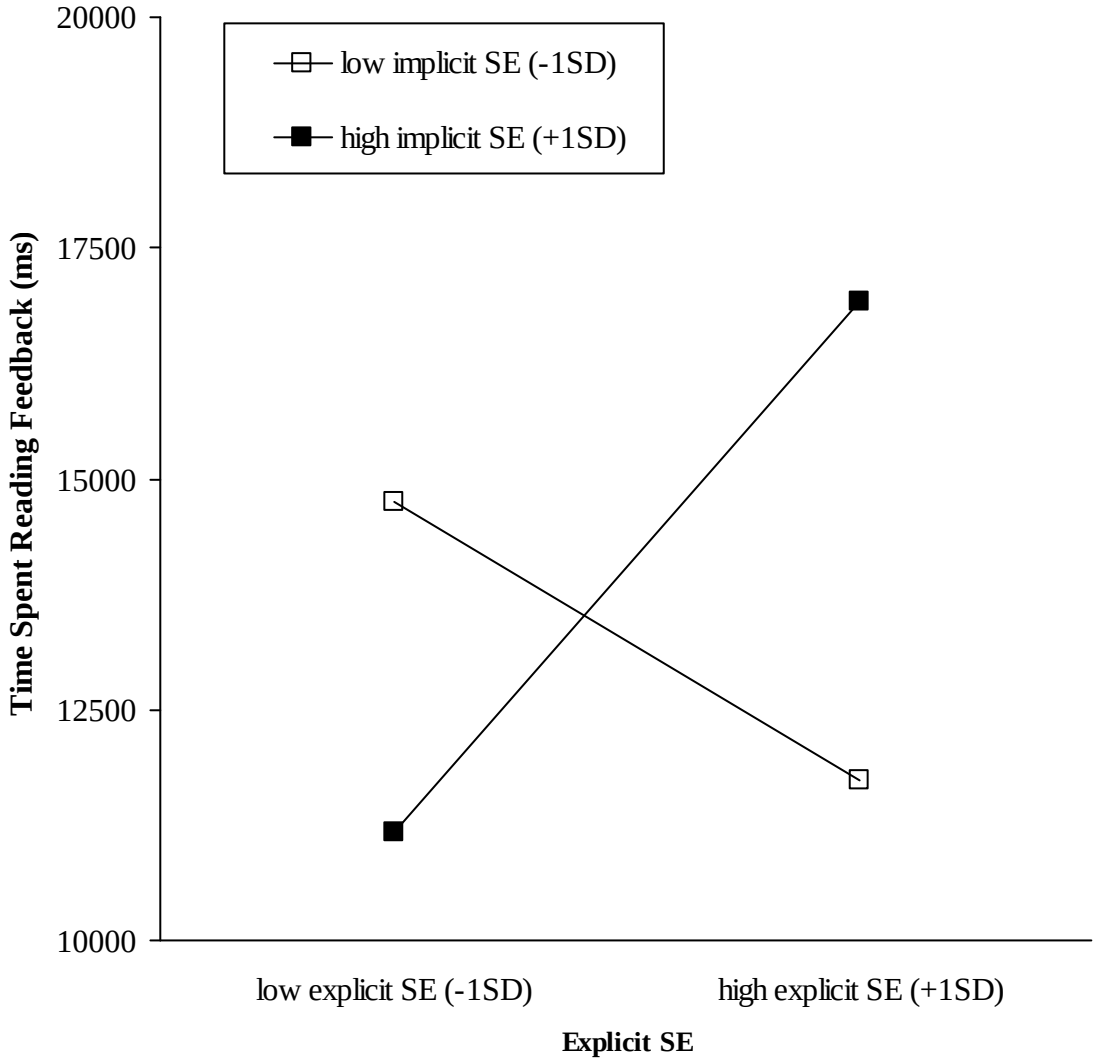

20000
17500
15000
12500
10000
low implicit SE (-1SD)
high implicit SE (+1SD)
Time Spent Reading Feedback (ms)
low explicit SE (-1SD)
high explicit SE (+1SD)
Explicit SE

Figure 3


20000
17500
15000
12500
10000
low implicit SE (-1SD)
high implicit SE (+1SD)
Time Spent Reading Feedback (ms)
low explicit SE (-1SD)
high explicit SE (+1SD)
Explicit SE

High Implicit Self-Esteem is not Necessarily Advantageous: Discrepancies Between Explicit and Implicit Self-Esteem and Their Relationship with Anger Expression and Psychological Health

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Short title: High Implicit Self-Esteem is not Necessarily Advantageous
Key words: implicit self-esteem, explicit self-esteem, discrepancies, fragile self-esteem, defensive self-esteem, anger expression, anger-in, anger suppression, depressive attributional style, psychological health
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Abstract

Two studies investigated how discrepancies between implicit and explicit self-esteem are related to mental and physical health. We found that, compared to congruent self-esteem, discrepant self-esteem was related to more anger suppression, a more depressive attributional style, more nervousness, and more days of impaired health. The result applies not only to fragile (high explicit, low implicit) self-esteem, but also to damaged (low explicit, high implicit) self-esteem. These findings show that high implicit self-esteem is not necessarily advantageous. In individuals with low explicit self-esteem having high implicit self-esteem was related to more health problems than having low implicit self-esteem. Taken together the results suggest that discrepancies between implicit and explicit SE are detrimental to mental and physical health.

The psychological literature has clearly documented that explicit self-esteem (SE) is positively related to indicators of subjective well-being and psychological health (see Baumeister, Campbell, Krueger, & Vohs, 2003, for a review). High SE is associated with various positive outcomes, such as optimism (Taylor & Brown, 1988), life satisfaction (e.g., Diener & Diener, 1995), emotional stability (Judge, Erez, Bono, & Thoresen, 2002; Robins, Hendin, & Trzesniewski, 2001), and low levels of depression (e.g., Tennen & Herzberger, 1987; Watson, Suls, & Haig, 2002). Furthermore, individuals with high SE show less stress and negative affect after negative events (Brown & Dutton, 1995; DiPaula & Campbell, 2002).

However, high SE is also connected to less positive outcomes. For example, highly positive self-views are also related to aggressive and defensive behavior (Baumeister, Smart, & Boden, 1996; Blaine & Crocker, 1993; Bushman & Baumeister, 1998). Furthermore, it has been shown that additional aspects of SE, for example, stability of SE, play an important role with respect to mental health (e.g., Roberts & Monroe, 1992, 1994). Therefore, several attempts have been made to distinguish secure from fragile forms of high SE and to conceptualize "optimal self-esteem" (see Kernis, 2003, for a review). One approach is to take into account implicit SE and examine discrepancies between explicit and implicit SE (Bosson, Brown, Zeigler-Hill, & Swann, 2003; Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003). Implicit SE is defined as an individual's overlearned, automatic, and nonconscious self-evaluation (Greenwald & Banaji, 1995). Several methods of measuring implicit SE have been proposed, but only the Name Letter Preference Task (Nuttin, 1985) and the Implicit Association Test (IAT; Greenwald & Farnham, 2000) have demonstrated satisfactory reliability and validity (Bosson, Swann, & Pennebaker, 2000; Rudolph, Schröder-Abé, & Schütz, 2007). While explicit SE refers to the cognitive mode, implicit SE refers to the experiential mode, as conceptualized by dual-process models of information processing (e.g., Epstein, 1994; Wilson, Lindsey, & Schooler, 2000). Implicit SE is the product of automatic, intuitive processing of affective experiences (Epstein & Morling, 1995) and is at least partly influenced by social interactions in early life (DeHart, Pelham, & Tennen, 2006), whereas explicit SE is attained through conscious and rational processing of self-relevant information. As implicit and explicit attitudes are influenced by different processes, asymmetric attitude changes may occur, which in turn can lead to discrepancies between implicit and explicit attitudes (Gawronski & Bodenhausen, 2006), and thus, SE.

Discrepancies between implicit and explicit SE

Self-esteem discrepancies can take two possible forms: (a) the combination of high explicit SE and low implicit SE, and (b) the combination of low explicit SE and high implicit SE. So far, most research has concentrated on the former alternative, referred to as "defensive high SE" (Jordan et al., 2003), or "fragile high self SE" (Bosson et al., 2003). This rather one-sided focus emerged because at first implicit SE was used to explain contradictory results concerning high SE. Furthermore, measuring implicit SE in addition to explicit SE made it possible to empirically test classic clinical theories on narcissism (e.g., Horney, 1937; Kernberg, 1975). These accounts of narcissism describe individuals with overtly positive self-views who unconsciously evaluate themselves negatively and engage in defensive behavior when their fragile SE is threatened. In accordance with these theories, it has been found that this discrepancy (high explicit and low implicit SE) is connected with self-enhancement (Bosson et al., 2003), defensiveness (Jordan et al., 2003; McGregor & Marigold, 2003; McGregor, Nail, Marigold, & Kang, 2005; Schröder-Abé, Rudolph, Wiesner, & Schütz, in press), and prejudice (Jordan, Spencer, & Zanna, 2005).

Compared with the research reported above, relatively little attention has been paid to the second possible SE discrepancy, the combination of low explicit and high implicit SE. Bosson et al. (2003) found higher self-enhancement, Jordan et al. (2003) found higher defensiveness among people with low explicit and high implicit SE as compared with people low in both types of SE. But those studies neither expected such findings nor did they focus on that specific combination and provided post hoc interpretations that were rather inconclusive. They argued that implicit SE motivates tendencies to restore historically positive self-views (Jordan et al., 2003) or buffers against the negative effects of low explicit SE (Bosson et al., 2003).

In contrast to these accounts that view high implicit SE as a resource, we reason that high implicit SE is not necessarily advantageous. We build on the fact that research expecting direct positive effects of implicit SE that are independent of explicit SE provided only limited support (Schimmack & Diener, 2003; Spalding & Hardin, 1999), whereas research measuring discrepancies between implicit and explicit SE produced a number of promising results (e.g., Bosson et al., 2003; Jordan et al., 2003). We therefore reason that SE discrepancies in either direction are maladaptive because they represent deficient integration of self-representation. Consequently, high implicit SE (when in combination with low explicit SE) can be connected with negative outcomes. Accordingly, at least in

some domains, individuals with high implicit but low explicit SE are worse off than individuals with low explicit and low implicit SE. This argumentation is built on three lines of research: first, clinical accounts on subtypes of narcissism, second, research on ambivalent attitudes, and third, research on modesty.

First, there are apparently forms of narcissism that are not characterized by extreme self-enhancement. Clinical theorists have identified subtypes of narcissism characterized by overtly negative self-views that conceal less conscious feelings of entitlement and superiority (e.g., Wink, 1991). Similarly, Dickinson and Pincus (2003) described individuals with "vulnerable narcissism" as overtly modest, but having underlying grandiose expectations for themselves. Some theorists (Millon & Davis, 1996; Volkan & Ast, 1994) state that this form of discrepancy might emerge from originally high SE which has been tarnished later in life, because the person concerned was unable to live up to overly high expectations. Building on that argument, we have named this kind of discrepancy "damaged SE" (Schröder-Abé et al., in press).

Second, there is a large body of research showing that individuals can simultaneously hold ambivalent or incompatible explicit attitudes, feelings, beliefs, and behavioral tendencies (e.g., Bem & Allen, 1974; Brehm & Cohen, 1962; Cacioppo, Gardner, & Berntson, 1997; Higgins, 1987; Priester & Petty, 1996) and that such internal discrepancies are often experienced as unpleasant and may result in adverse outcomes, such as internal tensions and negative emotions (e.g., Campbell, 1990; Carver & Scheier, 1990; Hass, Katz, Rizzo, Bailey, & Moore, 1992; Higgins, 1987). Similar effects have been found with respect to implicit-explicit discrepancies just recently. Discrepancies between implicit and explicit self-concept and SE can lead to unpleasant or dysfunctional outcomes, such as psychological conflict (Petty, Tormala, Briñol, & Jarvis, 2006; Priester & Petty, 2001), and implicit self-doubt (Briñol, Petty, & Wheeler, 2003, as cited in Briñol, Petty, & Wheeler, 2006). Furthermore, it has been shown that individuals with implicit-explicit discrepancies are motivated to process information that is related to the discrepancy more deeply than other information. This sort of behavior can be interpreted as an attempt to resolve the discrepancy and reduce implicit self-doubt (Briñol et al., 2006). It is important to note that the motivation to resolve implicit-explicit discrepancies or at least reduce their unpleasant effects depends on the magnitude of the discrepancies, but not on their direction (Briñol et al., 2006). This line of research illustrates that discrepancies

between implicit and explicit SE or self-concept in either direction are perceived as unpleasant and therefore may be connected to dysfunctional outcomes.

Third, one could argue that holding high implicit but displaying low explicit SE represents a form of modesty. Modesty is the public under-representation of one's favorable traits and abilities (Cialdini, Wosinska, Dabul, Whetstone-Dion, & Heszen, 1998). In the case of damaged SE, this would mean that there are individuals who internally hold positive self-views (as represented by their high implicit SE), but who do not present themselves as favorably when it comes to their explicit SE. As one might intuitively assume, modesty is related to positive outcomes, especially in the interpersonal domain (e.g., Keltner, Young, & Buswell, 1997; Tice, Butler, Muraven, & Stillwell, 1995) and therefore conceptualized as a character strength (Peterson & Seligman, 2004). How would modesty then account for negative outcomes in individuals with high implicit and low explicit SE? There is growing evidence showing that modesty is rather a complex construct. For example, contrary to expectations, modesty is at best weakly related to life satisfaction and there are moderating effects of situational factors (Park, Peterson, & Seligman, 2004a, b). What is more, modesty is related to negative outcomes that may play a role in discrepant SE, e.g., difficulties in identifying feelings and expressing them to others (Luminet, Bagby, Wagner, Taylor, & Parker, 1999), or experiencing feelings of inadequacy with respect to managing one's own internal emotional states (Mahalik et al., 2005).

Taken together, those three lines of research suggest that discrepancies between implicit and explicit SE in *both* directions are maladaptive. In accordance with that line of thought, we have already demonstrated defensive behavior in individuals with both forms of SE discrepancies in our previous research (Schröder-Abé et al., in press). The goal of the present study was to go beyond defensiveness, for that variable has been investigated in most of the previous studies on SE discrepancies. We aimed at investigating how SE discrepancies are related to various indicators of psychological and physical health including habitual motivational and emotional processes (attributional style and anger expression) that are closely related to health. We hypothesized that both variants of discrepant SE are connected with lower levels of psychological and physical health.

Study 1

In our first study we investigated how SE discrepancies are related to anger and anger expression. Anger is a relatively intense emotional experience that mainly occurs in

interpersonal situations and often involves the assignment of blame (Averill, 1982). As anger is a multifaceted construct, Spielberger (1988) differentiated between dispositional anger, state anger, and anger expression. Dispositional or trait anger is the tendency to evaluate situations as anger-evoking and to respond with increased state anger. State anger refers to the situation-specific anger reaction. Spielberger (1988) conceptualized three forms of anger expression or dealing with anger: anger-out (i.e. the open expression of anger toward other persons or objects in the environment); anger-in (or anger suppression, i.e. feeling anger, but holding it in and hiding it from the environment); and anger control, (i.e. trying to control and reduce angry feelings). [1]

We focused on anger because it is often activated by threats to SE that are interpersonal in nature, e.g., insults or criticism (Averill, 1982; Feshbach, 1970; Novaco, 1975; Weber, 1994) and because our previous research found that individuals with discrepant SE are particularly vulnerable to negative social feedback (Schröder-Abé et al., in press). Furthermore, anger and anger expression are associated with mental and physical health (these relationships will be reviewed in a later section).

There have been contradictory empirical findings and theoretical accounts as to whether anger is related to low (Averill, 1982) or high (Baumeister et al., 1996; Bushman & Baumeister, 1998) SE (see Papps & O'Carroll, 1998, for a review). Meanwhile, there is increasing evidence that variants of SE need to be distinguished that are differently related to anger (Vollmann, Weber, & Wiedig, 2004). Kernis, Granneman, and Barclay (1989) found that individuals with high, but unstable SE are most prone to experience anger. Also, levels of narcissism need to be taken into account, as Papps and O'Carroll (1998) found higher levels of anger in individuals with both high SE and high narcissism compared to individuals with high SE and low narcissism. Theoretical accounts (e.g., Kernis, 2003) as well as empirical studies (e.g., Jordan et al., 2003) suggest that there are similarities between high unstable SE, narcissism, and fragile SE. Therefore we hypothesized that individuals with fragile SE (i.e. high explicit but low implicit SE) would show highest trait anger, that is, the strongest tendencies to evaluate situations as anger-evoking. Building on research suggesting that SE discrepancies are generally maladaptive, we also expected individuals with damaged SE to exhibit higher levels of trait anger than individuals with congruent SE.

With respect to anger expression we hypothesized that anger suppression (i.e. anger-in) would be especially pronounced in individuals with both forms of discrepant SE.

We derived this hypothesis from clinical theorizing as well as from recent empirical findings suggesting that emotion suppression leads to inauthenticity and feelings of incongruence between inner experience and outer expression (Gross & John, 2003; Rogers, 1951). As incongruence and inauthenticity are experienced by individuals with discrepant SE in particular (Briñol et al., 2006), one could hypothesize that suppression of emotions such as anger is especially pronounced among those individuals. We had no specific hypotheses concerning the remaining forms of anger expression (anger-out and anger control), but we analyzed them in order to explore possible relationships with SE discrepancies.

Method

Participants and Procedure

Seventy-nine students (55 female) participated in the study. The participants who studied Psychology (25.3 %) took part in exchange for partial course credit. Other students (74.7 %) were paid 5 € for participation. Mean age of participants was 23.73 years (*SD* = 4.24). The participants were run individually in the laboratory. They first completed measures of implicit and explicit SE. Subsequently, they completed the State-Trait-Anger Expression Inventory (STAXI; Schwenkmezger, Hodapp, & Spielberger, 1992). After finishing several personality scales and procedures irrelevant to the present study participants were debriefed and thanked.

Measures

Implicit Association Test (IAT)

As a measure of implicit SE the participants completed an IAT (Greenwald, McGhee, & Schwartz, 1998). We used the affective generic variant of the SE IAT (Greenwald & Farnham, 2000; Rudolph, Schröder, & Schütz, 2006) with target-concept discrimination between 3 self-relevant and 3 non-self-relevant words, and attribute discrimination between 6 pleasant and 6 unpleasant words. The IAT consisted of five blocks of trials (see Table 1 for a detailed illustration of the SE IAT). Data from the combined blocks (3 and 5) were used to compute IAT scores (*D* measure) following Greenwald, Nosek, and Banaji (2003).

In order to compute internal consistency, the IAT was split into four subtests of equal length. Each subtest contained equal numbers of target and attribute stimuli. To avoid biases caused by order effects, each subtest contained trials of all combined blocks

(block 3 and 5). Internal consistency was evaluated by computing Cronbach's Alpha with the four IAT subtests (see Table 2).

Multidimensional Self-Esteem Scale (MSES)

Explicit SE was measured using the total score of the MSES (Schütz & Sellin, 2006), the German adaptation of the scale by Fleming and Courtney (1984). Responses were made on seven-point scales with end points labeled *not at all* (1) and *very much* (7) or *never* (1) and *always* (7), respectively.

Trait Anger and Anger Expression

Trait anger and styles of anger expression were measured with the respective scales from the State-Trait-Anger Expression Inventory (Spielberger, 1988; German version: Schwankmezger et al., 1992). The Trait Anger Scale consists of ten items and measures individual differences in the frequency of experiencing anger. High trait anger individuals are described as perceiving situations as more anger provoking than other individuals and to more frequently and intensely respond with anger in such situations. Anger expression is measured with three eight-item scales that assess individual differences with respect to anger-in (e.g., "I could explode, but I do not let anybody notice"), anger-out (e.g., "I lose my composure"), and anger control (e.g., "I control my anger"). Items were answered on a four-point scale with end points labeled *almost never* (1) to *almost always* (4).

Results and discussion

Descriptive statistics and internal consistencies (Cronbach's Alpha) of all measures are displayed in Table 2. The results are similar to previous research with comparable samples (Schütz & Sellin, 2006; Schwenkmezger et al., 1992). Intercorrelations of all measures are shown in Table 3. Implicit and explicit SE were not correlated. Explicit SE was negatively related to trait anger and anger-in, implicit SE was not correlated with any of the anger variables.

To determine whether implicit and explicit SE were related to trait anger or anger expression, we conducted a series of multiple regression analyses with explicit SE, implicit SE, and the interaction between them as predictors. Scores on the MSES and the SE IAT were centered, and the interaction was represented by the cross-product vector (Aiken & West, 1991). We then regressed anger and anger expression onto these variables.

With trait anger, a significant main effect of explicit SE was found (β = -.36; $t(74)$ = -3.26; $p < .01$), but no significant main effect of implicit SE (β = -.13; $t(74)$ = -1.18; p = .24) or interaction between implicit and explicit SE (β = .17; $t(74)$ = 1.53; p = .13). When

analyzing anger-out and anger control as dependent variables, we found neither the main effects of implicit or explicit SE nor the interaction between them to be significant (*ps* > .23). With anger-in, we found a significant main effect of explicit SE (β = -.26; $t(75)$ = -2.45; $p < .01$) and the predicted interaction between implicit and explicit SE (β = -.32; $t(75)$ = -2.99; $p < .01$). The main effect of implicit SE was not significant (β = .11; $t(75)$ = 1.04; p = .31). Following Cohen and Cohen (1983), we tested simple slopes at values one standard deviation above and below the mean of explicit SE to further explore the interaction. As Figure 1 shows, among people with high explicit SE, implicit SE moderated anger-in behavior (β = -.28; $t(75)$ = -1.87; p = .07), a tendency that was marginally significant. This result indicates that individuals with high explicit SE and low implicit SE tended to report more anger-in behavior than individuals with congruent high SE. However, more importantly, among people with low SE, implicit SE moderated anger-in behavior significantly (β = .50; $t(75)$ = 2.71; $p < .01$), indicating that individuals low in explicit SE and high in implicit SE reported more anger suppression than individuals low in explicit and implicit SE. The results thus partially supported our predictions. As hypothesized, we found that individuals with both forms of SE discrepancies reported more anger suppression than individuals with the associated form of congruent SE. That is to say that individuals with damaged SE (low explicit, high implicit) showed more anger-in than individuals with congruent low SE, and individuals with fragile SE (high explicit, low implicit) tended to exhibit more anger-in than individuals with congruent high (secure) SE. Contrary to our hypothesis, implicit SE did not moderate the relationship between explicit SE and trait anger. The anger expression styles, anger-out and anger control, which we analyzed exploratively, were neither related to implicit nor to explicit SE. With respect to explicit SE these findings correspond to previous results (e.g., Vollmann et al., 2004).

As suggested by Briñol et al. (2006), we also used an alternative way of analyzing our data. [2] For that purpose we created an index of implicit-explicit discrepancy. That index was computed as the absolute difference between the standardized explicit and implicit SE measures. A high score on it represents a large discrepancy of implicit and explicit SE. The discrepancy could be in either direction. In other words, individuals could be higher in the sample distribution of explicit SE than of implicit SE (indicating a positive discrepancy) or they could be lower in explicit SE than in implicit SE (a negative discrepancy). In the study, 41 participants had a positive discrepancy and 38 participants had a negative one. Besides analyzing the size of the discrepancies, we also included a

variable that indicated the direction of the discrepancy (implicit SE < explicit SE vs. explicit SE < implicit SE; dummy coded). We computed multiple regression analyses with the extent of discrepancy, direction of discrepancy, and the interaction between them as predictors. When regressing anger-in onto these variables, we found a significant main effect of direction of discrepancy (β = .21; $t(75)$ = 2.05; p = .04) and a marginally significant interaction between size of discrepancy and direction of discrepancy (β = .25; $t(75)$ = 1.79; p = .08). The main effect of size of discrepancy was not significant (β = .15; $t(75)$ = 1.13; p = .26). Those results indicate that individuals with a negative discrepancy (lower in explicit than in implicit SE) showed more anger-in. This effect was more pronounced in individuals with a larger discrepancy. When we analyzed trait anger, anger-out and anger control as dependent variables, no significant effects emerged (ps > .15). The results of this alternative analytic strategy thus corroborated our previously reported findings. In contrast to Briñol et al. (2006), however, we did not find a main effect, but only a moderating effect of size of discrepancy. Thus, individuals with low explicit and high implicit SE showed most anger suppression.

Suppression of negative emotions has been viewed as a maladaptive regulation strategy (Gatz & Roemer, 2004; Gross & John, 2003; Wegner & Bargh, 1997) because when chronically used it has negative consequences for health and well-being. Anger suppression has been shown to be related to a number of mental, somatic and psychosomatic disorders as well to physiological processes, for example, heightened cardiovascular activation and, consequently, greater risk for cardiovascular diseases (e.g., Dimsdale et al., 1986; Everson, Goldberg, Kaplan, Julkunen, & Salonen, 1998; Mills & Dimsdale, 1993; Spielberger, 1988). In addition, there are associations between mental and psychosomatic disorders and the disposition to perceive situations as anger provoking (trait anger) and to suppress or hold in angry feelings (anger-in) (Müller, Bongard, Heiligtag, & Hodapp, 2001; Schwenkmezger, Hodapp, & Spielberger, 1992).

In sum, maladaptive anger coping is an unspecific factor that can be found in a large range of mental and psychosomatic disorders. Therefore, in Study 2, we aimed at extending the findings of Study 1 by investigating relationships between SE discrepancies and more general indicators of psychological and physical health.

Study 2

As pointed out in the introduction of this paper, explicit SE is an important factor in subjective well-being and psychological health (Baumeister et al., 2003). The relationship

of implicit SE and psychological health and well-being is not quite so clear, however. Whereas some theorists and empirical findings indicate that implicit SE contributes more strongly to health and well-being than explicit SE (Epstein & Morling, 1995; Hetts & Pelham, 2001; Spalding & Hardin, 1999), others do not find such relationships (Schimmack & Diener, 2003), or find more complex interactions with other variables (Shimizu & Pelham, 2004).

The goal of Study 2 was to investigate the relationship between implicit and explicit SE on the one hand and indicators of psychological and physical health on the other hand. We included a scale measuring mental and physical health and took into consideration days of impaired health. We also used attributional style as a specific indicator of mental health, as this variable is related to explicit SE (e.g., Zautra, Guenther, & Chautier, 1985; Cheng & Furnham, 2003) and may thus give insight into the processes that underlie the connection between SE discrepancies and mental health. Attributional (or explanatory) style refers to individual differences in the way individuals habitually explain both positive and negative events that happen in their lives (Abramson, Teasdale, & Seligman, 1978). Individuals who habitually attribute negative events to internal (i.e. concerning the self), stable (i.e. not changing over time), and global (i.e. applying to a variety of settings) causes are classified as having a depressive or pessimistic attributional style. Abramson et al. (1978) argued that attributing failure to causes that are internal, stable, and global constitutes a risk factor for the development of helplessness and, in consequence, depression. It has been shown that such depressive attributional style is maladaptive with respect to a variety of life domains (see Peterson, Maier, & Seligman, 1993, for a review). For example, individuals with an optimistic as opposed to a pessimistic attributional style have a better prognosis for long-term health (Peterson, Seligman, & Vaillant, 1988).

Theorizing that implicit-explicit discrepancies in either direction are perceived as unpleasant and connected to inner conflict and emotional tension, we expected to find impaired mental and physical health in individuals with both variants of discrepant SE compared to individuals with congruent SE. That is, we did not only expect the combination of high explicit and low implicit SE to be connected with impaired health, but we also expected individuals with low explicit but high implicit SE to report more health problems than individuals with congruent low SE.

Method

Participants and Procedure

A total of 102 students (80 female) participated in exchange for partial course credit. The mean age of the participants was 22.69 years (*SD* = 3.74). The study was conducted in the laboratory with groups of up to four individuals. The participants first completed measures of implicit and explicit SE. Subsequently, they completed the health measures described below as well as several personality scales irrelevant to the present study. Finally, they were debriefed and thanked.

Measures

Implicit Association Test (IAT)

The participants completed an IAT as a measure of implicit SE. All stimuli and procedures were the same as in Study 1 (see Table 1), except for the stimuli used in the non-self-relevant category. Whereas these had been more neutral words in Study 1 (e.g., "it, that"), we now used words that referred to other persons (e.g., the German plural forms of "you" and "your"). We changed the stimuli to test whether the results generalize across different versions of the IAT. Also studies of our own comparing different versions of German SE IATs found better reliability and validity of an IAT in which we used an "other" category referring to other persons (Rudolph, Schröder-Abé, & Schütz, 2007).

Multidimensional Self-Esteem Scale (MSES)

As in Study 1, explicit SE was measured using the MSES (Schütz & Sellin, 2006).

Attributional Style

Attributional style was measured with the German Attributional Style Questionnaire (GASQ, Stiensmeier, Kammer, Pelster, & Niketta, 1985; German adaption of the English original ASQ by Peterson et al., 1982). The questionnaire describes eight positive and eight negative events. Participants were instructed to imagine themselves in each of the situations. Then they were asked to write down the main cause of the event and to rate the internality, stability, and globality of that cause. The three causal dimensions were combined into two composite scores of attributional style, one for positive situations and one for negative ones. High scores represent internal, stable and global attributional styles, i.e. a "depressive attributional style" in negative situations and an "optimistic attributional style" in positive situations.

Mental health

Mental health was measured by means of the Nervousness subscale of the Trier Personality Inventory (Becker, 1989). Items were answered on a four-point scale labeled *always, often, sometimes, never*. Scores were computed by summing up across items. To make the scale comparable to the other measures used in this study, coding was inverted so that high scores represent high nervousness. Individuals scoring high on this scale can be described as suffering from physical problems, complaining about problems with concentration and memory, feeling stressed, being concerned about their health, and showing a tendency to somatize.

Days of impaired health

We asked the participants to indicate how many days during the last year they had been ill enough to stay in bed, how many days they had not felt well, and on how many days they had experiencedbad mood. The three items were then averaged to obtain a measure of the number of days each participant had not felt well. As the distribution of this measure was skewed, with many participants reporting only few days of low well-being, we transformed the variable using the natural logarithm in order to obtain an approximately normally distributed measure that could be used in the regression analyses.

Results and Discussion

Descriptive statistics and internal consistencies (Cronbach's Alpha) of all the measures are displayed in Table 2. The results are similar to pervious research with comparable samples (Becker, 1989; Schütz & Sellin, 2006) Table 3 shows intercorrelations of all variables. The low correlation of IAT scores and scores on the MSES indicates that implicit and explicit SE were only weakly related to each other. Explicit SE was negatively related to attributional style of failure situations (i.e. depressive attributional style), nervousness, and days of impaired health. Implicit SE was not correlated with these variables.

We conducted multiple regression analyses with explicit SE, implicit SE, and the interaction between them as predictor variables. Scores on the MSES and the SE IAT (*D* measure) were centered. We then regressed attributional style and health measures onto these variables.

Results of the regression analyses are displayed in Table 4. We found the same pattern of results for depressive attributional style, nervousness, and days of impaired health, i.e. a significant negative main effect of explicit SE, a non-significant main effect of

implicit SE, and a significant interaction between explicit and implicit SE. The results indicate that high explicit SE was related to more positive outcomes on the health variables, and that implicit SE moderated the relationship between explicit SE and health.

To further explore the interactions found between implicit and explicit SE, we tested simple slopes at values one standard deviation above and below the mean of explicit SE. The interaction of explicit and implicit SE predicting depressive attributional style is depicted in Figure 2. We found that in individuals high in explicit SE implicit SE was not related to attributional style (*ß* = -.13; *t*(95) = -.97; *p* = .34). Among individuals low in explicit SE, however, implicit SE was positively related to depressive attributional style (*ß* = .23; *t*(95) = 1.93; *p* = .05).That is, individuals with this form of discrepant SE (low explicit, high implicit SE) made more internal, global and stable attributions in failure situations than individuals with congruent low SE. With nervousness (see Figure 3) simple slopes tests found a similar pattern: In individuals high in explicit SE implicit SE was not related to nervousness (*ß* = -.17; *t*(94) = -1.36; *p* = .18), but in individuals low in explicit SE implicit SE was related to nervousness (*ß* = .25; *t*(94) = 2.20; *p* = .03). Figure 4 shows the results on days of impaired health. With this criterion variable we found that implicit SE moderated the relationship between explicit SE and health in individuals with low explicit SE (*ß* = .22; *t*(94) = 1.91; *p* = .05) as well as high explicit SE (*ß* = -.34; *t*(94) = -2.52; *p* = .01). That is to say that individuals with both forms of discrepant SE reported more days of impaired health than individuals with the associated forms of congruent SE. [3]

Again we conducted alternative analyses of the data using the discrepancy indices described in Study 1. In Study 2, 52 participants had a positive discrepancy, 49 had a negative one. We computed multiple regression analyses with extent of discrepancy, direction of discrepancy, and the interaction between them as predictors. When using attributional style (failure), days of impaired health, and nervousness as dependent variables, we found the same pattern of results: significant main effects of direction of discrepancy and significant interactions between size of discrepancy and direction of discrepancy. The main effects of size of discrepancy were not significant. No significant effects were found with attributional style (success). The results indicate that individuals with a negative discrepancy (lower in explicit SE than in implicit SE) showed more impaired health than individuals with a positive discrepancy. This effect was more pronounced the larger the discrepancy was. The results of this alternative analytic strategy

thus corroborated our previously reported findings in showing that individuals with low explicit and high implicit SE showed most impaired health.

In conclusion, the results supported our predictions. Individuals with both forms of discrepant SE (high explicit/low implicit, and low explicit/high implicit) had a higher tendency towards depressive attributional style and reported lower levels of mental and physical health than individuals with the associated forms of congruent SE. Most interestingly, individuals with damaged SE (i.e. low explicit and high implicit SE) were found to report even less well-being than individuals with congruent low SE. With attributional style and nervousness, however, simple slopes of implicit SE turned out to be significant only in individuals with low explicit SE but not in individuals with high explicit SE. With days of impaired health, individuals with both variants of discrepant SE were more burdened than individuals with the associated congruent forms, but effects were stronger in individuals with damaged SE. Summing up, individuals with damaged SE were found to have the lowest levels of health and well-being compared with all other combinations of explicit and implicit SE.

General Discussion

Taken together, the two studies provide converging evidence of impaired psychological and physical health in both possible patterns of discrepant SE, that is fragile SE (i.e. high explicit/low implicit SE) and damaged SE (i.e. low explicit/high implicit SE). Individuals with discrepant SE scored lower on a scale measuring mental and physical health and reported more days of impaired health than individuals with the associated forms of congruent SE. Furthermore, self-esteem discrepancies were related to higher levels of anger suppression and depressive attributional style. The latter two variables, which were closely related to mental and physical health in past studies, provide first insight in the underlying processes that may be involved in the relationship between SE discrepancies and impaired health.

We shall not leave unmentioned that despite the interesting and consistent results found, the present study is limited in several ways. First, most variables we measured relied on self-report. Accordingly, one cannot rule out the possibility that response biases, such as self-presentation or self-deception (Paulhus, 1984) jointly influenced the measures used. However, implicit SE was measured with an indirect measure, viz. an IAT. In order to obtain data from additional sources, we are currently conducting a study in which health indicators are rated by the family members and friends of our participants. This procedure

may result in weaker relationships between the variables, as past research found stronger effects of SE when more subjective measures of health were used (see Baumeister et al., 2003, for a review). On the other hand, if participants provide biased data on their health (e.g., due to impression management, defensive processes, or limited access to certain contents), the relationships between SE discrepancies and health might become even more distinct. The second limitation of the present study is its correlational and cross-sectional design. With the data currently available, it is impossible to draw conclusions on the direction of causality. In accordance with accounts by Briñol et al. (2006), we think it is plausible that certain constellations of implicit and explicit SE lead to dysfunctional processes (e.g., emotion suppression) and are thus connected to impaired health and well-being. But the other causal direction warrants consideration, too. With damaged SE, it is possible that certain individuals originally had congruent high SE, but lost explicit SE because of health problems. This explanation does not suffice, however, to explain why individuals with damaged SE show even lower levels of health than individuals with congruent low SE. To resolve these uncertainties, we are planning a longitudinal study in order to examine the causal directions between health and implicit as well as explicit SE. A third limitation concerns the conditions under which the data were collected. Past research has shown that the effects of discrepancies between implicit and explicit SE are especially pronounced in situations of SE threat (e.g., Jordan et al., 2005; McGregor & Marigold, 2003; Schröder-Abé et al., in press). Furthermore, certain anger-related effects can only be found in anger-provoking situations (e.g., Vollmann et al., 2004). This phenomenon may explain why we did not find effects of SE discrepancies on trait anger and attributional style concerning success situations. [4] Therefore, it seems necessary to replicate the effects in a study with two conditions (i.e. threat vs. no threat) and see whether the results will differ. In addition, it will be interesting to compare threatening and non-threatening situations in daily life with the help of experience sampling methods.

The lack of relationships between SE discrepancies and trait anger may also due to the fact that anger is a rather paradoxical emotion. On the one hand, anger is a negative emotion that could be connected to implicit-explicit discrepancies. On the other hand, anger is typically associated with a sense of certainty (e.g., Smith & Ellsworth, 1985). Therefore, the effects of anger often differ from those of other negative emotions (e.g., Lerner & Tiedens, 2006; Tiedens & Linton, 2001). As implicit-explicit discrepancies are connected to implicit self-doubt (Briñol et al., 2006) the certain appraisal of anger may

account for the fact that no relationships were found between SE discrepancies and trait anger. Likewise, low self-certainty, which has been shown to be related to anger and aggression (Wright, 2001), might play a role in SE discrepancies. Future studies should therefore take into account other negative emotions and address the role of certainty and self-doubts in the effects of implicit-explicit discrepancies.

It is important to emphasize that individuals with damaged SE show even lower levels of health than individuals with congruent low SE. That is to say that individuals with low explicit SE are worse off if they have high implicit SE than if they have low implicit SE. The findings suggest that implicit SE is not a resource independent of an individual's level of explicit SE. Clearly, implicit SE is not always advantageous, but its effects depend on an individual's level of explicit SE. Therefore, it seems essential to consider the interplay of, and discrepancies between, implicit and explicit SE.

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Footnotes

1) The STAXI-2 (Spielberger, 1999) separates Anger Control-Out and Anger Control-In. As there was no updated German version available at the time of data collection, we did not distinguish these dimensions.

2) We thank Pablo Briñol for this useful suggestion.

3) We also conducted separate regression analyses and simple slope tests with the three variables that were combined to form the measure of days of impaired health (i.e. days of bed rest, days of not feeling well, and days of bad mood). We found the same pattern of results with these separate measures as we did with the combined measure.

4) Alternatively, the lack of relationships between SE and attributional style concerning positive events may be due to a lack of reliability of the success subscale. Furthermore, the effects of attributional style for positive events are usually not as robust as those for negative events (Peterson, 1991).

Table 1

Illustration of the Self-Esteem Implicit Association Test (SE IAT)

			Response key assignment		
Block	No. of trials	Task	Left key	Right key	Sample items
1	24	Attribute discrimination	Pleasant	Unpleasant	Happiness, friend, harm,
2	24	Target discrimination	Me	Not Me	Me, my, it, that
3	96	Initial combined task	Pleasant or Me	Unpleasant or Not Me	Happiness, friend, harm,
4	24	Reversed target discrimination	Not Me	Me	It, that, me, my
5	96	Reversed combined task	Pleasant or Not Me	Unpleasant or Me	Happiness, friend, harm,

Note. The original German stimuli may be obtained from the authors.

Table 2

Descriptive statistics of all variables

	#	α	M	SD	Min	Max
Study 1						
Explicit SE	32	.92	151.04	25.92	75	204
Implicit SE (IAT, *D* measure)	n.a.	.88	.79	.35	-.27	1.37
Implicit SE (IAT, ms)	n.a.	.88	393.68	229.45	-69.61	961.29
Trait Anger	10	.81	21.45	5.36	13	39
Anger-In	8	.83	14.53	3.90	8	26
Anger-Out	8	.72	16.18	4.65	8	26
Anger Control	8	.74	20.54	2.89	12	29
Study 2						
Explicit SE	32	.94	150.22	28.85	77	205
Implicit SE (IAT, *D* measure)	n.a.	.80	.58	.32	-.56	1.20
Implicit SE (IAT, ms)	n.a.	.80	135.79	97.49	-76.13	500.57
Nervousness	11	.70	18.03	3.53	11	27
Attributional Style Success	8	.60	87.23	9.74	65	113
Attributional Style Failure	8	.75	79.27	10.88	52	106
Days of Impaired Health	3	.67	28.25	17.00	1.00	183.33
Days of Impaired Health (ln)	3	.67	2.94	.92	.00	5.21

Note. #: Number of items; α: Internal Consistency (Cronbach's Alpha); SE: self-esteem; ln: natural logarithm.

Table 3

Intercorrelations of all variables

	(1)	(2)	(3)	(4)	(5)
Study 1					
(1) Explicit SE	-				
(2) Implicit SE (IAT, *D* measure)	-,010	-			
(3) Trait Anger	-,293**	-,093	-		
(4) Anger-In	-,332**	,047	,083	-	
(5) Anger-Out	-,079	-,011	,676**	-,135	-
(6) Anger Control	,105	,113	-,394**	,407**	-,445**
Study 2					
(1) Explicit SE	-				
(2) Implicit SE (IAT, *D* measure)	,136	-			
(3) Attributional Style Success	,154	,048	-		
(4) Attributional Style Failure	-,366**	,067	,257**	-	
(5) Nervousness	-,488**	-,025	-,094	,310**	-
(6) Days of Impaired Health (ln)	-,413**	-,095	,014	,219*	,359**

Note. * $p < .05$; ** $p < .01$; SE: self-esteem; ln: natural logarithm.

Table 4

Regression analyses predicting attributional style and health variables

	ß	*t*	*df*	*p*
Attributional Style Success				
Explicit SE	.16	1.53	95	.12
Implicit SE	.07	.64	95	.51
Explicit x Implicit SE	.12	1.14	95	.25
Attributional Style Failure				
Explicit SE	-.41	-.44	95	<.01
Implicit SE	.05	.50	95	.62
Explicit x Implicit SE	-.20	-2.09	95	.03
Nervousness				
Explicit SE	-.57	-6.35	94	<.01
Implicit SE	.04	.42	94	.67
Explicit x Implicit SE	-.23	-2.56	94	.01
Days of Impaired Health (ln)				
Explicit SE	-.46	-5.01	94	<.01
Implicit SE	-.06	-.66	94	.50
Explicit x Implicit SE	-.30	-3.23	94	<.01

Note. SE: self-esteem; ln: natural logarithm.

Figure captions.

Figure 1. Predicted values for anger-in behavior as a function of explicit SE and implicit SE. SE = self-esteem, SD = standard deviation.

Figure 2. Predicted values for depressive attributional style as a function of implicit SE and explicit SE. SE = self-esteem, SD = standard deviation.

Figure 3. Predicted values for nervousness as a function of implicit SE and explicit SE. SE = self-esteem, SD = standard deviation.

Figure 4. Predicted values for days of impaired health as a function of implicit SE and explicit SE. SE = self-esteem, SD = standard deviation, ln = natural logarithm.

Figure 1

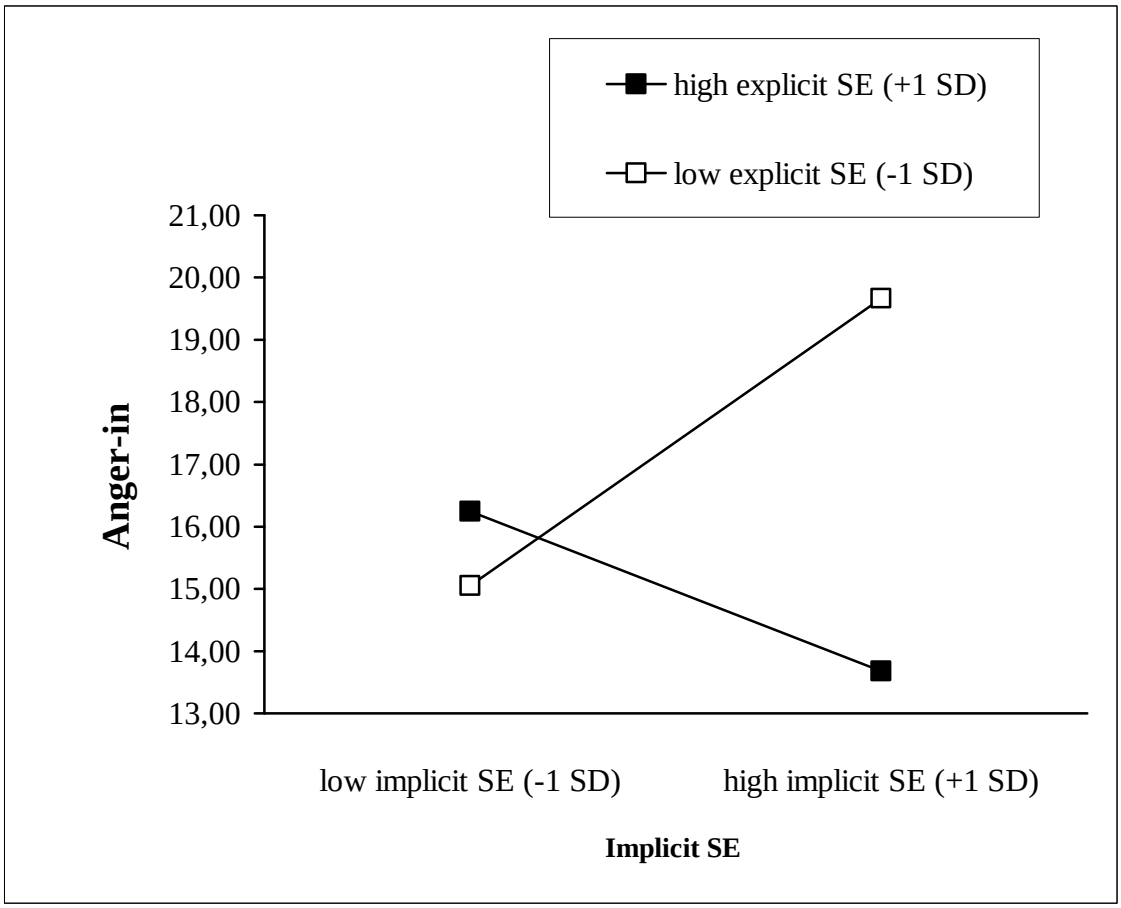

high explicit SE (+1 SD)
low explicit SE (-1 SD)
21,00
20,00
19,00
18,00
17,00
16,00
15,00
14,00
13,00
Anger-in
low implicit SE (-1 SD)
high implicit SE (+1 SD)
Implicit SE

Figure 2

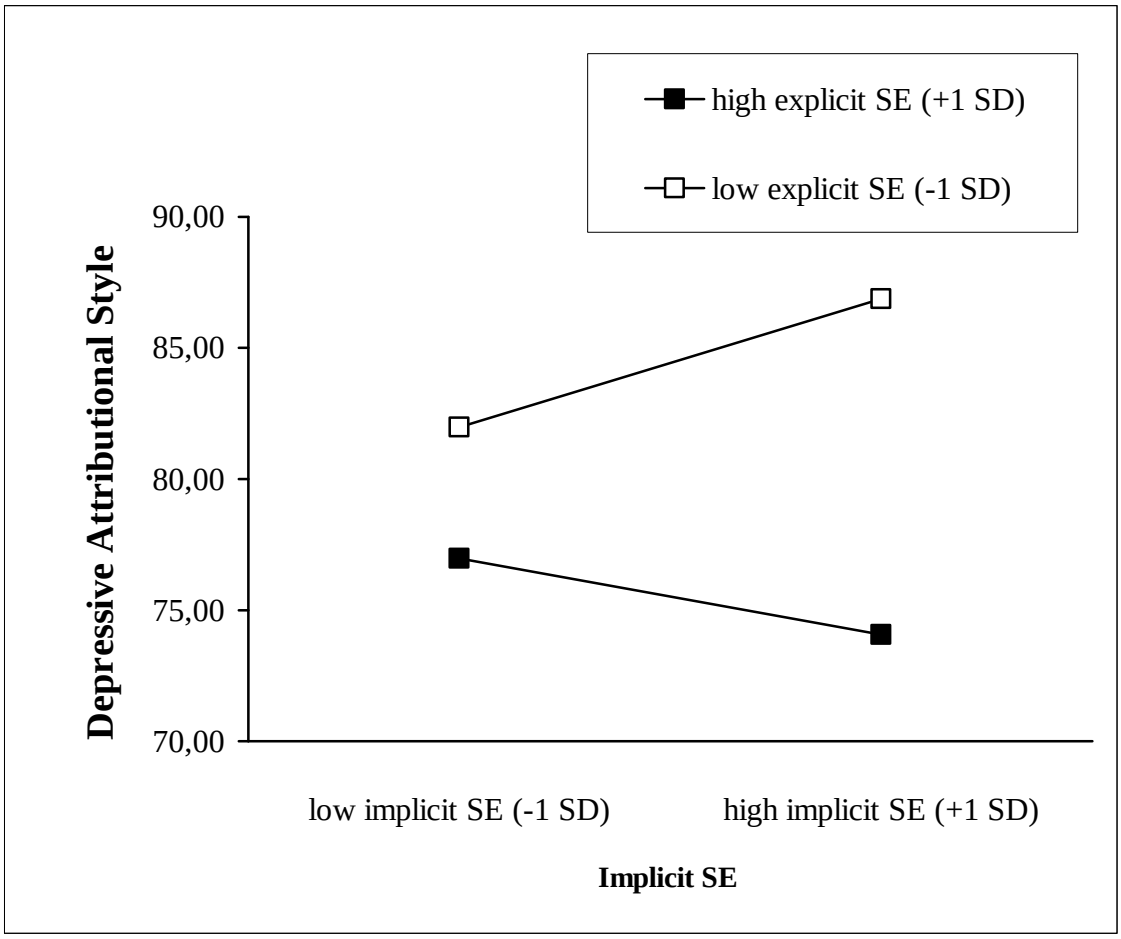

high explicit SE (+1 SD)
low explicit SE (-1 SD)
Depressive Attributional Style
90,00
85,00
80,00
75,00
70,00
low implicit SE (-1 SD)
high implicit SE (+1 SD)
Implicit SE

Figure 3

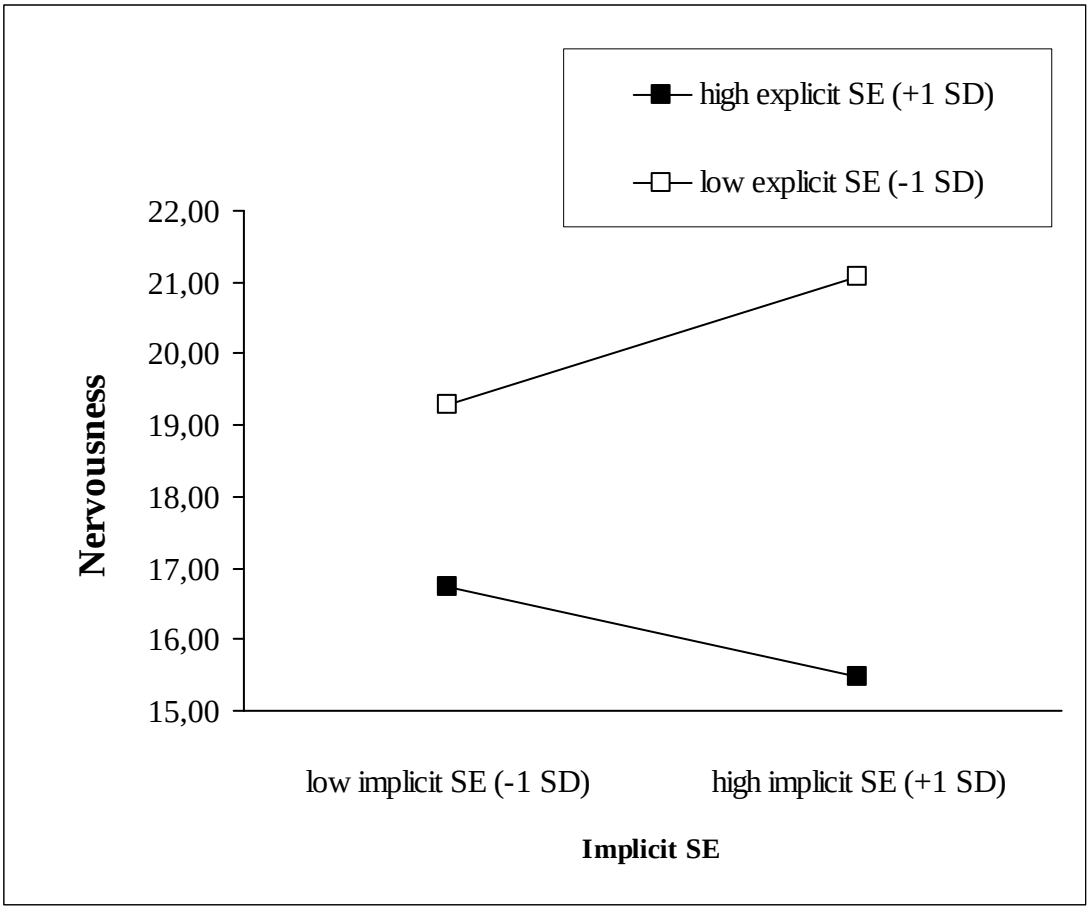
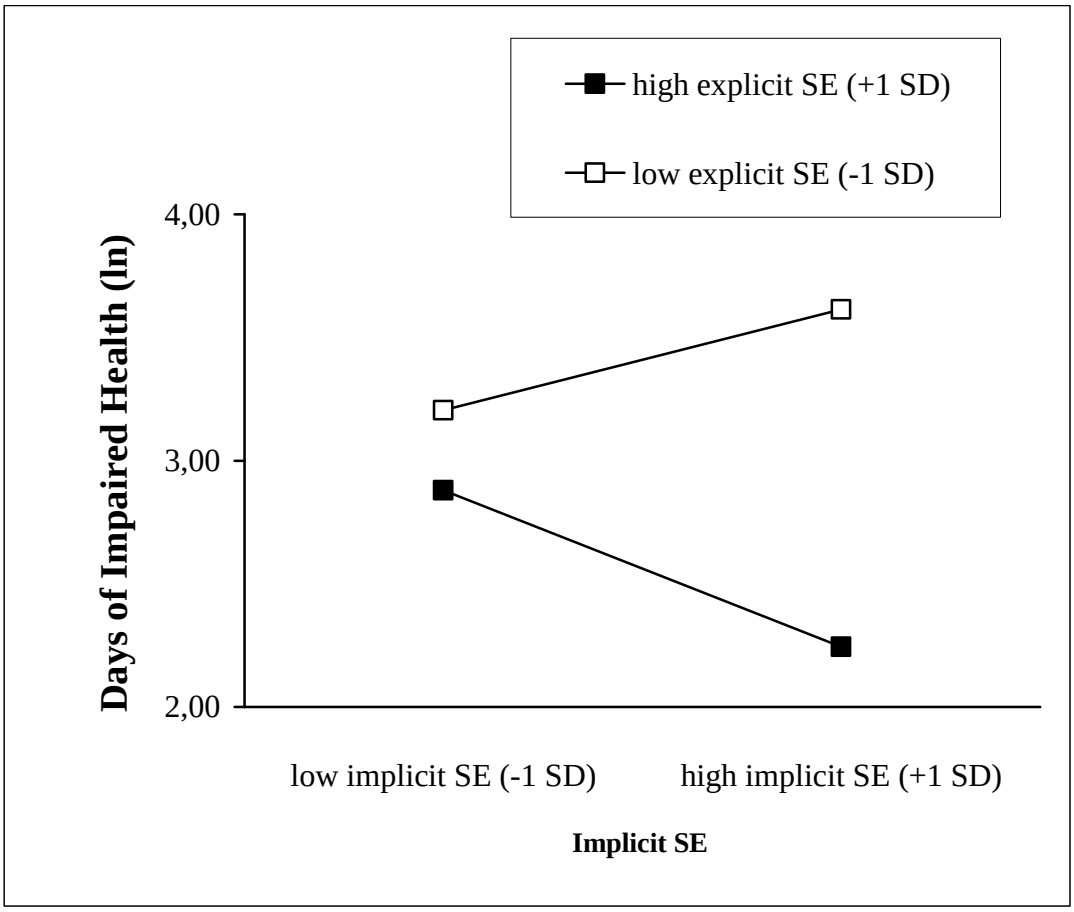

high explicit SE (+1 SD)
low explicit SE (-1 SD)
22,00
21,00
20,00
19,00
18,00
17,00
16,00
15,00
Nervousness
low implicit SE (-1 SD)
high implicit SE (+1 SD)
Implicit SE

Figure 4


high explicit SE (+1 SD)
low explicit SE (-1 SD)
Days of Impaired Health (ln)
4,00
3,00
2,00
low implicit SE (-1 SD)
high implicit SE (+1 SD)
Implicit SE

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SS 2006	Testtheorie und Testkonstruktion – Konstruktion eines Fragebogens zum Thema Anspruchshaltungen
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07/08/2007	EAPP Summer School on Implicit Measures of Personality/ Bertinoro, Italien/ Jan De Houwer, Bertram Gawronski, Rainer Banse, Marco Perugini, Reinout Wiers
06/2007	DGPs-Workshop Vorbereiten und Verfassen von Forschungsanträgen/ Institut für Wissensmedien IWM Tübingen/ Erich Schröger, Dagmar Stahlberg, Friedrich Hesse, Martin Hautzinger
03/2007	Springschool Funktionelle Magnetresonanztomographie in der psychologischen Forschung/ Bender Institute of Neuroimaging/ Justus Liebig Universität Gießen
09/2006	Doktorandenworkshop der Fachgruppe Differentielle Psychologie, Persönlichkeitspsychologie und Psychologische Diagnostik/ Universität Koblenz-Landau/ Manfred Schmitt, Lothar Schmidt-Atzert

07/2006	Summer School on Multi-Level-Analysis of Personality Data/ Syros, Griechenland/ Anthony Bryk, John B. Nezlek, William Ickes, Jens B. Asendorpf, Daniel Ozer
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Ad-hoc Reviewing

European Journal of Personality

European Journal of Psychological Assessment

Self and Identity

Journal of Individual Differences

The Journal of Social Psychology

Zeitschrift für Sozialpsychologie

Zeitschrift für Medienpsychologie

Forschungsinteressen

Implizite Selbstwertschätzung und Selbstwertdiskrepanzen – Zusammenhänge mit Defensivität, psychischer Gesundheit und Emotionsregulation

Untersuchung natürlich auftretender sozialer Interaktionen mittels Tagebuchverfahren

Zielorientierung und implizite Persönlichkeitstheorien

Selbstkonzept und Selbstwertschätzung bei PatientInnen mit psychischen- und Persönlichkeitsstörungen

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Publikationen

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Zeitschriftenartikel

Schröder-Abé, M., & Schütz, A. (2007). Selbstkonzept und Selbstwertschätzung. *Persönlichkeitsstörungen – Theorie und Therapie, 11,* 3-11.

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Nezlek, J. B., Schröder-Abé, M. & Schütz, A. (2006). Mehrebenenanalysen in der psychologischen Forschung: Vorteile und Möglichkeiten der Mehrebenenmodellierung mit Zufallskoeffizienten. *Psychologische Rundschau, 57,* 213-223.

Buchkapitel

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Eingeladene Vorträge

Schröder, M. (2006, May). *Implicit self-esteem and psychological health. Department of Experimental Clinical and Health Psychology,* Ghent University, Belgium.

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Konferenzbeiträge

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