

Soziale Unterstützung in der Befindensregulation im Alltag

Inauguraldissertation

zur

Erlangung des akademischen Grades

doctor rerum naturalium (Dr. rer. nat.)

an der Mathematisch-Naturwissenschaftlichen Fakultät

der

Ernst-Moritz-Arndt-Universität Greifswald

vorgelegt von

Kerstin Siewert

geboren am 06.07.1982

in Lübz

Greifswald, 26.01.2012

Dekan: Prof. Dr. Klaus Fesser

1. Gutachterin: Prof. Dr. Hannelore Weber

2. Gutachter: Prof. Dr. Ulrich Ebner-Priemer

Tag der Promotion: 30.05.2012

Inhaltsverzeichnis

Abbildungsverzeichnis	1
Tabellenverzeichnis	2
Zusammenfassung	3
1. Theoretischer Hintergrund	6
1.1 Soziale Unterstützung.....	6
1.1.1 Begriffsbestimmung.....	6
1.1.2 Soziale Unterstützung und Befindensregulation.....	7
1.1.3 Methodische Ansätze zur Untersuchung des Zusammenhangs zwischen sozialer Unterstützung und Befindensregulation	9
1.2 Herleitung der Fragestellungen und der Hypothesen	12
1.2.1 <i>Studie 1:</i> Der Zusammenhang zwischen Diskrepanzen bei der sozialen Unterstützung und dem subjektiven Wohlbefinden.....	12
1.2.2 <i>Studie 2:</i> Der Zusammenhang zwischen Veränderungen bei der wahrgenommenen Unterstützung und der Zielerreichung infolge traurigkeitsbezogener Ruminationsprozesse	12
1.2.3 <i>Studie 3:</i> Der Zusammenhang zwischen ärgerassoziiert Rumination und dem sozialen Wohlbefinden.....	13
2 Methoden	15
2.1 Stichprobe.....	15
2.2 Erhebungsinstrumente	15
2.2.1 <i>Studie 1:</i> Soziale Unterstützung und subjektives Wohlbefinden.....	15
2.2.2 <i>Studie 2 und 3:</i> Soziales Befinden und traurigkeits- bzw. ärgerbezogene Rumination.....	16
2.3 Statistische Analysen	17
2.3.1 <i>Studie 1:</i> Soziale Unterstützung und subjektives Wohlbefinden.....	17
2.3.2 <i>Studie 2 und Studie 3:</i> Soziales Befinden und traurigkeits- bzw. ärgerbezogene Rumination.....	17
3 Ergebnisse	19
3.1 <i>Studie 1:</i> Soziale Unterstützung und subjektives Wohlbefinden.....	19
3.2 <i>Studie 2:</i> Wahrgenommene Unterstützung und traurigkeitsbezogene Rumination ..	20
3.3 <i>Studie 3:</i> Ärgerassoziierte Rumination und soziales Wohlbefinden	20
4 Diskussion	22
4.1 <i>Studie 1:</i> Soziale Unterstützung und subjektives Wohlbefinden.....	22

4.2 <i>Studie 2:</i> Wahrgenommene Unterstützung und traurigkeitsbezogene Rumination...	22
4.3 <i>Studie 3:</i> Ärgerassoziierte Rumination und soziales Wohlbefinden	23
4.4 Fazit	24
5 Literaturverzeichnis	27
6 Anhang	32
Anhang A <i>Studie 1:</i> Siewert, Antoniw, Kubiak & Weber (2011)	
Anhang B <i>Studie 2:</i> Siewert, Kubiak, Jonas & Weber (submitted)	
Anhang C <i>Studie 3:</i> Siewert, Kubiak, Jonas & Weber (2011)	
Anhang D Erklärung bei Gemeinschaftsarbeiten	

Abbildungsverzeichnis

Abbildungsverzeichnis

Abbildung 1	Soziale Unterstützung im Rahmen der Befindensregulation	8
Abbildung 2	Flussdiagramm für die Studien 2 und 3	17

Tabellenverzeichnis

Tabelle 1	Regressionsmodelle für die Vorhersage des subjektiven Wohlbefindens (negativer Affekt und wahrgenommene Belastung)	19
Tabelle 2	Regressions- und Moderationsanalyse bei der Vorhersage einer Verschlechterung des sozialen Wohlbefindens	21

Zusammenfassung

Fragestellungen: In dieser Dissertation soll mithilfe der Methode des ambulanten Assessment die Rolle der sozialen Unterstützung in der Befindensregulation verhaltens- und erlebensnah im natürlichen Umfeld der Probanden untersucht werden. Bei der Forschung zur Bedeutung der sozialen Unterstützung für das Befinden und die Befindensregulation dominieren bislang noch retrospektive Auskünfte und globale Selbstberichte als Datenquellen. Es gibt vergleichsweise deutlich weniger Studien, die den Zusammenhang zwischen sozialer Unterstützung und Befindensregulation unter alltagsnahen Bedingungen und prozessorientiert untersuchen. In den vergangenen Jahren gab es zwar zunehmend mehr Publikationen zur sozialen Unterstützung, die die Methode des ambulanten Assessment verwendeten. Jedoch sind die Auswirkungen von Diskrepanzen bei der sozialen Unterstützung auf das Befinden bzw. der Zusammenhang zwischen sozialer Unterstützung und der Befindensregulation—insbesondere die Beziehung zu Rumination als eine wichtige Regulationsstrategie—bislang nur unzureichend unter alltagsnahen Bedingungen untersucht worden.

Die vorliegende Dissertation umfasst drei Studien, in denen mittels ambulanten Assessment verschiedene Fragestellungen im Hinblick auf die Bedeutung der sozialen Unterstützung bei der Befindensregulation untersucht wurden. Es wurde überprüft, welchen Einfluss Diskrepanzen zwischen der gewünschten und erhaltenen sozialen Unterstützung auf das subjektive Wohlbefinden (negativer Affekt, wahrgenommene Belastung) im Alltag von Studierenden ausüben (*Studie 1*), wie sich Veränderungen in der wahrgenommenen sozialen Unterstützung auf die Erreichung vonverständnis- bzw. lösungsfokussierten Zielen auswirken, die Personen mit ruminativen Prozessen infolge von traurigkeitsassoziierten Episoden versuchen zu erreichen (*Studie 2*) und welche Auswirkungen ärgerbezogene Ruminationsprozesse—insbesondere eine rachegefokussierte Rumination—auf das soziale Wohlbefinden haben, d.h. auf die subjektive Einschätzung von interpersonellen Beziehungen hinsichtlich Involviertheit, Zufriedenheit und dem Ausmaß an sozialer Unterstützung (*Studie 3*).

Methodik: In den vorgestellten Studien wurden die jeweiligen Fragestellungen mithilfe tragbarer Kleincomputer (Handheld-Computer) untersucht. Diese Methodik ermöglicht eine verhaltens- und erlebensnahe Erfassung im natürlichen Umfeld der Probanden. So kann beispielsweise das Auftreten von Verzerrungen durch retrospektive Einschätzungen verringert werden.

Bei *Studie 1* nahmen 30 weibliche Studierende der Universität Greifswald im Alter von 19 bis 33 Jahren ($M = 24.2$, $SD = 3.99$) teil. Den Teilnehmerinnen wurde über den Zeitraum von sieben Tagen ein tragbarer Kleincomputer mitgegeben, auf dem signalkontingente Erhebungspläne implementiert wurden.

An *Studie 2* und *Studie 3* nahmen insgesamt 144 Studierende der Universität Greifswald (keine Studierende der Psychologie) teil. Die Probanden wurden randomisiert entweder der Hauptgruppe oder einer Kontrollgruppe zugewiesen. Nach Abschluss der Datenerhebung befanden sich 93 Studierende (64.5% Frauen, $M = 23.4$ Jahre, $SD = 2.9$) in der Hauptgruppe und 51 Studierende (70.6% Frauen, $M = 23.7$ Jahre, $SD = 2.7$) in der Kontrollgruppe. Die Kontrollgruppe diente zur Überprüfung von potentiellen Reaktivitätseffekten infolge der Messwiederholungen. Den Teilnehmern wurde über den Monitoringzeitraum von 28 Tagen ein tragbarer Kleincomputer mitgegeben, der die Teilnehmer vier Mal täglich zu randomisierten Zeitpunkten zwischen 9 und 21 Uhr befragte. Die Auswertung erfolgte in allen drei Studien durch entsprechende Strategien der Multilevelanalyse.

Ergebnisse: In *Studie 1* leisteten die Diskrepanzen bei der sozialen Unterstützung einen signifikanten Beitrag zur Vorhersage des subjektiven Wohlbefindens. Eine Unterversorgung mit emotionaler Unterstützung ging mit einer Erhöhung der wahrgenommenen Belastung einher, während eine Überversorgung mit emotionaler Unterstützung sowohl mit einer Verringerung des negativen Affekts als auch der wahrgenommenen Belastung einherging. Diskrepanzen bei der informationellen und instrumentellen Unterstützung leisteten im Unterschied zur emotionalen Unterstützung einen geringeren Beitrag zur Vorhersage des Wohlbefindens.

Den Ergebnissen der *Studie 2* zufolge war eine wahrgenommene Steigerung in der sozialen Unterstützung mit der Erreichung von lösungsfokussierten Zielen positiv assoziiert, d.h. von Zielen, die auf eine Bewältigung der traurigkeitsassoziierten Episode fokussierten. Die Ergebnisse der Moderatoranalysen weisen zudem darauf hin, dass insbesondere für Personen mit höherer symptomfokussierter Rumination ein signifikanter Zusammenhang zwischen einer erhöhten wahrgenommenen Unterstützung und dem Erreichen der lösungsfokussierten Ziele bestand.

In *Studie 3* zeigte sich, dass ärgerassoziierte Rumination nicht per se mit einer Verschlechterung des sozialen Wohlbefindens einherging. Habituelle Ärgerneigung moderierte den Zusammenhang zwischen rachefokussierter Rumination und dem sozialen Wohlbefinden dahingehend, dass sich lediglich für Personen mit höheren Werten bei der

Zusammenfassung

Ärgerneigung ein signifikanter Zusammenhang zwischen der rachebezogenen Rumination und einer Verringerung des sozialen Wohlbefindens zeigte.

Schlussfolgerungen: Die Ergebnisse der vorliegenden Studien verdeutlichen die Notwendigkeit einer prozessorientierten und alltagsnahen Erfassung mittels der Methode des ambulanten Assessment, um auf diese Art und Weise ein umfassendes Bild über die Rolle der sozialen Unterstützung im Rahmen der Befindensregulation zu erhalten. Die Studien leisten einen wichtigen Beitrag zur Unterstützungsforschung, da sowohl der Zusammenhang zwischen einer Über- bzw. Unterversorgung mit sozialer Unterstützung und dem Wohlbefinden als auch die Beziehung zwischen sozialer Unterstützung und traurigkeits- bzw. ärgerassozierter Rumination bislang nur unzureichend im Alltagskontext untersucht worden sind. Zukünftige Studien zur Rolle der sozialen Unterstützung bei der Befindensregulation im Alltag sollten zusätzlich zur Empfängerperspektive auch die Geberperspektive in den Fokus der Betrachtung stellen.

1. Theoretischer Hintergrund

In dieser Dissertation soll mittels ambulanter Assessmentstrategien die Rolle der sozialen Unterstützung im Rahmen der Befindensregulation verhaltens- und erlebensnah im Alltagskontext untersucht werden. Vorab wird zunächst das Konzept der sozialen Unterstützung vorgestellt und es werden anschließend wesentliche Befunde zum Zusammenhang zwischen sozialer Unterstützung und verschiedenen Aspekten der Befindensregulation zusammengefasst. Dabei soll verdeutlicht werden, dass insbesondere die Methodik des ambulanten Assessment dazu geeignet erscheint, um Fragestellungen zur Bedeutung der sozialen Unterstützung für die Befindensregulation zu untersuchen.

1.1 Soziale Unterstützung

1.1.1 Begriffsbestimmung

Das Konstrukt der Sozialen Unterstützung bezieht sich auf eine Interaktion zwischen mindestens zwei Personen, die dazu dient, einen problematischen, für die betreffende Person belastenden Zustand zu verändern bzw. das Ertragen dieses belastenden Zustands zu erleichtern, wenn eine Veränderung nicht möglich erscheint (Schwarzer, 2004). Soziale Unterstützung umfasst demnach qualitative und funktionale Aspekte von real erfahrenen sowie kognitiv repräsentierten sozialen Interaktionen (Knoll & Kienle, 2007).

Unterstützungshandlungen können anhand ihrer Funktion in emotionale, informationelle und instrumentelle Unterstützung unterteilt werden (Helgeson, 2003). *Emotionale Unterstützung* umfasst die Vermittlung von Trost, Wärme und Zuspruch sowie den Ausdruck von Zuwendung und Zuneigung. *Informationelle Unterstützung* erfolgt über das Übermitteln relevanter Informationen, z.B. in Form von Hinweisen oder Ratschlägen. *Instrumentelle Unterstützung* beinhaltet konkrete Hilfeleistungen bei Aufgaben, die nicht allein bewältigt werden können, sowie die Bereitstellung von finanziellen Mitteln und die Bereitschaft, benötigte Waren bzw. Materialien zu besorgen.

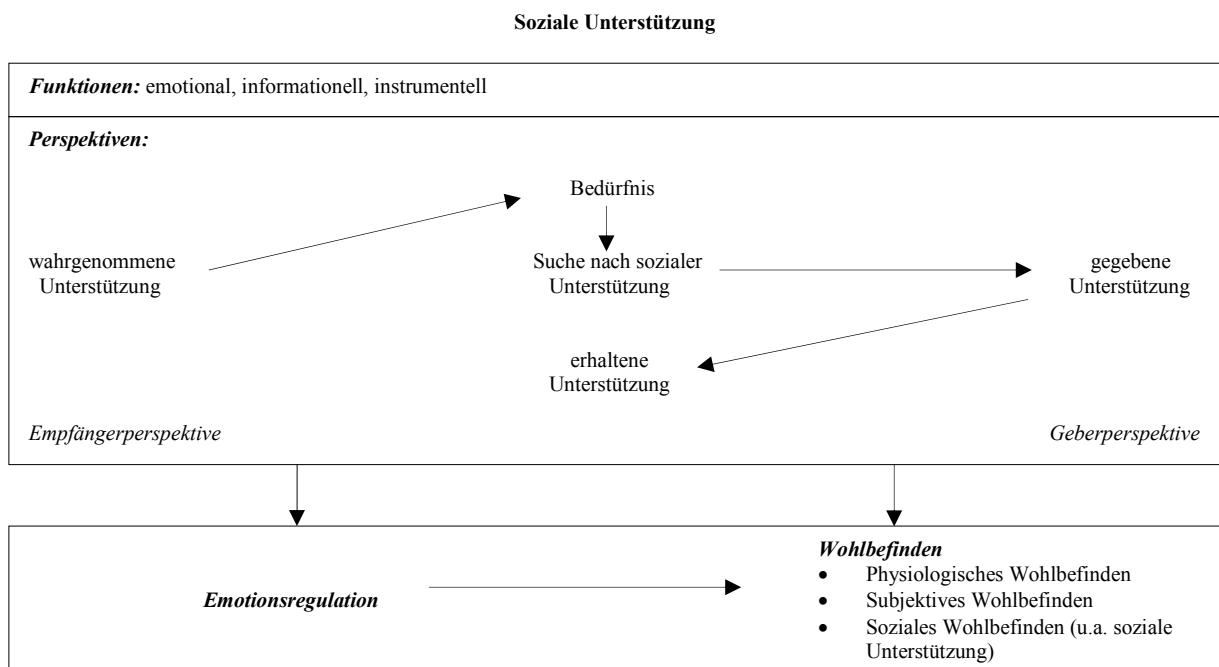
Neben einer funktionellen Unterteilung können verschiedene Perspektiven bei der sozialen Unterstützung betrachtet werden. So können Unterstützungshandlungen dahingehend unterschieden werden, ob die Wahrnehmung von Unterstützung oder erhaltene Unterstützungsleistungen im Mittelpunkt der Betrachtung stehen (u.a. Dunkel-Schetter & Bennett, 1990). Bei der wahrgenommenen oder antizipierten Unterstützung (*perceived support*) handelt es sich um die Erwartung bzw. Überzeugung einer Person, dass Mitglieder

des sozialen Netzwerkes in belastenden Situationen prinzipiell zur Verfügung stehen werden. Diese Erwartung kann sich aufgrund von Erfahrungen mit dem persönlichen sozialen Netzwerk herausbilden und weiterentwickeln (Sarason, Sarason, & Shearin, 1986). Bei Angaben zur erhaltenen Unterstützung (*received support*) handelt es sich um die erfahrene Unterstützung aus Sicht des Empfängers in der Retrospektive. Darüber hinaus werden als weitere Perspektiven der sozialen Unterstützung das Bedürfnis nach Unterstützung (*need for support, desired support*) als die individuelle Präferenz, soziale Unterstützung in Anspruch zu nehmen, die Suche nach Unterstützung (*support seeking*), d.h. das aktive Bemühen (direkt verbal oder indirekt nonverbal), innerhalb des sozialen Netzes Unterstützung zu mobilisieren, sowie die gegebene Unterstützung (*provided support*) aus Sicht des Unterstützungsgebers in der Retrospektive unterschieden.

1.1.2 Soziale Unterstützung und Befindensregulation

Die Forschung zur sozialen Unterstützung hat in den vergangenen drei Jahrzehnten aufzeigen können, dass soziale Unterstützung für die Regulation des Befindens, d.h. für das Wohlbefinden und die Emotionsregulation eine bedeutsame Rolle spielt. In der Abbildung 1 werden die verschiedenen Funktionen und Perspektiven der sozialen Unterstützung aus der Empfänger- und Geberperspektive sowie die Zusammenhänge zwischen den einzelnen Perspektiven dargestellt. Es wird deutlich, dass soziale Unterstützung die Befindensregulation beeinflusst, d.h. sowohl Auswirkungen auf das Wohlbefinden als auch die Emotionsregulation hat. Gleichzeitig kann die Art und Weise der Befindensregulation wiederum verschiedene Aspekte des Wohlbefindens beeinflussen, so auch das soziale Wohlbefinden (d.h. die subjektive Zufriedenheit mit interpersonellen Beziehungen, die Erfüllung von sozialen Rollen sowie das Ausmaß an sozialer Unterstützung), welches einen thematischen Schwerpunkt in *Studie 3* der vorliegenden Dissertation bildet.

Abbildung 1: Soziale Unterstützung im Rahmen der Befindensregulation



Im Folgenden werden zunächst die Beziehungen zwischen sozialer Unterstützung und dem Wohlbefinden und anschließend die Zusammenhänge zwischen sozialer Unterstützung und Emotionsregulation dargestellt.

Im Hinblick auf die Bedeutung für das Wohlbefinden hat das Konstrukt der *wahrgenommenen Unterstützung* theoretisch und empirisch die höchste Relevanz. Zahlreiche Studien belegen konsistent einen positiven Zusammenhang zwischen der wahrgenommenen Verfügbarkeit von Unterstützung und dem subjektiven bzw. psychologischen Wohlbefinden (u.a. Finch, Okun, Pool, & Ruehlman, 1999; Guerette & Smedema, 2011; Lakey & Cronin, 2008; Lakey & Orehek, 2011; Reinhardt, Boerner, & Horowitz, 2006; Wethington & Kessler, 1986). Die wahrgenommene emotionale Unterstützung erscheint besonders relevant für das subjektive Wohlbefinden, wenn zusätzlich die Funktionen von sozialer Unterstützung berücksichtigt werden (u.a. Bloom, Stewart, Johnston, Banks, & Fobair, 2001; Reinhardt et al., 2006). Im Unterschied dazu sind die Ergebnisse zur Bedeutsamkeit der *erhaltenen Unterstützung* für das Wohlbefinden weniger eindeutig. In einigen Arbeiten zeigen sich positive Zusammenhänge (u.a. Emmons & Colby, 1995; Nelson, 1990; Riemsma et al., 2000), während in einer Vielzahl von Publikationen negative Zusammenhänge zwischen der erhaltenen Unterstützung und dem psychologischen Wohlbefinden berichtet werden (u.a. Bloom et al., 2001; Bolger & Amarel, 2007; Bolger, Zuckerman, & Kessler, 2000; Helgeson, 1993; Reinhardt et al., 2006). Darüber hinaus weisen die Ergebnisse weiterer Untersuchungen

darauf hin, dass sich insbesondere eine *Über- bzw. Unterversorgung mit sozialer Unterstützung* im Hinblick auf das Bedürfnis nach sozialer Unterstützung negativ auf das Wohlbefinden auswirkt (u.a. Brock & Lawrence, 2009; Dehle, Larsen, & Landers, 2001; Joekes, van Elderen, & Schreurs, 2007; Martire, Stephens, Druley & Wojno, 2002; Reynolds & Perrin, 2004).

Weiterhin belegen bisherige Studien Zusammenhänge zwischen sozialer Unterstützung und verschiedenen Strategien der Emotionsregulation, definiert als Prozess, durch den Personen Einfluss darauf nehmen, welche Emotionen sie zu welchem Zeitpunkt empfinden und auf welche Art und Weise sie diese Emotionen wahrnehmen und zum Ausdruck bringen (Gross, 2002; Gross & Thompson, 2007). So bestehen u.a. bedeutsame Beziehungen zwischen verschiedenen Perspektiven der sozialen Unterstützung und der Regulationsstrategie Rumination, die in den Arbeiten von Nolen-Hoeksema (1991) als eine Fokussierung der Aufmerksamkeit auf die negative Stimmung sowie auf mögliche Ursachen der negativen Stimmung und seine Folgen definiert wird. Personen mit einem höherem Ausmaß an depressiver Rumination suchen zum einen eher soziale Unterstützung (Nolen-Hoeksema & Davis, 1999) und zum anderen profitieren sie eher von sozialer Unterstützung (u.a. Flynn, Kecmanovic, & Alloy, 2010; Nolen-Hoeksema & Davis, 1999; Puterman, DeLongis, & Pomak, 2010). Darüber hinaus zeigen Untersuchungen, dass bestimmte Regulationsstrategien wiederum Auswirkungen auf die soziale Unterstützung haben. So gehen beispielsweise die beiden Regulationsstrategien Unterdrückung von Emotionen und Rumination mit einer Verringerung an sozialer Unterstützung (Dahlen & Martin, 2005; Nolen-Hoeksema & Davis, 1999; Srivastava, Tamir, McGonigal, John, & Gross, 2009) und mit einer verringerten Bereitschaft, soziale Unterstützung zu geben (Winkeler, Filipp, & Aymanns, 2006) einher.

1.1.3 Methodische Ansätze zur Untersuchung des Zusammenhangs zwischen sozialer Unterstützung und Befindensregulation

Zusammenfassend belegen bisherige Studien die Bedeutsamkeit sozialer Unterstützung im Rahmen der Befindensregulation. Zur Beantwortung der jeweiligen Fragestellungen dominieren bei der Mehrzahl der oben genannten Arbeiten jedoch retrospektive Auskünfte und globale Einschätzungen (u.a. Bloom et al., 2001; Brock & Lawrence, 2009; Helgeson, 1993; Reinhardt et al., 2006). Diese können beeinflusst sein von kognitiven Schemata, sozialer Erwünschtheit, Retrospektionseffekten, d.h. von Gewichtungen und systematischen Verzerrungen bei retrospektiven Einschätzungen infolge der intensivsten und zuletzt erlebten emotionalen Zustände, oder anderweitigen Verzerrungen (Fahrenberg, Myrtek, Pawlik, &

Perrez, 2007). Im Unterschied dazu gibt es deutlich weniger Studien, die die Rolle der sozialen Unterstützung im Rahmen der Befindensregulation unter alltagsnahen Bedingungen untersuchen (u.a. Bolger et al., 2000; Shrout, Herman, & Bolger, 2006). Allerdings werden in neuerer Zeit zunehmend mehr Arbeiten publiziert, die insbesondere bei der Untersuchung von Auswirkungen von sozialer Unterstützung auf das Wohlbefinden die Methode des ambulanten Assessment verwenden (u.a. Gremore et al., 2011; Shrout et al., 2006; Vella, Kamarck, & Shiffman, 2008; Vranceanu, Gallo, & Bogart, 2009). Der Zusammenhang zwischen sozialer Unterstützung und Befindensregulation—insbesondere Rumination als eine wichtige Form der Emotionsregulation—unter alltagsnahen Bedingungen ist hingegen bislang nur unzureichend untersucht worden. Die vorliegende Dissertation, die die Rolle der sozialen Unterstützung im Rahmen der Befindensregulation im Alltagskontext mithilfe der Methode des ambulanten Assessment untersucht, greift somit ein wesentliches Defizit der bisherigen Unterstützungsforschung auf.

Eine Erfassung mittels des ambulanten Assessment weist gegenüber anderen methodischen Ansätzen bedeutungsvolle Vorzüge auf (Fahrenberg et al., 2007; Scollon, Kim-Prieto, & Diener, 2009). Durch ambulante Assessmentstrategien ist eine verhaltens- und erlebensnahe Erfassung im natürlichen Lebensumfeld der Menschen möglich. Häufig werden dazu tragbare Kleincomputer (Handheld-Computer) eingesetzt. Auf denen können sowohl ereignisbasierte (Probanden werden instruiert, eine Abfrage auszulösen, wenn ein bestimmtes Ereignis aufgetreten ist) als auch zeitlich basierte Erhebungspläne implementiert werden, bei denen die Probanden entweder durch akustische Signale zur Bearbeitung der Items aufgefordert (signalkontingent) oder in festen zeitlichen Intervallen retrospektiv nach relevanten Ereignissen gefragt werden (intervallkontingent) (Bolger, Davis, & Rafaeli, 2003; Scollon et al., 2009). Die Selbstberichte werden so sehr nahe an den Ort und Zeitpunkt des relevanten Geschehens herangetragen. Auf diese Art und Weise können Retrospektionseffekte, die häufig bei globalen Selbstberichte auftreten, sowie Tendenzen der sozialen Erwünschtheit minimiert werden (u.a. Fahrenberg et al., 2007; Hektner, Schmidt, & Csikszentmihalyi, 2007; Stone, Shiffman, & DeVries, 1999). Diese Form der Datenerhebung bietet somit die Möglichkeit, Selbstberichte reliabler und mit höherer ökologischer Validität zu erfassen. Zudem können sowohl situative und interaktionale Einflüsse auf das Befinden, Erleben und Verhalten als auch intraindividuelle Veränderungen über die Zeit hinweg untersucht werden. Darüber hinaus empfiehlt es sich komplexe Konstrukte multimethodal zu erfassen, d.h. neben globalen Selbstberichten, Fremdberichten und Beobachtungsdaten, auch die Methode des ambulanten Assessment heranzuziehen, um das Befinden, Erleben und

Verhalten im natürlichen Lebensumfeld zu untersuchen und so ein ganzheitliches Bild bezüglich eines Konstrukts zu erhalten.

Insbesondere für eine Untersuchung der Rolle der sozialen Unterstützung in der Befindensregulation bietet sich eine Erfassung mittels des ambulanten Assessment an, da soziale Unterstützung als ein Prozess verstanden wird, der zwischen einem Individuum und seiner sozialen Umwelt stattfindet und durch soziale, situative und personale Faktoren beeinflusst wird (Laireiter & Thiele, 1995). Für ein umfassendes Verständnis von Unterstützungsprozessen ist es daher relevant, real ablaufende soziale Interaktionen, das darin gezeigte Verhalten (Interaktions-, Austausch- und Unterstützungsprozesse) und die daraus resultierenden Konsequenzen für das Befinden und die Befindensregulation direkt in der natürlichen Umwelt eines Menschen zu erheben. Neben der sozialen Unterstützung unterliegt auch das momentane Befinden einer Person im Alltag sowohl situativen (z.B. Tätigkeiten, Settings) als auch interaktionalen Einflüssen, so dass es notwendig ist, diese Wechselwirkungen ebenfalls zu berücksichtigen und direkt zu erfassen, um eine hohe ökologische Validität der Befindensmessung zu gewährleisten (Lischetzke & Eid, 2005).

Im Hinblick auf die Untersuchung von Emotionen und Strategien der Befindens- bzw. Emotionsregulation ermöglichen methodische Ansätze des ambulanten Assessment zum einen Emotionen im Kontext der sie auslösenden Ereignisse zu betrachten und zum anderen den Prozess der Emotionsregulation mit seiner zeitlichen Dynamik zu verfolgen und sowohl intra- als auch interindividuelle Einflussfaktoren adäquat und alltagsnah zu untersuchen. Eine Regulationsstrategie, die in den vergangenen Jahren große Aufmerksamkeit erfährt, ist Rumination. Für Rumination ist eine prozessorientierte Erfassung, wie sie durch ambulante Assessmentstrategien gewährleistet werden kann, besonders angeraten, da diese Regulationsstrategie über wiederkehrende Gedanken an eine negative Stimmung sowie über deren mögliche Ursachen und Folgen definiert ist (Moberly & Watkins, 2010; Takano & Tanno, 2011).

Zusammenfassend sprechen sowohl die methodischen Stärken des ambulanten Assessment als auch die theoretische Konzeption von sozialer Unterstützung und Befindensregulation für den Einsatz ambulanter Assessmentstrategien, um die jeweiligen Fragestellungen der drei Studien der vorliegenden Dissertation angemessen und zudem alltagsnah untersuchen zu können. In jeder der drei Studien werden dabei sowohl unterschiedliche Perspektiven der sozialen Unterstützung als auch verschiedene Aspekte der Befindensregulation berücksichtigt, so dass jede Studie einen eigenen inhaltlichen Schwerpunkt bildet.

1.2 Herleitung der Fragestellungen und der Hypothesen

1.2.1 Studie 1: Der Zusammenhang zwischen Diskrepanzen bei der sozialen Unterstützung und dem subjektiven Wohlbefinden

Studien zeigen, dass eine Diskrepanz zwischen gewünschter und erhaltener Unterstützung sich negativ auf das Wohlbefinden auswirkt (u.a. Brock & Lawrence, 2009; Martire et al., 2002; Reynolds & Perrin, 2004). Bislang gibt es jedoch nur wenige Arbeiten, die die Konsequenzen von Über- und Unterversorgung mit sozialer Unterstützung alltagsnah erfassen (u.a. Dehle et al., 2001). Darüber hinaus wurde dieser Zusammenhang vorwiegend in partnerschaftlichen Beziehungen (Brock & Lawrence, 2009; Dehle et al., 2001) bzw. im Hinblick auf chronische Stressoren oder kritische Lebensereignisse (Martire et al., 2002; Reynolds & Perrin, 2004) überprüft. Auch wurde bisher kein direkter Vergleich hinsichtlich der Unterstützungsdimensionen (emotional, informationell und instrumentell) vorgenommen, um zu überprüfen, welche Art der Diskrepanz die bedeutsamsten Auswirkungen auf das Wohlbefinden im Alltag ausübt.

Daher soll in *Studie 1* (Siewert, Antoniw, Kubiak & Weber, 2011) als zentrale Fragestellung untersucht werden, inwieweit sich die wahrgenommene Unterstützung sowie Diskrepanzen bei der sozialen Unterstützung auf das subjektive Wohlbefinden im Alltag von gesunden Studierenden auswirken. Es wird erwartet, dass sich eine Über- bzw. Unterversorgung mit sozialer Unterstützung in ihren Auswirkungen auf das subjektive Wohlbefinden unterscheiden (Brock & Lawrence, 2009). Des Weiteren wird angenommen, dass Diskrepanzen bei der emotionalen Unterstützung verglichen mit der informationellen und instrumentellen Unterstützung die bedeutsameren Auswirkungen auf das subjektive Wohlbefinden haben (Bloom et al., 2001). Darüber hinaus sollen die Diskrepanzen zwischen gewünschter und erhaltener Unterstützung sowie die wahrgenommene Unterstützung hinsichtlich ihrer Auswirkungen auf das subjektive Wohlbefinden erstmalig miteinander verglichen werden.

1.2.2 Studie 2: Der Zusammenhang zwischen Veränderungen bei der wahrgenommenen Unterstützung und der Zielerreichung infolge traurigkeitsbezogener Ruminationsprozesse

Studien zufolge profitieren insbesondere Personen mit einem höheren Ausmaß an depressiver Rumination von sozialer Unterstützung (Nolen-Hoeksema & Davis, 1999; Puterman et al., 2010). Ruminative Prozesse in Reaktion auf die Emotion Traurigkeit und die

Auswirkungen von sozialer Unterstützung auf traurigkeitsassoziierte Rumination wurden bislang jedoch nur unzureichend untersucht, so dass die vorliegende Arbeit ein wesentliches Defizit der bisherigen Unterstützungsforschung aufgreift. In *Studie 2* (Siewert, Kubiak, Jonas & Weber, submitted) wird als zentrale Fragestellung erstmals untersucht, inwieweit Veränderungen in der wahrgenommenen Unterstützung die Erreichung von verständnis- und lösungsfokussierten Zielen beeinflussen, die die Probanden infolge traurigkeitsbezogener Ruminationsprozesse zu erreichen versuchen. In Anlehnung an Arbeiten, denen zufolge soziale Unterstützung für die Bewältigung von Verlustereignissen und Traurigkeit hilfreich ist (Nolen-Hoeksema & Larson, 1999; Maisel & Gable, 2009), wird angenommen, dass die Zielerreichung durch eine wahrgenommene Steigerung in der sozialen Unterstützung begünstigt wird.

Zudem soll überprüft werden, ob eine symptom- bzw. selbstfokussierte Rumination die Beziehung zwischen den Veränderungen in der wahrgenommenen sozialen Unterstützung und dem Ausmaß der Zielerreichung moderiert.

1.2.3 Studie 3: Der Zusammenhang zwischen ärgerassozierter Rumination und dem sozialen Wohlbefinden

Die Auswirkungen von ärgerassozierter Rumination auf physiologische Reaktionen und das subjektive Wohlbefinden sind bereits häufiger untersucht worden (u.a. Glynn, Christenfeld, & Gerrin, 2006; Rusting & Nolen-Hoeksema, 1998; Sukhodolsky, Golub, & Cromwell, 2001). Im Unterschied dazu wurden die sozialen Konsequenzen infolge ärgerbezogener Rumination aus Sicht der betroffenen Person, d.h. die subjektive Einschätzung von interpersonellen Beziehungen hinsichtlich Involviertheit, Zufriedenheit und dem Ausmaß an sozialer Unterstützung, bislang nicht analysiert. Ärger ist jedoch eine Emotion, die vor allem im sozialen Kontext erlebt wird (Averill, 1982), was nahelegt, insbesondere auch die sozialen Auswirkungen von ärgerbezogener Rumination zu untersuchen. Daher besteht die zentrale Fragestellung der *Studie 3* (Siewert, Kubiak, Jonas & Weber, 2011) in der alltagsnahen Untersuchung der sozialen Konsequenzen infolge ärgerassozierter Rumination, um somit einen relevanten Beitrag zur Ruminationsforschung zu leisten. In Anlehnung an Forschungsarbeiten und theoretische Modelle aus der Ruminationsforschung, denen zufolge feindselige Rumination die Tendenz für aggressives Verhalten erhöht (Wilkowski & Robinson, 2008, 2010) und Prozesse des Verzeihens und Vergebens behindert (McCullough, Bono, & Root, 2007), wird erwartet, dass sich eine

rachegefokussierte Rumination im Gegensatz zu einer nicht feindseligen Rumination negativ auf das soziale Wohlbefinden auswirken wird.

Darüber hinaus soll der Einfluss von Ärgerneigung und ärgerassozierter Ruminationsneigung überprüft werden. Es wird angenommen, dass die habituelle Ärgerneigung den Zusammenhang zwischen rachegefokussierter Rumination und dem sozialen Wohlbefinden moderiert (Wilkowski & Robinson, 2008, 2010).

2 Methoden

2.1 Stichprobe

Bei *Studie 1* nahmen 30 weibliche Studierende der Universität Greifswald im Alter von 19 bis 33 Jahren ($M = 24.2$, $SD = 3.99$) teil. Den Teilnehmerinnen wurde über den Zeitraum von sieben Tagen ein tragbarer Kleincomputer mitgegeben und es wurden tägliche Abfragen an drei randomisierten Zeitpunkten zwischen 9 und 19Uhr gestartet.

An *Studie 2* und *Studie 3* nahmen insgesamt 144 Studierende der Universität Greifswald (keine Studierende der Psychologie) teil. Die Probanden wurden randomisiert entweder der Hauptgruppe oder einer Kontrollgruppe zugewiesen. In der Hauptgruppe befanden sich nach Abschluss der Untersuchung 93 Studierende (64.5% Frauen, $M = 23.4$ Jahre, $SD = 2.9$) und in der Kontrollgruppe 51 Studierende (70.6% Frauen, $M = 23.7$ Jahre, $SD = 2.7$). Die Kontrollgruppe diente zur Überprüfung von potentiellen Reaktivitätseffekten infolge der Messwiederholungen. Zur Untersuchung der jeweiligen Fragestellungen wurde den Teilnehmern über den Monitoringzeitraum von 28 Tagen ein tragbarer Kleincomputer mitgegeben, der die Teilnehmer vier Mal täglich zu randomisierten Zeitpunkten zwischen 9 und 21 Uhr befragte.

2.2 Erhebungsinstrumente

2.2.1 *Studie 1: Soziale Unterstützung und subjektives Wohlbefinden*

Vor Beginn des computergestützten ambulanten Monitorings wurden im Rahmen einer Prämonitoringsitzung folgende Konstrukte erhoben: Negative Affektivität (Positive and Negative Affect Schedule; PANAS, Krohne, Egloff, Kohlmann, Tausch, 1996), wahrgenommene Unterstützung (Berliner Social Support-Skalen; BSSS, Schulz & Schwarzer, 2003). Die Probanden erhielten zudem in dieser Sitzung die tragbaren Kleincomputer, es erfolgte eine ausführliche Einführung in die Handhabung und ein „informed consent“ wurde eingeholt.

Die durch das ambulante Monitoring erhobenen Daten beinhalteten (1) den negativen Affekt (PANAS; Krohne et al., 1996), (2) die wahrgenommene Belastung (selbst generiertes Item), (3) die gewünschte Unterstützung (selbst generierte Items) und (4) abschließend die erhaltene Unterstützung (BSSS, Schulz & Schwarzer, 2003).

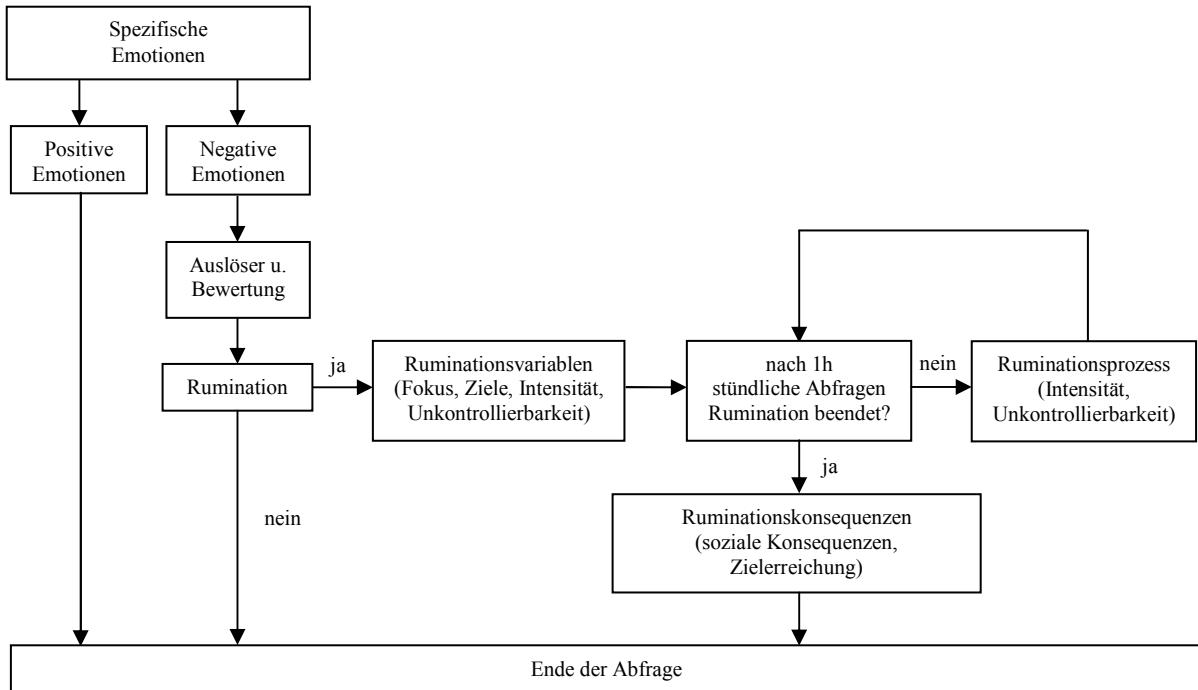
2.2.2 Studie 2 und 3: Soziales Befinden und traurigkeits- bzw. ärgerbezogene Rumination

In der Prämonitoringsitzung wurden die symptom- und die selbstfokussierte Rumination (Response Style Questionnaire (RSQ-D), Kühner, Huffziger, & Nolen-Hoeksema, 2007) erfasst. Diese Skala fand Berücksichtigung in den Analysen zur *Studie 2*. Zudem wurden die habituelle Ärgerneigung (State-Trait-Ärgerausdrucks-Inventar (STAXI), Schwenkmezger, Hodapp, & Spielberger, 1992) und die ärgerassoziierte Ruminationsneigung (Fragebogen zu ärgerbezogenen Reaktionen und Zielen (AERZ), Kubiak, Wiedig-Allison, Zgoriecki, & Weber, 2011) erfasst, die bei den Analysen zur *Studie 3* Anwendung fanden. Die Probanden erhielten zudem in dieser Sitzung die tragbaren Kleincomputer, es erfolgte eine ausführliche Einführung in die Handhabung und ein „informed consent“ wurde eingeholt.

Die im ambulanten Monitoring erhobenen Daten werden in Abbildung 2 wiedergegeben und umfassten die kategoriale Erfassung spezifischer positiver und negativer Emotionen (Freude, Stolz, Begeisterung und Traurigkeit, Ärger, Angst) seit der letzten Abfrage (dichotom: vorhanden vs. nicht vorhanden), wobei sich die Teilnehmer dabei jeweils für die dominierende Emotion entscheiden sollten. *Studie 2* konzentriert sich auf die Analyse traurigkeitsassozierter Episoden, während in *Studie 3* ärgerbezogene Episoden im Fokus der Untersuchung standen. Im Falle einer negativen Emotion wurden die Teilnehmer im Anschluss zu Auslöser, Bewertungsprozessen und dem Ausmaß sowie dem Fokus der Rumination (eigene Person vs. andere Personen vs. Ereignis), zur Intensität, wahrgenommener Unkontrollierbarkeit und zu den ruminationsbezogenen Zielen befragt.

Gaben die Teilnehmer an, dass sie aktuell noch über die auslösende Situation ruminierten, so wurde in stündlichen Anfragen die aktuelle Intensität und wahrgenommene Unkontrollierbarkeit solange erfragt, bis die Teilnehmer angaben, dass die Rumination beendet sei. Nach Beendigung der Rumination wurden die wahrgenommenen sozialen Konsequenzen im Hinblick auf die Häufigkeit, subjektive Involviertheit, die wahrgenommene Qualität von sozialen Interaktionen und die wahrgenommene soziale Unterstützung erfragt. In *Studie 2* wurden bei den Analysen die Veränderungen in der wahrgenommenen Unterstützung berücksichtigt, während in *Studie 3* aus allen vier Variablen ein Index gebildet wurde, der das soziale Wohlbefinden der Personen widerspiegelte.

Abbildung 2: Flussdiagramm für die Studien 2 und 3



2.3 Statistische Analysen

2.3.1 Studie 1: Soziale Unterstützung und subjektives Wohlbefinden

Zur Vorhersage des subjektiven Wohlbefindens wurden entsprechende Strategien der Multilevelanalyse angewandt. Dabei wurden konkurrierende Modelle berechnet, die an Komplexität zunahmen. Mithilfe des Likelihood-Quotienten-Tests wurden jeweils zwei Modelle hinsichtlich ihrer Erklärungskraft miteinander verglichen. Die Diskrepanzwerte wurden ermittelt, indem die mittlere gewünschte von der mittleren erhaltenen Unterstützung subtrahiert wurde, und anschließend als Dummy-Variablen in die Berechnungen eingeführt. Die Auswertung der Daten erfolgte mithilfe der statistischen Software STATA (Version 10; Stata Corporation, College Station, TX, USA).

2.3.2 Studie 2 und Studie 3: Soziales Befinden und traurigkeits- bzw. ärgerbezogene Rumination

Diesen beiden Studien lag ein Multilevel-Gruppen-Design mit zufällig variierenden Regressionskonstanten (Random Intercepts) und zufällig variierenden Steigungskoeffizienten (Random Slopes) zugrunde. In *Studie 2* wurden zur Vorhersage der Zielerreichung jeweils für die verständnis- und die lösungsfokussierten Ziele vergleichende Modelle mit den Prädiktoren wahrgenommene Steigerung bzw. Verringerung in der sozialen Unterstützung gerechnet. Darüber hinaus wurden Moderatoranalysen durchgeführt, um zu überprüfen, ob die symptom-

bzw. selbstfokussierte Rumination den Zusammenhang zwischen den Veränderungen in der wahrgenommenen Unterstützung und der Zielerreichung moderiert.

In *Studie 3* wurden zur Vorhersage der sozialen Konsequenzen infolge ärgerassozierter Rumination Modelle berechnet, die an Komplexität zunahmen. Die konkurrierenden Modelle wurden mithilfe des Likelihood-Quotienten-Tests hinsichtlich ihrer Erklärungskraft miteinander verglichen. Die Auswertung der Daten erfolgte in beiden Studien mithilfe der statistischen Software STATA (Version 11.1; Stata Corporation, College Station, TX, USA).

3 Ergebnisse

Im Folgenden werden die zentralen Ergebnisse der Studien berichtet. Weitere Ergebnisse finden sich in den Publikationen bzw. im Manuskript.

3.1 Studie 1: Soziale Unterstützung und subjektives Wohlbefinden

Die Ergebnisse belegen, dass die wahrgenommene Unterstützung keinen signifikanten Einfluss auf das subjektive Wohlbefinden (negativer Affekt, wahrgenommene Belastung) ausübt. Die Diskrepanzen zwischen gewünschter und erhaltener Unterstützung leisteten im Unterschied dazu einen signifikanten Beitrag zur Vorhersage des Wohlbefindens, wobei insbesondere eine Über- bzw. Unterversorgung mit emotionaler Unterstützung in einem signifikanten Zusammenhang zum Wohlbefinden stand (s. Tabelle 1). Eine Unterversorgung mit emotionaler Unterstützung war mit einem negativen Affekt und der wahrgenommenen Belastung positiv assoziiert, eine Überversorgung mit emotionaler Unterstützung ging mit einer geringeren wahrgenommenen Belastung einher. Eine Unterversorgung mit instrumenteller Unterstützung ging ebenfalls mit einer Erhöhung des negativen Affekts und der wahrgenommenen Belastung einher. Weiterhin zeigte sich, dass auch eine Unterversorgung mit informationeller Unterstützung mit einer Erhöhung der wahrgenommenen Belastung in Zusammenhang stand, während eine Überversorgung mit diesen Unterstützungsarten keine signifikanten Auswirkungen auf das Wohlbefinden hatte.

Tabelle 1. Regressionsmodelle für die Vorhersage des subjektiven Wohlbefindens (negativer Affekt und wahrgenommene Belastung)

	Negativer Affekt		Wahrgenommene Belastung	
	b	SE b	b	SE b
Konstante	0.04	0.03	0.11	0.05
Negative Affektivität	0.20**	0.07	0.38***	0.11
Wahrgenommene soziale Unterstützung	0.01	0.08	0.00	0.14
Wahrgenommene Belastung	0.24***	0.02	-	-
Unterversorgung mit emotionaler Unterstützung	0.12	0.06	0.99***	0.15
Überversorgung mit emotionaler Unterstützung	-0.11***	0.03	-0.41***	0.06

Anmerkung: ** $p < .01$; *** $p < .001$.

3.2 Studie 2: Wahrgenommene Unterstützung und traurigkeitsbezogene Rumination

Den Ergebnissen zufolge war eine wahrgenommene Steigerung in der sozialen Unterstützung signifikant mit der Erreichung lösungsfokussierter Ziele infolge traurigkeitsbezogener Rumination assoziiert, d. h., je größer die wahrgenommene soziale Unterstützung, desto größer das Ausmaß der Zielerreichung bei den lösungsfokussierten Ziele ($b = 0.15$, log likelihood = -152.70, $p < .01$). Im Vergleich dazu bestand kein signifikanter Zusammenhang zwischen einer erhöhten wahrgenommenen Unterstützung und dem Erreichen der verständnisfokussierten Ziele (log likelihood = -149.32, $p = .33$). Eine verringerte wahrgenommene Unterstützung hatte keine Auswirkungen auf die Zielerreichung.

Die Ergebnisse der Moderatoranalysen belegen, dass die symptomfokussierte Rumination den Zusammenhang zwischen der Steigerung in der wahrgenommenen Unterstützung und dem Erreichen der lösungsfokussierten Ziele dahingehend moderierte, dass insbesondere für Personen mit einer höheren Neigung zu symptomfokussierter Rumination ein signifikanter Zusammenhang zwischen einer erhöhten wahrgenommenen Unterstützung und dem Erreichen der lösungsfokussierten Ziele bestand ($b = 0.20$, $p < .01$).

3.3 Studie 3: Ärgerassoziierte Rumination und soziales Wohlbefinden

Dauer, Intensität und die wahrgenommene Unkontrollierbarkeit der ärgerassoziierten Ruminationsprozesse übten keinen signifikanten Einfluss auf das soziale Wohlbefinden aus (log likelihood = -54.47, $p = .58$). Entgegen den Annahmen war eine racheffokussierte Rumination nicht mit einer Verschlechterung des sozialen Wohlbefindens assoziiert ($b = 0.08$, log likelihood = -257.84, $p = .61$). Ärgerneigung und ärgerbezogene Ruminationsneigung hatten ebenfalls keinen signifikanten Einfluss auf eine Verschlechterung des sozialen Wohlbefindens. Weitere Ergebnisse verweisen auf einen signifikanten positiven Zusammenhang zwischen habitueller Ärgerneigung und rachebezogener Rumination ($b = 1.87$, $p < .01$).

Moderatoranalysen mit habitueller Ärgerneigung und ärgerbezogener Ruminationsneigung als mögliche Moderatoren belegen, dass eine habituelle Ärgerneigung den Zusammenhang zwischen racheffokussierter Rumination und dem sozialen Wohlbefinden moderierte (log likelihood = -255.58, $p = .05$). Für Personen mit höheren Werten bei der Ärgerneigung bestand ein signifikanter Zusammenhang zwischen der rachebezogenen Rumination und einer Verringerung des sozialen Wohlbefindens. Für die habituelle ärgerbezogene Ruminationsneigung zeigte sich kein moderierender Einfluss (Tabelle 2).

Ergebnisse

Tabelle 2. Regressions- und Moderationsanalyse bei der Vorhersage einer Verschlechterung des sozialen Wohlbefindens

	<i>b</i>	95% CI
		(oberes – unteres)
Rachefokussierte Zielverfolgung	0.08	(-0.22 – 0.37)
x Ärgerneigung	0.65*	(0.09 – 1.21)
x Ärgerbezogene Ruminationsneigung	0.31	(-0.06 – 0.68)

Anmerkung: * $p < .05$.

4 Diskussion

4.1 Studie 1: Soziale Unterstützung und subjektives Wohlbefinden

Den zentralen Ergebnissen dieser Studie zufolge leisteten die Diskrepanzen zwischen gewünschter und erhaltener Unterstützung einen bedeutsamen Beitrag zur Vorhersage des subjektiven Wohlbefindens. In Übereinstimmung mit früheren Untersuchungen (Bloom et al., 2001; Reinhardt et al., 2006) erwies sich die emotionale Unterstützung als wichtigste Form der sozialen Unterstützung, da eine Unterversorgung mit einer Verschlechterung des Wohlbefindens einherging, während eine Überversorgung mit emotionaler Unterstützung mit einer Verbesserung des subjektiven Wohlbefindens assoziiert war. Demnach legen die vorliegenden Ergebnisse einen linearen Zusammenhang zwischen emotionaler Unterstützung und dem subjektiven Wohlbefinden nahe. Darüber hinaus dokumentieren die Ergebnisse, dass die wahrgenommene Unterstützung keinen signifikanten Einfluss auf das subjektive Wohlbefinden ausübte. Dies steht im Kontrast zu früheren Studien. Mögliche Erklärungen für dieses unerwartete Ergebnis liegen in der Methodik und in der Stichprobe begründet.

Einschränkend muss gesagt werden, dass es sich um eine sehr kleine und ausschließlich weibliche Stichprobe handelte. Darüber hinaus wurden soziale Unterstützung und subjektives Wohlbefinden gleichzeitig erfasst, so dass keine kausalen Zusammenhänge überprüft werden konnten, was die Aussagekraft der Ergebnisse einschränkt. Bei den Angaben zu den Diskrepanzen handelt es sich um eine indirekte Erfassung der Diskrepanz, d.h., die Probanden wurden nicht direkt nach der wahrgenommenen Über- bzw. Unterversorgung mit sozialer Unterstützung befragt. Im Hinblick auf zukünftige Fragestellungen zum Zusammenhang zwischen diskrepanter sozialer Unterstützung und dem Wohlbefinden dürfte es interessant sein, die Gründe für eine fehlende Passung zu berücksichtigen sowie mögliche Faktoren zu untersuchen, die die Diskrepanzwahrnehmung beeinflussen könnten, beispielsweise bestimmte Persönlichkeitseigenschaften wie Ärgerneigung oder Feindseligkeit.

4.2 Studie 2: Wahrgenommene Unterstützung und traurigkeitsbezogene Rumination

Die Ergebnisse dieser Studie zeigen, dass eine wahrgenommene Steigerung in der sozialen Unterstützung positiv assoziiert war mit der Erreichung von ruminationsbezogenen Zielen, die auf eine Bewältigung der traurigkeitsassoziierten Episode fokussierten. Je größer die wahrgenommene Unterstützung durch das soziale Netzwerk, desto eher wurden die lösungsfokussierten Ziele erreicht. Im Unterschied dazu bestand kein signifikanter

Zusammenhang zwischen einer wahrgenommenen Verbesserung in der sozialen Unterstützung und dem Erreichen verständnisfokussierter Ziele. Eine mögliche Erklärung für diese unterschiedlichen Ergebnisse ist, dass Ruminationsprozesse, bei denen eine Erreichung von lösungs- anstatt verständnisfokussierten Zielen im Mittelpunkt steht, vom sozialen Umfeld als angemessenere Bewältigungsstrategie wahrgenommen werden und demzufolge Personen mit diesen ruminationsbezogenen Zielen wahrscheinlich auch eher unterstützen würden. Mit dieser Annahme übereinstimmend zeigt die Unterstützungsforschung, dass aktive Bewältigungsversuche eher unterstützt werden als passive Bewältigungsversuche (Silver, Wortman, & Crofton, 1990; Vollmann, Renner, & Weber, 2007).

Die vorliegenden Ergebnisse unterstützen weiterhin die bisherige Ruminationsforschung (Nolen-Hoeksema & Davis, 1999) dahingehend, dass auch in dieser Studie gezeigt werden konnte, dass insbesondere für Personen mit höheren Ruminationstendenzen eine höhere wahrgenommene Unterstützung mit der Zielerreichung in einem signifikanten Zusammenhang stand.

Folgende Einschränkungen müssen erwähnt werden. Infolge der wiederholten Messungen und den daraus resultierenden Anforderungen an die Probanden haben wir in dieser *Studie 2* wie auch in der *Studie 3* die wesentlichen Variablen lediglich mit einzelnen Items oder einer reduzierten Anzahl an Items erfassen können, so beispielsweise bei der wahrgenommenen Unterstützung. Infolgedessen konnten für die soziale Unterstützung nicht die verschiedenen Funktionen (emotionale, informationelle und instrumentelle Unterstützung) berücksichtigt werden. Zukünftige Studien würden davon profitieren, wenn sie diese Variablen bei der Überprüfung des Zusammenhangs zwischen sozialer Unterstützung und der ruminationsbezogenen Zielerreichung berücksichtigen würden. Es bedarf demnach weiterer Studien, die den Befund der vorliegenden Arbeit bestätigen und darüber hinaus traurigkeitsassoziierte Ruminationsprozesse und den Einfluss von sozialer Unterstützung detaillierter untersuchen.

4.3 Studie 3: Ärgerassoziierte Rumination und soziales Wohlbefinden

Den Ergebnissen dieser Studie zufolge führte ärgerassoziierte Rumination–insbesondere das Verfolgen rachegefokussierter Ziele–nicht per se zu einer Verschlechterung des sozialen Wohlbefindens. Es zeigte sich, dass eine habituelle Ärgerneigung den Zusammenhang zwischen der Verfolgung rachebezogener Ziele und dem sozialen Wohlbefinden moderierte. Demnach stellte eine ärgerbezogene Rumination insbesondere für Personen mit einer hohen

Ärgerneigung im Hinblick auf die sozialen Folgen eine kritische Form der Ärgerregulation dar. Dieser moderierende Effekt lässt sich möglicherweise dadurch erklären, dass feindselige kognitive Verarbeitungsmechanismen, wie sie für die Emotion Ärger charakteristisch sind, zu einer generalisierten negativen Wahrnehmung der sozialen Interaktionen führen (Wilkowski & Robinson, 2008, 2010).

Bei dieser Studie müssen mehrere Einschränkungen erwähnt werden. Studien, die eine Vielzahl an Messwiederholungen beinhalten, unterliegen der Gefahr von Reaktivitätseffekten. Das Ausmaß an Reaktivität wurde in den *Studien 2 und 3* mithilfe einer Kontrollgruppe überprüft. Die vergleichenden Analysen haben jedoch auf keine signifikanten Unterschiede im Antwortverhalten zwischen den beiden Gruppen hingedeutet. Eine weitere Beschränkung bezieht sich darauf, dass sich die Studie auf das wahrgenommene soziale Wohlbefinden konzentriert. Weitere Arbeiten sind notwendig, um den gefundenen Zusammenhang zu bestätigen und im Hinblick auf das soziale Wohlbefinden weitergehend zu untersuchen, beispielsweise inwieweit wirkt sich eine (rache)fokussierte ärgerassoziierte Rumination auf verschiedene Aspekte der sozialen Unterstützung aus, u.a.. auf das Ausmaß an wahrgenommener Unterstützung, die Diskrepanzwahrnehmung zwischen gewünschter und erhaltener Unterstützung sowie auf die Bereitschaft zum Geben sozialer Unterstützung.

4.4 Fazit

Insgesamt verdeutlichen die Ergebnisse der drei Studien die Relevanz einer prozessorientierten und alltagsnahen Erfassung mittels der Methode des ambulanten Assessment, um so ein umfassendes Bild über die Rolle der sozialen Unterstützung im Rahmen der Befindensregulation zu erhalten. Da es sich bei sozialer Unterstützung um einen dynamischen Prozess handelt, bei dem sowohl Einflüsse der jeweiligen Situation als auch Interaktionen mit dem sozialen Umfeld eine wesentliche Rolle spielen, ist es notwendig, diese Variablen auch im Alltagskontext zu erfassen, gemäß der Aussage „capturing life as it is lived“ (Bolger et al., 2003, p. 579).

Der Zusammenhang zwischen sozialer Unterstützung und Befindensregulation—insbesondere die Beziehung zu ärger- bzw. traurigkeitsassozierter Rumination als wichtige Regulationsstrategien—is bislang nur unzureichend erforscht worden und es gab darüber hinaus bisher keine Studien, die diesen Zusammenhang unter alltagsnahen Bedingungen untersuchten. Somit leisten die Ergebnisse der vorliegenden Studien einen wichtigen Beitrag zur Unterstützungs- sowie Ruminationsforschung. Die Befunde der vorliegenden Arbeit

liefern weitere Evidenz dafür, dass soziale Unterstützung einen wesentlichen Faktor in der Befindensregulation im Alltag, d.h. für das Wohlbefinden und die Emotionsregulation, darstellt. Diskrepanzen zwischen gewünschter und erhaltener Unterstützung beeinflussen signifikant das subjektive Wohlbefinden, eine Steigerung in der wahrgenommenen Unterstützung wirkt sich günstig auf die traurigkeitsassoziierte Rumination aus und ärgerassoziierte Ruminationsprozesse wiederum wirken sich bei Personen mit einer höheren Ärgerneigung negativ auf das soziale Wohlbefinden, u.a. auch der Einschätzung der wahrgenommenen Unterstützung, aus. Weitere Studien sind notwendig, um zum einen die gefundenen Zusammenhänge zu bestätigen und zum anderen detailliertere Erkenntnisse zur Rolle der sozialen Unterstützung im Rahmen der Befindensregulation zu gewinnen. Zukünftige Studien, die die Bedeutung der sozialen Unterstützung für das Wohlbefinden und die Emotionsregulation alltagsnah untersuchen wollen, sollten dabei vor allem die verschiedenen Funktionen und Perspektiven von sozialer Unterstützung stärker als bislang berücksichtigen. Darüber hinaus wäre es im Hinblick auf die Analyse der gewonnenen Daten erkenntnisreich, wenn zukünftige Arbeiten beispielsweise zusätzlich zu den Strategien der Mehrebenenanalyse auch verstärkt Zeitreihenanalysen vornehmen würden, um so detailliert untersuchen zu können, wie sich die Prozesse der sozialen Unterstützung und Befindensregulation im zeitlichen Verlauf betrachtet verändern.

Bei der Darstellung von sozialen Unterstützungsprozessen können die Empfänger-, Geber- und Beobachterperspektive unterschieden werden (Dunkel-Schetter, Blasband, Feinstein & Bennett, 1992), wobei die Studien der vorliegenden Dissertation ausschließlich auf die Empfängerperspektive fokussieren. Da es sich jedoch bei der sozialen Unterstützung um einen Prozess handelt, der zwischen einem Individuum und seiner sozialen Umwelt stattfindet (Laireiter & Thiele, 1995), wird es zukünftig wichtig sein, nicht nur die Empfängerseite zu berücksichtigen, sondern auch die Geberperspektive verstärkt in den Fokus der Betrachtung zu stellen. Mit der zusätzlichen Berücksichtigung der Geberperspektive kann beispielsweise die Dynamik zwischen Unterstützungsempfänger und -geber bei der Befindensregulation untersucht werden. Mögliche Fragestellungen wären in diesem Zusammenhang beispielsweise, wie ein Interaktionspartner die Regulationsstrategien des Partners im Hinblick auf die Funktionalität der Strategien erlebt, inwiefern diese Einschätzungen von denen des Partners abweichen und wie sich die Einschätzungen des Interaktionspartners auf die Wahrnehmung der Person und der Beziehung sowie der Bereitschaft, soziale Unterstützung zu geben, auswirken.

Die Methode des ambulanten Assessment erscheint dabei besonders geeignet für diese Art von Fragestellungen, da so zum einen eine prozessorientierte Erfassung möglich ist, die der theoretischen Konzeption von sozialer Unterstützung und Befindensregulation Rechnung trägt und zum anderen eine verhaltens- und erlebensnahe Untersuchung im natürlichen Umfeld der Probanden erfolgen kann. Es wäre demnach wünschenswert, wenn zukünftige Studien zur Untersuchung des Zusammenhangs von sozialer Unterstützung und Wohlbefinden bzw. Emotionsregulation schwerpunktmäßig ambulante Assessmentstrategien einsetzen würden. Mithilfe dieser Methodik können Retrospektionseffekte, denen globale Selbstberichte häufig unterliegen, und Tendenzen der sozialen Erwünschtheit minimiert werden (Fahrenberg et al., 2007; Hektner et al., 2007). Darüber hinaus sind Akzeptanz und Compliance seitens der Teilnehmer erfahrungsgemäß als hoch, die Belastungen sowie die Reaktivität infolge der Erhebung meistens als relativ gering einzuschätzen. Durch die ständige Weiterentwicklung der technischen Geräte (u.a. Minimalisierung der Geräte, Verbesserung der Bedienbarkeit, leistungsfähigere Prozessoren, größere Speichermöglichkeiten) erschließen sich zudem immer wieder neue Möglichkeiten für eine Erfassung im Alltagskontext. So ist es beispielsweise mittlerweile möglich Bilder oder Videos als Items zu präsentieren und neben Ratingskalen als klassisches Antwortformat können inzwischen Antworten durch den Probanden auch als Sprach- oder Videoaufzeichnungen erfolgen (Reuschenbach & Funke, 2011).

5 Literaturverzeichnis

- Averill, J. R. (1982). *Anger and aggression. An essay on emotion*. New York: Springer.
- Bloom, J. R., Stewart, S. L., Johnston, M., Banks, P., & Fobair, P (2001). Sources of social support and the physical and mental well-being of young women with breast cancer. *Social Science & Medicine*, 53, 1513-1524.
- Bolger, N. & Amarel, D. (2007). Effects of social support and visibility on adjustment to stress: Experimental Evidence. *Journal of Personality and Social Psychology*, 92, 458-475.
- Bolger, N., Davis, A. & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, 54, 579-616.
- Bolger, N., Zuckerman, A., & Kessler, R. C. (2000). Invisible support and adjustment to stress. *Journal of Personality and Social Psychology*, 79, 953-961.
- Brock, R. L. & Lawrence, E. (2009). Too much of a good thing: Underprovision versus overprovision of partner support. *Journal of Family Psychology*, 23, 181-192.
- Dahlen, E. R. & Martin, R. C. (2005). The experience, expression, and control of anger in perceived social support. *Personality and Individual Differences*, 39, 391-401.
- Dehle, C., Larsen, D., & Landers, J. E. (2001). Social support in marriage. *The American Journal of Family Therapy*, 29, 307-324.
- Dunkel-Schetter, C. & Bennett, T. (1990). Differentiating the cognitive and behavioral aspects of social support. In B. R. Sarason, I. G. Sarason & G. R. Pierce (Eds.), *Social support: An interactional view* (pp. 267-296). New York: John Wiley.
- Dunkel-Schetter, C., Blasband, D. E., Feinstein, L. G., & Bennett, T. (1992). Elements of supportive interactions: When are attempts to help effective? In S. Spacapan & S. Oskamp (Eds.), *Helping and being helped* (pp. 83-114). Thousand Oaks, CA, US: Sage.
- Emmons, R. A. & Colby, P. M. (1995). Emotional conflict and well-being: Relation to perceived availability, daily utilization, and observer reports of social support. *Journal of Personality and Social Psychology*, 68, 947-959.
- Fahrenberg, J., Myrtek, M., Pawlik, K., & Perrez, M. (2007). Ambulantes Assessment: Verhalten im Alltagskontext erfassen. Eine verhaltenswissenschaftliche Herausforderung an die Psychologie. *Psychologische Rundschau*, 58, 12-23.
- Finch, J. F., Okun, M. A., Pool, G. J., & Ruehlman, L. S. (1999). A comparison of the influence of conflictual and supportive social interactions on psychological distress. *Journal of Personality*, 67, 581-621.

- Flynn, M., Kecmanovic, J., & Alloy, L. B. (2010). An examination of integrated cognitive-interpersonal vulnerability to depression. The role of rumination, perceived social support, and interpersonal stress generation. *Cognitive Therapy and Research*, 34, 456-466.
- Glynn, L. M., Christenfeld, N., & Gerrin, W. (2002). The role of rumination in recovery from reactivity: Cardiovascular consequences of emotional states. *Psychosomatic Medicine*, 64, 714-726.
- Gremore, T. M., Baucom, D. H., Porter, L. S., Kirby, J. S., Atkins, D. C., & Keefe, F. J. (2011). Stress buffering effects of daily spousal support on women's daily emotional and physical experiences in the context of breast cancer concerns. *Health Psychology*, 30, 20-30.
- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, 39, 281-291.
- Gross, J. J. & Thompson, R. A. (2007). Emotion regulation. Conceptual foundations. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 3-24). New York: Guilford Press.
- Guerette, A. R. & Smedema, S. M. (2011). The relationship of perceived social support with well-being in adults with visual impairments. *Journal of Visual Impairment & Blindness*, 105, 425-439.
- Hektner, J. M., Schmidt, J. A., & Csikszentmihalyi, M. (2007). *Experience sampling method: Measuring the quality of everyday life*. Los Angeles, CA: SAGE.
- Helgeson, V. S. (1993). Two important distinctions in social support: Kind of support and perceived versus received. *Journal of Applied Social Psychology*, 23, 825-845.
- Helgeson, V. S. (2003). Social support and the quality of life. *Quality of Life Research*, 12, 25-31.
- Joekes, K., van Elderen, T., Schreurs, K. (2007). Self-efficacy and overprotection: Are related to quality of life, psychological well-being and self-management in cardiac patients. *Journal of Health Behavior*, 12, 4-16.
- Knoll, N. & Kienle, R. (2007). Fragebogenverfahren zur Messung verschiedener Komponenten sozialer Unterstützung: ein Überblick. *Zeitschrift für Medizinische Psychologie*, 16, 57-71.
- Krohne, H. W., Egloff, B., Kohlmann, C.-W., & Tausch, A. (1996). Untersuchungen mit einer deutschen Version der „Positive and Negative Affect Schedule“. *Diagnostica*, 42, 139-156.

- Kubiak, T., Wiedig-Allison, M., Zgoriecki, S., & Weber, H. (2011). Habitual goals and strategies in anger regulation. Psychometric Evaluation of the Anger-related reactions and goals inventory (ARGI). *Journal of Individual Differences*, 32, 1-13.
- Kühner, C., Huffziger, S., & Nolen-Hoeksema, S. (2007). *Response Style Questionnaire – Deutsche Version (RSQ-D)*. Göttingen: Hogrefe.
- Laireiter, A. & Thiele, C. (1995). Psychologische Soziodiagnostik: Tagebuchverfahren zur Erfassung sozialer Beziehungen, sozialer Interaktionen und Sozialer Unterstützung. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 16, 125-151.
- Lakey, B. & Cronin, A. (2008). Low social support and major depression: Research, theory, and methodological issues. In S. Keith & D. J. A. Dozois (Eds.), *Risk factors in depression* (pp. 385-408). San Diego, US: Elsevier.
- Lakey, B. & Orehek, E. (2011). Relational regulation theory: A new approach to explain the link between perceived social support and mental health. *Psychological Review*, 118, 482-495.
- Lischetzke T. & Eid, M. (2005). Wohlbefinden. In H. Weber & T. Rammsayer (Hrsg.), *Handbuch der Persönlichkeitspsychologie und Differentiellen Psychologie* (S. 413-422). Göttingen: Hogrefe.
- Maisel, N. C. & Gable, S. L. (2009). The paradox of received social support. The importance of responsiveness. *Psychological Science*, 20, 928-932.
- Martire, L. M., Stephens, M. A. P., Druley, J. A., & Wojno, W. C. (2002). Negative reactions to received spousal care: Predictors and consequences of miscarried support. *Health Psychology*, 21, 167-176.
- McCullough, M. E., Bono, G., & Root, L. M. (2007). Rumination, emotion, and forgiveness: Three longitudinal studies. *Journal of Personality and Social Psychology*, 92, 490-505.
- Moberly, N. J. & Watkins, E. R. (2010). Negative affect and ruminative self-focus during everyday goal pursuit. *Cognition and Emotion*, 24, 729-739.
- Nelson, G. (1990). Women's life strains, social support, coping, and positive and negative affect: Cross-sectional and longitudinal tests of the two-factor theory of emotional well-being. *Journal of Community Psychology*, 18, 239-263.
- Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology*, 100, 569-582.
- Nolen-Hoeksema, S. & Davis, C. G. (1999). "Thanks for sharing that": Ruminators and their social support networks. *Journal of Personality and Social Psychology*, 77, 801-814.

- Nolen-Hoeksema, S. & Larson, J. (1999). *Coping with loss*. Mahwah, NJ, US: Lawrence Erlbaum.
- Puterman, E., DeLongis, A., & Pomaki, G. (2010). Protecting us from ourselves: Social support as a buffer of trait and state rumination. *Journal of Social and Clinical Psychology*, 29, 797-820.
- Reinhardt, J. P., Boerner, K., & Horowitz, A. (2006). Good to have but not to use: Differential impact of perceived and received support on well-being. *Journal of Social and Personal Relationships*, 23, 117-129.
- Reuschenbach, B. & Funke, J. (2011). Ambulantes Assessment. In L. Hornke, M. Amelang, & M. Kersting, (Hrsg.), *Leistungs-, Intelligenz- und Verhaltensdiagnostik* (= Enzyklopädie der Psychologie, Themenbereich B, Serie II, Band 3) (S. 528-594). Göttingen: Hogrefe.
- Reynolds, J. S. & Perrin, N. A. (2004). Mismatches in social support and psychosocial adjustment to breast cancer. *Health Psychology*, 23, 425-430.
- Riemsma, R. P., Taal, E., Wiegman, O., Rasker, J. J., Bruyn, G. A. W., & Van Paassen, H. C. (2000). Problematic and positive support in relation to depression in people with rheumatoid arthritis. *Journal of Health Psychology*, 5, 221-230.
- Rusting, C. L. & Nolen-Hoeksema, S. (1998). Regulating responses to anger: Effects of rumination and distraction on angry mood. *Journal of Personality & Social Psychology*, 74, 790-803.
- Sarason, I. G., Sarason, B. R., & Shearin, E. N. (1986). Social support as an individual difference variable: Its stability, origins, and relational aspects. *Journal of Personality and Social Psychology*, 50, 845-855.
- Schulz, U. & Schwarzer, R. (2003). Soziale Unterstützung bei der Krankheitsbewältigung: Die Berliner Social Support-Skalen. *Diagnostica*, 49, 73-82.
- Schwarzer, R. (2004). *Psychologie des Gesundheitsverhaltens: Einführung in die Gesundheitspsychologie*. Göttingen: Hogrefe.
- Schwenkmezger, P., Hodapp, V., & Spielberger, C. D. (1992). *Das State-Trait-Ärgerausdrucks-Inventar (STAXI)*. Bern: Huber.
- Scollon, C. N., Kim-Prieto, C., & Diener, E. (2009). Experience sampling: Promises and pitfalls, Strengths and Weakness. In E. Diener (Ed.), *Assessing well-being: The collected works of Ed Diener*. Social Indicators Research Series, Volume 39 (pp. 157-180). Dordrecht: Springer.

- Shrout, P. E., Herman, C. M., & Bolger, N. (2006). The costs and benefits of practical and emotional support on adjustment: A daily diary study of couples experiencing acute stress. *Personal Relationships*, 13, 115-134.
- Silver, R. C., Wortman, C. B., & Crofton, C. (1990). The role of coping in support provision: The self-presentational dilemma of victims of life crisis. In I. G. Sarason, B. R. Sarason, & G. R. Pierce (Eds.), *Social support: An interactional view* (pp. 397-426). New York: John Wiley.
- Srivastava, S., Tamir, M., McGonigal, K. M., John, O. P., & Gross, J. J. (2009). The social costs of emotional suppression: A prospective study of the transition to college. *Journal of Personality and Social Psychology*, 96, 883-897.
- Stone, A. A., Shiffman, S. S., DeVries, M. W. (1999). Ecological momentary assessment. In. D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 26-39). New York: Sage.
- Sukhodolsky, D. G., Golub, A., & Cromwell, E. N. (2001). Development and validation of the anger rumination scale. *Personality and Individual Differences*, 31, 689-700.
- Takano, K. & Tanno, Y. (2011). Diurnal variation in rumination. *Emotion*, 11, 1046-1058.
- Vella, E. J., Kamarck, T. W., & Shiffman, S. (2008). Hostility moderates the effects of social support and intimacy on blood pressure in daily social interactions. *Health Psychology*, 27 (Suppl), S155-S162.
- Vollmann, M., Renner, B., & Weber, H. (2007). Optimism and social support: The providers' perspective. *Journal of Positive Psychology*, 2, 205-215.
- Vranceanu, A.-M., Gallo, L. C., & Bogart, L. M. (2009). Depressive symptoms and momentary affect: The role of social interaction variables. *Depression and Anxiety*, 26, 464-470.
- Wethington, E. & Kessler, R. C. (1986). Perceived support, received support, and adjustment to stressful life events. *Journal of Health and Social Behavior*, 27, 78-89.
- Wilkowski, B. M. & Robinson, M. D. (2008). The cognitive basis of trait anger and reactive aggression. An integrative analysis. *Personality and Social Psychology Review*, 12, 3-21.
- Wilkowski, B. M. & Robinson, M. D. (2010). The anatomy of anger: An integrative cognitive model of trait anger and reactive aggression. *Journal of Personality*, 78, 9-38.
- Winkeler, M., Filipp, S.-H., & Aymanns, P. (2006). Direct and indirect strategies of mobilization as determinants of social support provided for cancer patients. *Journal of Applied Social Psychology*, 36, 248-267.

6 Anhang

Anhang A **Studie 1:**

Siewert, K., Antoniw, K., Kubiak, T. & Weber, H. (2011). The more the better? The relationship between mismatches in social support and subjective well-being in daily life. *Journal of Health Psychology, 16*, 621-631.

Anhang B **Studie 2:**

Siewert, K., Kubiak, T., Jonas, C., & Weber, H. (2012). *The impact of perceived social support on sadness-associated rumination*. Manuscript submitted for publication.

Anhang C **Studie 3:**

Siewert, K., Kubiak, T., Jonas, C. & Weber, H. (2011). Trait anger moderates the impact of anger-associated rumination on social well-being. *Personality and Individual Differences, 51*, 769-774.

Anhang D Erklärung bei Gemeinschaftsarbeiten

Studie 1

Siewert, K., Antoniw, K., Kubiak, T. & Weber, H. (2011).

The more the better? The relationship between mismatches in social support and subjective
well-being in daily life.

Journal of Health Psychology, 16, 621-631.

The More the Better? The Relationship Between Mismatches in Social Support and
Subjective Well-Being in Daily Life

Kerstin Siewert*

Katja Antoniw

Thomas Kubiak

Hannelore Weber

Institute of Psychology, University of Greifswald, Franz-Mehring-Str. 47,
D-17487 Greifswald, Germany

*Corresponding author: Kerstin Siewert, Institute of Psychology, University of Greifswald,
Franz-Mehring-Str. 47, D-17487 Greifswald, Germany, Email: siewert@uni-greifswald.de

The final, definitive version of this paper has been published in Journal of Health Psychology,
16(4), May 2011 by SAGE Publications Ltd./ SAGE Publications, Inc., All rights reserved.

The online version of this article can be found at: <http://hpq.sagepub.com/content/16/4/621>

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

Abstract

In this study, we examined the relationship between discrepancies between desired and received support and subjective well-being, as indicated by negative affect and perceived stress, in daily life. Participants were 30 undergraduates who were equipped with hand-held computers for 7 days. Results showed that underprovision of support predicted lower well-being, whereas overprovision was related to higher well-being, suggesting a linear relationship. Emotional support proved to be more influential than practical and informational support. In contrast to previous research, perceived social support turned out to be unrelated to well-being in daily life.

Keywords: discrepancies between desired and received support, subjective well-being, negative affect, perceived stress, daily experience sampling

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

The More the Better? The Relationship Between Mismatches in Social Support and Subjective Well-Being in Daily Life

Research during the last three decades has well documented that social support is one of the most important psychosocial factors influencing physical health outcomes (e.g., O'Donovan & Hughes, 2008; Schwarzer & Leppin, 1991; Uchino, 2004; Vandervoort, 1999), health-related behavior (e.g., Anderson, Winett, & Wojcik, 2007; Anderson, Wojcik, Winett, & Williams, 2006; Steptoe, Wardle, Pollard, & Canaan, 1996), and psychological well-being (e.g., Cohen & Wills, 1985; Helgeson, 2003; Kafetsios & Sideridis, 2006; Vandervoort, 1999; Winefield, Winefield, & Tiggemann, 1992).

Especially, the perceived availability of social support—in particular emotional support—has generally been found to be positively associated with subjective well-being (e.g., Bloom, Stewart, Johnston, Banks, & Fobair, 2001; Emmons & Colby, 1995; Helgeson, 2003; Kettmann & Altmaier, 2008; Nelson, 1990; Reinhardt, Boerner, & Horowitz, 2006). Furthermore, positive relations with well-being have been observed also for satisfaction with social support (e.g., Hann et al., 2002; Hann, Oxman, Ahles, Furstenberg, & Stuke, 1995; Krause, Liang, & Yatomi, 1989; Sheng, Huyhn-Nhu, & Perry, 2010).

However, findings for support that was actually received, as indicated by recipients' accounts of support they noted as coming from significant others, have been more inconsistent. Some studies have shown positive associations between received support and subjective well-being (Abbey, Abramis, & Caplan, 1985; Emmons & Colby, 1995; Nelson, 1990; Pakenham, Chiu, Burnsall, & Cannon, 2007), whereas in other studies, nonsignificant or negative relations have been found (Bolger, Zuckerman, & Kessler, 2001; Reinhardt et al., 2006; Revenson, Schiaffino, Majerovitz, & Gibofsky, 1991). Moreover, the association between received support and well-being has been found to vary with the type of support. For instance, positive associations have been reported for *emotional* support (Kleiboer, Kuijer,

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

Hox, Jongen, Frequin, & Bensing, 2007; Reinhardt et al., 2006), but negative relations for *practical* support (Lettner, Soelva, & Baumann, 1996; Reinhardt et al., 2006).

The present study focused on the discrepancy between support that is desired and support that is received. This discrepancy has previously been found to be a factor that influences subjective well-being. Research on the mismatch between the support people want to receive and the support they actually receive has suggested that well-being is generally higher when people feel supported in the way they want to be. For example, discrepancies between desired and received support were associated with poorer psychosocial adjustment in women with breast cancer (Reynolds & Perrin, 2004), with lower well-being in older women with osteoarthritis (Martire, Stephens, Druley, & Wojno, 2002), and with an increase in depressive symptoms and stress in married couples (Brock & Lawrence, 2008, 2009; Dehle, Larsen, & Landers, 2001; Jookees, van Elderen, & Schreurs, 2007).

The Present Research

The present study was guided by three major aims. First, we wanted to examine the extent to which subjective well-being, as indicated by negative affect and perceived stress, can be predicted by the (mis)match between desired and received support. Based on previous research, we expected subjective well-being to be generally higher when social support that is provided is congruent with the amount and type of support people want to receive (Burkert, Knoll, & Gralla, 2006; Coyne, Wortman, & Lehman, 1988; Cutrona & Russell, 1990; Rafaeli & Gleason, 2009; Reynolds & Perrin, 2004; Wills & Fegan, 2001). Moreover, since emotional support proved to be the most important type of social support with respect to well-being (Bloom et al., 2001; Helgeson, 2003), we expected mismatches in emotional support to be more predictive of well-being than mismatches in practical and informational support. In addition, based on recent findings from a study by Brock and Lawrence (2009), we anticipated that increases in overprovision (receiving more support than is desired) and underprovision of support (receiving less support than is desired) would differ in their impact

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

on well-being. In the Brock and Lawrence study, married couples generally reported more underprovision than overprovision of support, yet overprovision was generally more strongly associated with lower marital satisfaction than underprovision. However, the results were different for wives and husbands and varied to some extent with the type of social support.

The second aim of the present research was to investigate social support as it is experienced in everyday life, using a daily experience sampling or an ambulatory assessment approach (Fahrenberg & Myrtek, 2001; Fahrenberg, Myrtek, Pawlik, & Perrez, 2007; Shiffman, Stone, & Hufford, 2008). Participants were asked to report desired and received social support as well as subjective well-being (negative affect and perceived stress) for a period of 1 week, three times a day. Such an in-field assessment offers the possibility of monitoring processes of wanting and receiving social support close to the time of the actual experience, reducing retrospective biases that likely compromise generalized reports of support. Despite their methodological merits, studies that have examined social support processes with ambulatory assessment methods are rare (e.g., Gleason, Iida, Shrout, & Bolger, 2008; Harlow & Cantor, 1995; Kubiak, Jonas, & Weber, 2010; Perrez, Schoebi, & Wilhelm, 2000). To the best of our knowledge, this is the first study to investigate the impact of mismatches between desired and received support on subjective well-being based on daily experience sampling.

Finally, we wanted to compare the influence of mismatches between desired and received support on well-being with that of the perceived availability of social support. In previous research, both factors have been found to be associated with well-being, but their respective influence on well-being has not been directly compared. Previous studies using global measures of perceived support were not able to consistently show the expected buffer effects on stress. It has been argued that matching support with the actual features of the stressful situation and/or with the needs of the recipients would be more effective, since optimal matching would reflect that the *specific* needs of support have been met (Cutrona &

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

Russell, 1990; Rafaeli & Gleason, 2009). Accordingly, in the present study, we focused on the subjective needs of the recipients, and we expected mismatches in daily social support to be more predictive of well-being than globally perceived availability of support.

Method

Participants

Participants were 30 female undergraduate psychology students whose mean age was 24.2 years ($SD = 3.99$, range 19 – 33). They were recruited by flyers distributed at the Institute of Psychology at the University of Greifswald. All participants gave their informed consent. Participants received experimental credit in exchange for their voluntary participation.

Premonitoring Session

Prior to the experience-sampling period, we assessed (a) trait negative affect, in order to control for the impact of Negative Affectivity (NA) on well-being, and (b) the perceived availability of social support at the trait level.

Negative Affect. Negative Affectivity was measured with the trait version of the 10-item Negative Affect scale of the *Positive and Negative Affect Schedule* (PANAS; Watson, Clark, & Tellegen, 1988; German adaptation Krohne, Egloff, Kohlmann, & Tausch, 1996). In the trait version of the PANAS, participants are asked to rate how they feel in general. Responses are made on a 5-point scale from 1 (*not at all*) to 5 (*extremely*). The reliability of the scale was good, with a Cronbach's alpha of .86.

Social Support. Perceived availability of social support was assessed by a subscale of the *Berlin Social Support Scales* (BSSS; Schulz & Schwarzer, 2003). This subscale contains eight items that reflect the general expectance of available support (e.g., “There is always someone there for me when I need comforting”). Responses are made on a 4-point scale from 1 (*not true at all*) to 4 (*exactly true*). Cronbach's alpha was .83, indicating satisfactory reliability.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

Experience Sampling

Participants were equipped with hand-held computers (Palm Tungsten E2, Palm Inc., Sunnyvale, CA, USA) for 7 days. The experience sampling procedure was implemented using IzyBuilder software (IzyData Ltd., Fribourg, CH; Ebner-Priemer & Kubiak, 2007). We used a signal-contingent sampling scheme that prompted participants acoustically three times per day to complete the questionnaire implemented on the hand-held computer (prompts were randomly distributed between 9 a.m. and 7 p.m.).

In each data entry trial, the following variables were assessed to measure subjective well-being (state negative affect and perceived stress) and desired and received social support:

State negative affect. State negative affect was measured by the state version of the 10-item Negative Affect scale of the PANAS (Watson et al., 1988; German adaptation Krohne et al., 1996). Responses were made on a 5-point scale from 1 (*not at all*) to 5 (*extremely*).

Perceived stress. Perceived stress was measured with a single item that referred to the time since the last data entry (“I have felt stressed since the last data entry”).

Desired support. Desired emotional (“I needed someone to comfort me”), informational (“I needed someone to advise me”), and practical support (“I needed someone to help me with the things I need to do”) were each assessed with a single item.

Received support. Received emotional (e.g., “Someone showed me that he/she loves and accepts me”), informational (e.g., “Someone helped me find something positive in my situation”), and practical support (e.g., “Someone took care of things I could not manage on my own”) since the last data entry, were measured with an 11-item subscale of the BSSS (Schulz & Schwarzer, 2003).

Responses for perceived stress, desired support, and received support were made on a 4-point scale from 1 (*not true at all*) to 4 (*exactly true*). For some variables, we used single-

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

item measures to take into account the time-consuming assessment procedure caused by the frequent measurements.

Data Analysis

Diary data share cross-sectional time-series characteristics containing a multilevel structure, in our case measurements nested within participants (Bolger, Davis, & Rafaeli, 2003). Mean scores were computed for desired support and received support for each of the three types of support: emotional, informational, and practical support. To analyze the impact of discrepancies between desired and received social support, discrepancy scores were computed by subtracting the mean desired support from the mean received support for each type of support. Negative values indicate underprovision of social support (receiving less support than desired), whereas positive values reflect overprovision of social support (receiving more support than desired).

We computed separate hierarchical multilevel analyses for the prediction of state negative affect and perceived stress. For the prediction of state negative affect, we computed four competing models of increasing complexity with STATA software using maximum likelihood estimation (version 10, Stata Corp., College Station, TX, USA): the constant-only empty model without any additional predictors; a second model examining the impact of traits (NA and perceived availability of social support); a third model including perceived stress, and a fourth model including additionally the discrepancies in emotional, informational, or practical support.

For the prediction of perceived stress, we computed three competing models: the constant-only empty model; a second model examining the impact of the traits (NA and perceived availability of social support), and a third model including the mismatches in emotional, informational, or practical support.

In the corresponding models, discrepancies in emotional, informational, and practical support were included as dummy variables. Variables were mean-centered prior to entering

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

them into the models. The models were compared with regard to their model fit using log rank tests, and with regard to the variance explained computed by comparing the reduction of between-person variance across models (cf. Nezlek, 2007).

Results

A total of 574 out of a possible 630 recordings were obtained, resulting in a drop-out rate of 9% and an average of 19.1 ($SD = 1.6$) recordings per participant. These data indicated a rather high compliance with the protocol. Moreover, compliance did not deteriorate over time: a logistic regression analysis with time as the predictor and compliance as the criterion (measured dichotomously “participant followed signal” vs. “participant did not”), yielded a nonsignificant result with a log likelihood of -182.89 , $\chi^2(1) = 1.51$, ns.

Relationships Between Negative Affect, Perceived Stress, and Desired and Received Social Support

As can be seen in Table 1, the first-order correlations between the variables revealed positive associations between NA, state negative affect, and perceived stress with desired and received support, indicating that lower levels of well-being were related to higher levels of support. Perceived availability of support appeared to be unrelated to subjective well-being and desired and received social support. The two indicators of subjective well-being (state negative affect and perceived stress) were highly correlated. The average score of perceived support obtained for the present sample was comparable to that reported by Schulz and Schwarzer (2003); similarly, the average scores observed for NA and state negative affect were comparable to those reported by Krohne et al. (1996).

Under- and Overprovision of Social Support

The discrepancy scores indicated that matching was the most frequent type (emotional support: 59.2%, informational support: 69.4%; practical support: 75.4%), followed by overprovision (emotional support: 37.1%; informational support: 11.1%; practical support:

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

14.3%). Underprovision appeared most frequently for informational support (19.5%), and practical support (10.3%), but was rare for emotional support (3.7%).

Prediction of Negative Affect

To test our hypotheses, we computed random-intercept mixed regression models. Starting with the empty model, the between-person variance amounted to $\psi = 0.05$ and the within-person variance to $\theta = 0.11$. Thus, 68.8% of the total variance was within-person variance, leaving ample room for further predictors. In the next step, a model including the trait variables (NA and perceived availability of social support) was examined. This model showed a better model fit than the empty model with a log rank compared to the empty model, $\chi^2(2) = 12.67, p < .01, \psi = 0.03, \theta = 0.10$. The findings indicated that NA significantly predicted state negative affect ($b = 0.28, p < .001$), whereas perceived availability of social support did not significantly contribute to the prediction of state negative affect ($b = -0.10, p = .34$). Entering perceived stress led to a superior model using the log rank test versus the previous model, $\chi^2(1) = 214.15, p < .001, \psi = 0.02, \theta = 0.07$. Perceived stress was positively related with state negative affect ($b = 0.27, p < .001$).

In the three final models, discrepancies in social support were added. Adding discrepancy in *emotional* support (see Table 2) resulted in a better fit than provided by the preceding models, $\chi^2(2) = 19.55, p < .001, \psi = 0.02, \theta = 0.07$. Thus, underprovision of emotional support tended to be positively associated with negative state affect, whereas overprovision was negatively related with negative affect. This final model explained $(0.05 - 0.02)/0.05 = 60\%$ more process variance than the empty model and $(0.03 - 0.02)/0.03 = 33.3\%$ more process variance than the stress model. Further analyses showed that underprovision in *practical* support was also positively associated with negative affect ($b = 0.20, p < .05$), whereas overprovision was not ($b = 0.02, p = 0.57$). Discrepancies in *informational* support were not significantly associated with negative affect.

Prediction of Perceived Stress

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

Starting with the empty model, the between-person variance amounted to $\psi = 0.10$, and the within-person variance to $\theta = 0.46$. Thus, 82.1% of the total variance was within-person variance, leaving ample room for the inclusion of additional predictors. In the next step, a model including NA and perceived availability of social support was computed, leading to a better fit than the empty model with a log rank test compared to the empty model, $\chi^2(2) = 12.10, p < .01, \psi = 0.06, \theta = 0.46$: The higher the NA score, the higher the extent to which stress was reported ($b = 0.36, p < .01$). By contrast, perceived availability of social support did not significantly predict perceived stress ($b = -0.24, p = 0.12$).

Including discrepancies in *emotional* support in the final model (see Table 3) resulted in a better fit, $\chi^2(2) = 92.60, p < .001, \psi = 0.05, \theta = 0.39$. Positive associations were found between underprovision of emotional support and perceived stress ($b = 0.99, p < .001$), whereas overprovision of emotional support was negatively related with perceived stress ($b = -0.41, p < .001$). This final model explained $(0.10-0.05)/0.10 = 50\%$ more process variance than the empty model and $(0.06-0.05)/0.06 = 16.7\%$ more process variance than the trait model.

Underprovision of *informational* support was also positively associated with perceived stress ($b = 0.43, p < .001$), whereas overprovision of informational support was not ($b = -0.05, p = 0.60$). The model including the discrepancies in informational support resulted in a better fit to the data than the preceding model, $\chi^2(2) = 34.48, p < .001, \psi = 0.06, \theta = 0.43$, and explained $(0.10-0.06)/0.10 = 40\%$ more process variance than the empty model, but no more process variance than the trait model.

Underprovision in *practical* support also contributed significantly to the prediction of perceived stress: The higher the underprovision of practical support, the higher the perceived stress ($b = 0.33, p < .01$). Overprovision of practical support was not significantly associated with perceived stress ($b = -0.07, p = 0.40$). This final model, including the discrepancies in practical support, showed also a better fit to the data than the trait model, $\chi^2(2) = 12.89, p <$

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

.01, $\psi = 0.06$, $\theta = 0.45$, and explained $(0.10 - 0.06)/0.10 = 40\%$ more process variance than the empty model, but no more variance than the trait model.

Discussion

The major aim of the present study was to examine the relationship between (mis)matches between desired and received social support and subjective well-being. More specifically, we wanted to examine the ways in which underprovision and overprovision of emotional, informational, and practical support were related to subjective well-being, as indicated by negative affect and perceived stress. A major strength of the present study was that we used an ambulatory assessment method to capture daily experiences of needing and receiving social support. This method allowed us to obtain data that reflected the association between social support and well-being in everyday life, enhancing the ecological validity of our findings.

The study revealed two major findings. A first set of findings concerns the nature of the relationship between the two types of mismatches in social support (underprovision and overprovision) and well-being. Here it turned out that underprovision of social support was generally associated with lower well-being, confirming previous studies (e.g., Brock & Lawrence, 2009). Also in line with previous research, emotional support appeared to be generally more relevant to subjective well-being than informational and practical support (e.g., Bloom et al., 2001; Reinhardt, et al., 2006). Thus, our findings that were obtained by a daily experience sampling approach once more underscore that deficits in social support (as subjectively perceived) are detrimental to subjective well-being.

However, while consistent with previous research with respect to the role of support underprovision, the present findings differ from prior studies in two notable aspects. First, in our study, overprovision of emotional support was positively related with higher well-being (in addition to a negative relation between underprovision and subjective well-being). These findings indicate a linear relationship between receipt of emotional support and well-being.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

This is in contrast to a study by Reynolds and Perrin (2004) in which overprovision of support (that is, received but unwanted support) was *negatively* associated with psychosocial adjustment in women with breast cancer. One possible explanation for the diverging findings are differences in the methods used. Unlike in our study, the participants in the Reynolds and Perrin (2004) study were directly asked what support persons do (from a list of potentially supportive acts) and whether they wanted them to do it. Moreover, these ratings were made for the supporting person's behavior in general, whereas our study focused on momentary judgments of support wanted and support received. Another possible explanation for the positive relationship between overprovision of support and subjective well-being is that the present study focused on presumably healthy students coping with everyday stressors rather than on persons faced with severe demands.

A second way in which the present findings deviate from previous research is that in our study, overprovision of informational and practical support was unrelated with well-being (again, in addition to underprovision of these two types of support being associated with lower subjective well-being). This differs from previous studies, in which receipt of practical support was associated with *lower* well-being (Lettner et al., 1996; Martire et al., 2002; Reinhardt et al., 2006). One possible explanation of these discrepant findings is that previous studies had focused on patients with chronic disease or on older persons who depend on practical support, and who are unlikely to return the support they are provided with (e.g., Reinhardt et al., 2006). Receiving practical support without returning it turned out to be associated with lower levels of subjective well-being, especially with higher feelings of guilt and responsibility (Kleiboer, Kuijer, Hox, Schreurs, & Bensing, 2006). Given that the participants in the present study were healthy undergraduates who were likely able to return practical support, for them, provision of support would not implicate the problems associated with a lack of positive reciprocity.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

The second major finding of the present study was that perceived availability of social support proved to be unrelated to subjective well-being, which is in clear contrast to previous studies (Emmons & Colby, 1995; Nelson, 1990; Reinhardt et al., 2006). Mismatches in what amount and type of support is momentarily needed and what is provided appear to be more predictive of daily fluctuations in well-being than global perceptions of available support (Cutrona & Russell, 1990; see Rafaeli & Gleason, 2009, for a review). One possible explanation of this rather unexpected finding is provided by the in-field assessment approach used in the present study. This approach provides the possibility of obtaining data that reflect exchanges of social support very close to real-time, thus reducing retrospective biases typically implied in global self-reports (Furr, 2009; Hektner, Schmidt, & Csikszentmihalyi, 2007), such as the global perception of available support.

Another possible explanation for the nonsignificant relation between perceived availability of social support and subjective well-being is that the undergraduates participating in the present study reported only moderate stress, whereas previous studies typically focused on persons confronted with severe stressors (e.g., Nelson, 1990; Reinhardt et al., 2006; for an exception, see Emmons & Colby, 1995). For those persons, general expectations of available support may be more relevant for well-being than for students coping with everyday stressors because they may buffer against the negative effects of severe stress. Therefore, to readdress the role of global perceptions of social support, further studies are needed to examine whether the present findings can be replicated for persons facing severe demands, when using a daily experience approach. Moreover, future studies would profit from including measures of relationship-specific perceptions of availability of support rather than the unspecific, global measure of perceived support used in the present study. Relationship-specific expectations of available support may be more grounded in support experiences and therefore more likely to predict discrepancies in desired and received support and their relationship with subjective well-being.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

Limitations

Three major limitations of the present study have to be acknowledged in addition to those already mentioned. First, the sample size of 30 participants was rather small (and restricted to females), which was mainly due to the ambulatory assessment approach, which is time-consuming and requires a high degree of commitment by the participants. Second, in each data entry trial, well-being and support were assessed simultaneously, which makes causal statements about the impact of mismatches on well-being impossible. Finally, a third limitation of the present study is that it did not address the reasons for the discrepancies between wanted and received support. For instance, discrepancies may be caused on the one hand by deficits in the helping system such as a momentary lack of availability of the support persons who are needed or wanted, or on the other hand by personal deficiencies to clearly communicate one's needs for support (Reynolds & Perrin, 2004). To specify possible causes for mismatches in support would be a promising line of future research focusing on daily support experiences.

In conclusion, the present study indicates that underprovision of social support is detrimental to subjective well-being, whereas overprovision of support, in particular emotional support, furthers well-being. While these findings suggest a linear relationship between emotional support and well-being (implying the more the better) rather than the curvilinear relationship that was found in prior studies, further research is needed to examine whether these findings can be extended to the relationship between support and well-being in times of severe stress. Moreover, reflecting perceived exchanges of social support in everyday life, mismatches in support were predictive of subjective well-being, whereas (global) perceived availability of support was not. While these findings may partly be explained by sample characteristics (healthy students typically coping with everyday stressors), the more striking implication of the present findings is that by examining daily support experiences, the relationship between social support and well-being becomes more complex.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

References

- Abbey, A., Abramis, D. J. & Caplan, R. D. (1985). Effects of different sources of social support and social conflict on emotional well-being. *Basic and Applied Social Psychology, 6*, 111-129.
- Anderson, E. S., Winett, R. A., & Wojcik, J. R. (2007). Self-regulation, self-efficacy, outcome expectations, and social support: Social cognitive theory and nutrition behavior. *Annals of Behavioral Medicine, 34*, 304-312.
- Anderson, E. S., Wojcik, J. R., Winett, R. A., & Williams, D. M. (2006). Social-cognitive determinants of physical activity: The influence of social support, self-efficacy, outcome expectations, and self-regulation among participants in a church-based health promotion. *Health Psychology, 25*, 510-520.
- Bloom, J. R., Stewart, S. L., Johnston, M., Banks, P. & Fobair, P. (2001). Sources of support and the physical and mental well-being of young women with breast cancer. *Social Science & Medicine, 53*, 1513-1524.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psycholgy, 54*, 579-616.
- Bolger, N., Zuckerman, A., & Kessler, R. C. (2000). Invisible support and adjustment to stress. *Journal of Personality and Social Psychology, 79*, 953-961.
- Brock, R. L. & Lawrence, E. (2008). A Longitudinal investigation of stress spillover in marriage: Does spousal support adequacy buffer the effects? *Journal of Family Psychology, 22*, 11-20.
- Brock, R. L. & Lawrence, E. (2009). Too much of a good thing: Underprovision versus overprovision of partner support. *Journal of Family Psychology, 23*, 181-192.
- Burkert, S., Knoll, N., & Gralla, O. (2006). Social support and stress in prostatectomy patients and their spouses. In P. Buchwald (Ed.), *Stress and anxiety – Application to health*,

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

community, work place, and education (pp.36-51). Cambridge, UK: Cambridge Scholar Press.

Cohen, S. & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis.

Psychological Bulletin, 98, 310-357.

Coyne, J. C., Wortman, C. B., & Lehman, D. R. (1988). The other side of social support:

Emotional overinvolvement and miscarried help. In B. G. Gottlieb (Ed.), *Marshaling social support: Formats, processes, and effects* (pp. 305-330). Newbury Park, CA: Sage.

Cutrona, C. E. & Russell, D. W. (1990). Type of social support and specific stress: Toward a theory of optimal matching. In B. R. Sarason, I. G. Sarason & G. R. Pierce (Eds.), *Social support: An interactional view* (pp. 319-366). New York: Wiley.

Dehle, C., Larsen, D. & Landers, J. E. (2001). Social support in marriage. *The American Journal of Family Therapy, 29*, 307-324.

Ebner-Priemer, U. & Kubiak, T. (2007). Ambulatory monitoring of psychophysiological and psychological data – A review on hardware and software solutions. *European Journal of Psychological Assessment, 23*, 214-226.

Emmons, R. A. & Colby, P. M. (1995). Emotional conflict and well-being: Relation to perceived availability, daily utilization, and observer reports of social support. *Journal of Personality and Social Psychology, 68*, 947-959.

Fahrenberg, J. & Myrtek, M. (2001). *Progress in ambulatory assessment*. Seattle, WA: Hogrefe & Huber.

Fahrenberg, J., Myrtek, M., Pawlik, K., & Perrez, M. (2007). Ambulatory assessment – Monitoring behavior in daily life settings. A behavioural-scientific challenge for psychology. *European Journal of Psychological Assessment, 23*, 206-213.

Furr, M. R. (2009). Personality psychology as a truly behavioural science. *European Journal of Personality, 23*, 369-401.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

- Gleason, M. E. J., Iida, M., Shrout, P. E., & Bolger, N. (2008). Receiving support as a mixed blessing: Evidence for a dual effects of social support on psychological outcomes. *Journal of Personality and Social Psychology, 94*, 824-838.
- Hann, D., Baker, F., Denniston, M., Gesme, D., Reding, D., Flynn, T., Kennedy, J., & Kieltyka, R. L. (2002). The influence of social support on depressive symptoms in cancer patients: Age and gender differences. *Journal of Psychosomatic Research, 52*, 279-283.
- Hann, D. M., Oxman, T. E., Ahles, T. A., Furstenberg, C. T., & Stuke, T. A. (1995). Social support adequacy and depression in older patients with metastatic cancer. *Psychology Oncology, 4*, 213-221.
- Harlow, R. E. & Cantor, N. (1995). To whom do people turn when things go poorly? Task orientation and functional social contacts. *Journal of Personality and Social Psychology, 69*, 329-340.
- Hektner, J. M., Schmidt, J. A., & Csikszentmihalyi, M. (2007). *Experience sampling method: Measuring the quality of everyday life*. Thousand Oaks, CA: Sage.
- Helgeson, V. S. (2003). Social support and quality of life. *Quality of Life Research, 12*, 25-31.
- Joekes, K., van Elderen, T., & Schreurs, K. (2007). Self-efficacy and overprotection are related to quality of life, psychological well-being, and self-management in cardiac patients. *Journal of Health Psychology, 12*, 4-16.
- Kafetsios, K. & Sideridis, G. D. (2006). Attachment, social support, and well-being in young and older adults. *Journal of Health Psychology, 11*, 863-876.
- Kettmann, J. D. J. & Altmaier, E. M. (2008). Social support and depression among bone marrow transplant patients. *Journal of Health Psychology, 13*, 39-46.
- Kleiboer, A. M., Kuijer, R. G., Hox, J. J., Jongen, P. J. H., Frequin, S. T. F. M., & Bensing, J. M. (2007). Daily negative interactions and mood among patients and partners dealing

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

- with multiple sclerosis (MS). The moderating effects of emotional support. *Social Science & Medicine*, 64, 389-400.
- Kleiboer, A. M., Kuijer, R. G., Hox, J. J., Schreurs, K. M. G., & Bensing, J. M. (2006). Receiving and providing support in couples dealing with multiple sclerosis: A diary study using an equity perspective. *Personal Relationships*, 13, 485-501.
- Krause, N., Liang, J. & Yatomi, N. (1989). Satisfaction with social support and depressive symptoms: A panel analysis. *Psychology & Aging*, 4, 88-97.
- Krohne, H. W., Egloff, B., Kohlmann, C.-W. & Tausch, A. (1996). Untersuchungen mit einer deutschen Version der „Positive and Negative Affect Schedule“ (PANAS) [Studies with the German adaptation of the Positive and Negative Affect Schedule]. *Diagnostica*, 42, 139-156.
- Kubiak, T., Jonas, C., & Weber, H. (2010). *Optimism and perceived social support – An experience sampling study*. Manuscript in preparation.
- Lettner, K., Soelva, M. & Baumann, U. (1996). Die Bedeutung positiver und negativer Aspekte sozialer Beziehungen für das Wohlbefinden [The significance of positive and negative aspects of social relationships for subjective well-being]. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 17, 170-186.
- Martire, L. M., Stephens, M. A. P., Druley, J. A. & Wojno, W. C. (2002). Negative reactions to received spousal care: Predictors and consequences of miscarried support. *Health Psychology*, 21, 167-176.
- Nelson, G. (1990). Women's life strains, social support, coping, and positive and negative affect: Cross-sectional and longitudinal tests of the two-factor theory of emotional well-being. *Journal of Community Psychology*, 18, 239-263.
- Nezlek, J.B. (2007). A multilevel framework for understanding relationships among traits, states, situations, and behaviours. *European Journal of Personality*, 21, 789-810.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

- O'Donovan, A. & Hughes, B. M. (2008). Access to social support in life and in the laboratory: Combined impact on cardiovascular reactivity to stress and state anxiety. *Journal of Health Psychology, 13*, 1147-1156.
- Pakenham, K. I., Chiu, J., Bursnall, S., & Cannon, T. (2007). Relations between social support, appraisal and coping, and both positive and negative outcomes in young carers. *Journal of Health Psychology, 12*, 89-102.
- Perrez, M., Schoebi, D., & Wilhelm, P. (2000). How to assess social regulation of stress and emotions in daily family life? A computer-assisted family self-monitoring system (FASEM-C). *Clinical Psychology and Psychotherapy, 7*, 326-339.
- Rafaeli, E. & Gleason, M. E. J. (2009). Skilled support within intimate relationships. *Journal of Family Theory & Review, 1*, 20-37.
- Reinhardt, J. P., Boerner, K. & Horowitz, A. (2006). Good to have but not to use: Differential impact of perceived and received support on well-being. *Journal of Social and Personal Relationships, 23*, 117-129.
- Revenson, T. A., Schiaffino, K. M., Majerovitz, S. D., & Gibofsky, A. (1991). Social support as a double-edged sword: The relation of positive and problematic support to depression among rheumatoid arthritis patients. *Social Science & Medicine, 33*, 807-813.
- Reynolds, J. S. & Perrin, N. A. (2004). Mismatches in social support and psychosocial adjustment to breast cancer. *Health Psychology, 23*, 425-430.
- Schulz, U. & Schwarzer, R. (2003). Soziale Unterstützung bei der Krankheitsbewältigung: Die Berliner Social Support Skalen (BSSS) [Social support in coping with illness: The Berlin Social Support Scales]. *Diagnostica, 49*, 73-82.
- Schwarzer, R. & Leppin, A. (1991). Social support and health: A theoretical and empirical overview. *Journal of Social and Personal Relationships, 8*, 99-127.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

- Sheng, X., Huyhn-Nhu, L., & Perry, D. (2010). Perceived satisfaction with social support and depressive symptoms in perinatal Latinas. *Journal of Transcultural Nursing, 21*, 35-44.
- Shiffman, S., Stone, A. A., & Hufford, M. A. (2008). Ecological momentary assessment. *Annual Review of Clinical Psychology, 4*, 1-32.
- Steptoe, A., Wardle, J., Pollard, T. M., & Canaan, L. (1996). Stress, social support, and health-related behavior: A study of smoking, alcohol consumption, and physical exercise. *Journal of Psychosomatic Research, 41*, 171-180.
- Uchino, B. (2004). *Social support and physical health: Understanding the health consequences of relationships*. New Haven, CT, US: Yale University Press.
- Vandervoort, D. (1999). Quality of social support in mental and physical health. *Current Psychology, 18*, 205-222.
- Watson, D., Clark, L. A. & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070.
- Wills, T. A. & Fegan, M. F. (2001). Social networks and social support. In A. S. Baum, T. A. Revenson & J. E. Singer (Eds.), *Handbook of health psychology* (pp. 209-234). Mahwah, NJ: Lawrence Erlbaum Associates.
- Winefield, H. R., Winefield, A. H., & Tiggeman, M. (1992). Social support and psychological well-being in young adults: The Multi-Dimensional Support Scale. *Journal of Personality Assessment, 58*, 198-210.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

Table 1

Means, Standard Deviations (SD), and Intercorrelations Among the Variables

Measure	1	2	3	4	5	6	7	8	9	10	M	SD
1. NA	-	0.57**	0.53**	0.19	0.46*	0.37*	0.41*	0.23	0.37*	0.20	1.68	0.45
2. State negative affect		-	0.76***	-0.27	0.67***	0.41*	0.54**	0.49**	0.34	0.33	1.28	0.24
3. Perceived Stress			-	-0.35	0.85***	0.44*	0.66***	0.57***	0.55**	0.42*	1.45	0.35
4. Perceived Support				-	-0.14	0.28	0.21	0.06	0.07	0.33	3.73	0.36
5. Desired emotional support					-	0.67***	0.77***	0.72***	0.67***	0.66***	1.41	0.46
6. Received emotional support						-	0.68***	0.74***	0.62***	0.85***	2.00	0.54
7. Desired informational support							-	0.76***	0.77***	0.78***	1.60	0.47
8. Received informational support								-	0.68***	0.82***	1.43	0.53
9. Desired practical support									-	0.81***	1.59	0.51
10. Received practical support										-	1.67	0.44

Note. N = 30. NA = Negative Affectivity. *p < .05, **p < .01, ***p < 0.01.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

Table 2

Random-Intercept Mixed Regression for Prediction of Negative Affect (574 observations, N = 30): Final Model with Discrepancies in Emotional Support

	<i>b</i>	S.E. <i>b</i>
Constant	0.04	0.03
Negative affectivity	0.20**	0.07
Perceived social support	0.01	0.08
Perceived stress	0.24***	0.02
Underprovision of emotional support	0.12	0.06
Overprovision of emotional support	-0.11***	0.03

p < .01. *p < .001.

DISCREPANCIES IN SOCIAL SUPPORT AND SUBJECTIVE WELL-BEING

Table 3

Random-Intercept Mixed Regression for Prediction of Perceived Stress (574 Observations, N = 30): Final Model with Discrepancies in Emotional Support

	<i>b</i>	S.E. <i>b</i>
Constant	0.11	0.05
Negative affectivity	0.38***	0.11
Perceived social support	0.00	0.14
Underprovision of emotional support	0.99***	0.15
Overprovision of emotional support	-0.41***	0.06

***p < .001.

Studie 2

Siewert, K., Kubiak, T., Jonas, C., & Weber, H. (2012).

The impact of perceived social support on sadness-associated rumination.

Manuscript submitted for publication.

The Impact of Perceived Social Support on Sadness-Associated Rumination

Kerstin Siewert^a

Thomas Kubiak^b

Cornelia Jonas^a

Hannelore Weber^a

^a Institute of Psychology, University of Greifswald, Franz-Mehring-Str. 47, D-17487,

Germany

^b Institute of Psychology, University of Mainz, Binger Str. 14-16, D-55099 Mainz, Germany

Author Note

This research was supported by a grant from the German Research Foundation (DFG KU 2465/1-1).

Correspondence concerning this article should be addressed to Kerstin Siewert,
Institute fuer Psychologie, Universitaet Greifswald, Franz-Mehring-Str. 47, D-17487
Greifswald, Germany. E-mail: siewert@uni-greifswald.de. Tel.: 0049 - (0)3834 - 863773.
Fax: 0049 - (0)3834 - 863763.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

Abstract

In this study with $N = 93$ student participants, we employed a daily process approach to investigate sadness-associated rumination in daily life. Specifically, we examined whether the attainment of coping-related goals that people intend to achieve with their sadness-associated rumination were influenced by changes in perceived social support. Moreover, we investigated the impact of ruminative process variables and trait depressive rumination on goal pursuit and attainment and perceived social support. Perceived improvement in social support was positively related to the attainment of solution-focused goals, but not to understanding-focused goals, suggesting that social support is particularly associated with a functional ruminative style. Symptom-focused trait rumination moderated the relation between perceived social support and goal attainment, indicating a buffering effect for those higher in depressive trait rumination.

Keywords: sadness, rumination, social support, goal attainment, daily experience study

PERCEIVED SOCIAL SUPPORT AND RUMINATION

The Impact of Perceived Social Support on Sadness-Associated Rumination

Introduction

According to emotion theories, sadness arises as a response to the experience of loss, which can come in different forms such as losses in relationships, physical health or functioning, self-esteem, or goals that cannot be attained. The experience of sadness is assumed to be characterized by low coping potential (Roseman, Antoniou, & Jose, 1996; Scherer, 1997; Smith & Lazarus, 1993) and the tendency for inaction, apathy, and withdrawal (Frijda, 1986; Roseman, Wiest, & Swartz, 1994). These characteristics appear to predispose the experience of sadness for a heightened attention to inner experiences and reflections about changes in goals and plans caused by the loss (Bonanno, Goorin, & Coifman, 2008; Lazarus, 1991).

Transitory episodic reflections in response to sadness may turn into a prolonged state of dysphoric or depressive mood when people engage in depressive rumination. Depressive rumination has been conceptualized as repetitively and passively focusing on symptoms of distress, its possible causes, and consequences in response to the experience of feeling sad, blue, or depressed (Nolen-Hoeksema, 1991). A large body of research has documented the adverse effects of depressive rumination on well-being and social functioning (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Thomsen, 2006; Watkins, 2008).

However, whereas engaging in depressive rumination has been shown to be largely dysfunctional, rumination in response to sadness does not imply maladaptive behavior *per se*. Rather, the functionality of rumination appears to vary with the style and content of rumination, such as self-immersed versus self-distanced or abstract versus concrete ruminative thinking (Ayduk & Kross, 2008; Nolen-Hoeksema et al., 2008; Segerstrom, Stanton, Alden, & Shortridge, 2003; Watkins, 2008). In our present approach, we presume that another characteristic of functional rumination is its instrumentality in attaining coping-related goals that are associated with rumination, such as the desire to understand the meaning

PERCEIVED SOCIAL SUPPORT AND RUMINATION

of an event, gain insight, or solve problems (Martin & Tesser, 1996; Nolen-Hoeksema et al., 2008; Segerstrom et al., 2003). Rumination in response to sadness, for example, may be motivated by the goal of working through the loss in trying to get a better understanding of the meaning of what had happened and coming to terms with the eliciting event (Bonanno et al., 2008). Achieving these goals through rumination would indicate that rumination may be a functional response to the experience of loss.

In the present research, we employed a daily experience approach to examine (a) processes of rumination in response to sadness experienced in everyday life and (b) the extent to which subjective goals associated with rumination were perceived as attained when rumination stops. It has been argued that subjective goals can be contrasted with nonconscious motives that imply dysfunctional rather than adaptive aims, for example, to justify passivity in the case of depressive rumination (Nolen-Hoeksema et al., 2008). Whereas we do not dispute the possibility that rumination serves different functions than those reflected in subjective goals, we were nevertheless interested in the coping-related goals people report pursuing with their rumination and the factors that might influence their attainment.

We were particularly interested in whether the perception of being socially supported would facilitate goal attainment. Seen from a functional view of emotions, sadness is assumed to arouse sympathy in others and to motivate people to seek comfort and social connectedness (e.g., Bonanno et al., 2008; Roseman et al., 1994). In previous research, social support has been found to ameliorate the experience of loss and sadness (e.g., Nolen-Hoeksema & Larson, 1999; Maisel & Gable, 2009). Given its beneficial impact on adjusting to loss, we expected that feeling supported would also help people to attain coping-related goals associated with rumination.

Present Research

PERCEIVED SOCIAL SUPPORT AND RUMINATION

The present study was guided by two major aims. First, we examined goals people report pursuing with their rumination in response to the experience of sadness. We should note that we focused on the goals that people intend to achieve with their ruminative thinking. In this, we differed from the approach taken by Martin and Tesser (1996), who argued that rumination may help people attend to and solve discrepancies between one's current situation and goals not yet achieved (Moberly & Watkins, 2010). We distinguished between two types of goals that we expected to be major aims in coping with sadness, *understanding-focused goals* that reflect the desire to get a better understanding of the meaning of the event, and *solution-focused goals* that reflect the desire to come to terms with the event. We were particularly interested in whether the attainment of these rumination-associated goals was facilitated by feeling socially supported. Specifically, we assumed that goal attainment would be associated with a perceived improvement in social support during the process of rumination.

The second major aim of the present study was to investigate sadness-associated rumination as it occurs naturally in everyday life, using a daily experience approach. In-field assessments offer the possibility of monitoring rumination close to the time of the actual experience, reducing retrospective biases that likely compromise generalized self-reports (e.g., Moberly & Watkins, 2010; Schwarz, 2007). Most importantly, the daily experience approach allowed us to assess process variables, including the duration, intensity, and perceived uncontrollability of rumination, and to explore whether they were related to perceived social support and goal attainment.

In addition, we examined the possible influence of trait depressive rumination on characteristics of the rumination process, perceived social support, and the relation between social support and goal attainment. Based on studies showing that persons high in depressive rumination were more likely to benefit from social support than those low in rumination (Nolen-Hoeksema & Davis, 1999; Puterman, DeLongis, & Pomaki, 2010), we expected trait

PERCEIVED SOCIAL SUPPORT AND RUMINATION

depressive rumination to moderate the relation between social support and goal attainment, replicating the previously documented buffer effect for persons with higher rumination levels.

Method

Participants

Participants were 144 nonpsychology students from the University of Greifswald, Germany. The participants were recruited on campus by leaflets. All participants gave their informed consent. We employed a pay-per-trial compensation scheme in order to enhance compliance with the sampling protocol, that is, in addition to a fixed amount, the participants received credits for each signal they responded to. Participants received 40 Euro for taking part in the study if they completed all trials.

Out of the 144 participants, 93 participants were randomly assigned to the main group who completed the whole procedure, whereas the other 51 participants were assigned to a reactivity control group. In the reactivity control group, a slightly modified version of the diary protocol was used to check for potential reactivity effects caused by the repeated feedback loops assessing rumination in the main group (see below). The 93 participants (64.5% women) in the main group had a mean age of 23.4 years ($SD = 2.9$); the reactivity check group was comparable, with a mean age of 23.7 years ($SD = 2.7$), and 70.6% were women.

Electronic Diary Protocol

Participants were equipped with iPaq 114 series hand-held computers (Hewlett-Packard Corporation, Palo Alto, CA, USA) for 28 consecutive days. The experience sampling procedure was implemented using mQuest data entry software (cluetec GmbH, Karlsruhe, Germany). The participants were prompted acoustically four times per day to complete the questionnaire implemented on the hand-held computer (random time windows of +/- 30 min around 9 a.m., 1 p.m., 5 p.m., and 9 p.m.). For every trial, the participants were prompted to complete questions on their experience of specific emotions since the last trial.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

Emotions. As part of a larger project (see Siewert, Jonas, Kubiak, & Weber, 2011 for a related study) participants were asked to report whether they had experienced (assessed dichotomously: yes/no) six emotions: *anger, fear, sadness, joy, pride, and enthusiasm*. The negative emotions were of primary interest (sadness in the present study), but we included positive emotions to compare prevalence. In cases in which more than one emotion was present, the participants were instructed to check the predominant emotion. Next, for descriptive purposes, the participants were asked to indicate whether the emotion had been elicited by *myself, someone else, or an event*, using a forced-choice-format. We also included measures of the cognitive appraisals of the instigating situation; the two sadness-related items reflected irrevocable loss, which is assumed to be the core relational theme of sadness (Smith & Lazarus, 1993); the items were “I have lost something important to me and I can’t do anything about it” and “I feel that something is irrevocably lost” (rated on a 9-point Likert scale from 1 = *not at all* to 9 = *extremely*). Aggregate reliabilities were computed as suggested by Snijders and Bosker (1999) and were $\lambda > .97$ for both items.

Rumination. Participants were then asked to report the extent to which they ruminated (“I cannot forget the situation and keep thinking about it”) on a 9-point Likert scale from 1 (*totally disagree*) to 9 (*totally agree*). If participants indicated that they ruminated (score > 1), they were asked to report its *content* focus (myself vs. someone else vs. eliciting event), the *intensity* of their rumination, and its *perceived uncontrollability* (“How difficult is it for you to stop thinking about the event”) on 9-point Likert scales ranging from 1 to 9, with higher scores reflecting higher intensity and perceived uncontrollability ($\lambda > .97$ for both items).

Next, participants were asked to check the extent to which they pursued each of four sadness-related *goals* with their rumination, including two *understanding-focused goals* that revolve around understanding the meaning of the emotion-eliciting event and one’s feelings (e.g., “I keep thinking about the situation because I want to understand what happened”) and

PERCEIVED SOCIAL SUPPORT AND RUMINATION

two *solution-focused goals* (e.g., “... I want to find out how I can come to terms with this situation”). Each goal was assessed by a single item, scaled from 1 (*totally disagree*) to 9 (*totally agree*; all aggregate reliabilities $\lambda > .98$). For further analyses, we computed two goal composites, averaging (a) the two understanding-focused goals pursued and (b) the two solution-focused goals pursued.

Rumination loops. If rumination was reported as an initial reaction, questions concerning the intensity and perceived uncontrollability of rumination were repeatedly presented on an hourly basis. This loop was repeated until the participants indicated that they had stopped ruminating. When rumination was terminated, participants were asked about (a) changes in perceived social support since the last trial and (b) perceived goal attainment.

(a) *Changes in perceived social support* were measured by a single item (“How supportive have other people been compared to other times?”). Responses were made on a 9-point Likert scale from 1 (*rather less*) to 9 (*rather more*) with values < 5 indicating perceived impairment and values > 5 indicating perceived improvement in social support.

(b) *Goal attainment* was measured by asking—for each of the four goals presented at the initial measurement—whether this goal had been achieved through rumination (scaled dichotomously: attained vs. not attained). We computed two goal-attainment indices, based on those personally relevant goals that had been endorsed at the initial measurement with scores > 5 on the 1 to 9 scale, indicating (a) the understanding-focused goals attained and (b) the solution-focused goals attained.

As long as participants were engaged in a rumination loop, the signal-contingent sampling scheme was interrupted, that is, participants were not prompted acoustically while ruminating. In this way, we wanted to prevent overlapping trials and loops; at the same time, however, this reduced reports of possible new rumination episodes.

Trait Rumination

PERCEIVED SOCIAL SUPPORT AND RUMINATION

Prior to the experience-sampling period, we assessed depressive rumination using two scales from the German adaptation (Kuehner, Huffziger, & Nolen-Hoeksema, 2007) of the Response Style Questionnaire (RSQ; Nolen-Hoeksema & Morrow, 1991). These two scales capture two facets of depressive rumination: self-focused and symptom-focused rumination (7 and 8 items, respectively). Responses are made on a 4-point scale from 1 (*almost never*) to 4 (*almost always*); Cronbach's $\alpha = .78$ (self-focused) and $\alpha = .84$ (symptom-focused).

Post-Monitoring Session

After 4 weeks, the participants handed in the electronic diaries and were offered individual feedback of the results. Moreover, the participants completed a feedback questionnaire (Fahrenberg, Brügner, Foerster, & Käppler, 1999) on the perceived intrusiveness of the diary method and the representativeness of their daily lives during the diary-keeping period.

Data Analysis

Diary data share cross-sectional time-series characteristics containing a multilevel structure; in our case, we used a two-level model with measurements (Level 1) nested within participants (Level 2; Nezlek, 2007). We computed two-level linear-mixed regression models in which we introduced random intercepts and random slopes for the predictors. Thus, we allowed the intercepts and slopes to vary across participants. Variables were mean centered prior to entering them into the models. Where appropriate—that is, when within-person variance was not of primary interest (e.g., for descriptive analyses)—we also employed analyses of mean aggregated data by participants. For all analyses, we used STATA statistical software (version 11.1; Stata Corporation, College Station, TX, USA) with its mixed modeling tool (xtmixed).

Results

Participants completed 68.4 out of a possible 112 signal-contingent trials on average ($SD = 14.1$) indicating satisfactory compliance. A logit mixed regression yielded a

PERCEIVED SOCIAL SUPPORT AND RUMINATION

nonsignificant effect (compliance predicted by time), log likelihood = -500.6, $p = .76$, indicating that compliance did not deteriorate significantly during the course of the 4-week monitoring. Similarly, the occurrence of rumination did not change significantly over time, log likelihood = -73.0, $p = .45$.

In order to check for potential reactivity effects of the repeated assessments in cases in which rumination occurred, the main group was compared with the reactivity control group for whom the repeated assessment loop had been omitted. The two groups did not differ in the occurrence of sadness, $F(1, 143) = 0.05, p = .83$. Similarly, no significant group differences were found for the occurrence of rumination as an initial reaction, $F(1, 120) = 0.31, p = .58$, indicating that the reactivity of the assessment scheme was marginal. Moreover, data from the post-monitoring feedback questionnaire indicated that the perceived intrusiveness and reactivity of the method on the participant's behavior, feelings, and cognitions was small ($M = 0.83, SD = 0.93$, and $M = 0.56, SD = 0.72$ on a 0 to 4 scale with higher scores indicating higher intrusiveness and reactivity, respectively).

Descriptive Analyses

The vast majority of participants (82.8%) reported at least one episode of sadness during the assessment period. Overall, 235 episodes were reported for which sadness was the dominant emotion ($M = 3.05, SD = 2.07$). In 86.8% of these episodes, participants reported engaging in rumination to at least some extent (score > 1), indicating that rumination is a typical response to the experience of sadness ($M = 5.55, SD = 2.70$, on a 1 to 9 scale). Of the sadness episodes followed by rumination, 38.7% were reported to be elicited by another person, 37.9% by an event, and 23.4% by the respondent, with rumination focusing on another person (39.2%), the self (39.2%), and an event (21.6%). The mean rating for the sadness-related cognitive appraisals was 3.54 ($SD = 2.69$; on a 1 to 9 scale), indicating rather minor, less severe everyday experiences of loss.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

The mean duration of rumination was less than 1 hour ($M = 0.79$, $SD = 1.30$; range = 0 – 7 hours). We determined duration by the number of hourly ruminative thinking loops until the participant indicated that rumination was terminated. We estimated duration conservatively, counting duration as zero if rumination was reported as an initial reaction and 1 hour later it was reported as terminated (60.9% of all episodes). If rumination persisted until the second loop, this was counted as a duration of 1 hour, and so forth. The mean scores were 5.35 ($SD = 2.05$) for the intensity of rumination and 5.76 ($SD = 1.93$) for perceived uncontrollability.

The solution-focused goals ($M = 6.09$, $SD = 2.34$) were reported as pursued to a higher extent than understanding-focused goals ($M = 4.10$, $SD = 2.36$), $t(203) = 12.01$, $p < .001$. The same was true for goal attainment; solution-focused: $M (\%) = 34.9$, $SD = 10.2$; understanding-focused: $M (\%) = 23.7$, $SD = 10.2$, $t(152) = 3.60$, $p < .001$. Correlations between the two types of goals were $r = .53$, $p < .001$ (pursuit) and $r = .40$, $p < .01$ (attainment).

Relations between Goals and Rumination Process Variables

Pursuit of understanding-focused goals predicted the intensity ($b = 0.24$, $p < .05$) and perceived uncontrollability ($b = 0.32$, $p < .001$) of rumination, but not its duration ($b = 0.09$, $p = .07$), whereas pursuit of solution-focused goals was not significantly associated with ruminative process variables (see Table 1). Goal attainment was not significantly associated with the process variables (understanding-focused goals: log likelihood = -49.94, $p = .24$; solution-focused goals: log likelihood = -59.38, $p = .44$).

Relations between Social Support, Rumination Process Variables, and Goal Attainment

Results for the relations between perceived changes in social support and goal attainment are shown in Table 2. Perceived improvement in social support was significantly associated with solution-focused goal attainment (log likelihood = -152.70, $p < .01$): As expected, the higher the perceived improvement in support, the higher the goal attainment (b

PERCEIVED SOCIAL SUPPORT AND RUMINATION

$= 0.15, p < .01$). Perceived improvement in support was, however, not significantly associated with the attainment of understanding-focused goals ($\log \text{likelihood} = -149.32, p = .33$).

Perceived changes in social support appeared to be largely unrelated to the process variables, with the exception that perceived impairment was negatively associated with perceived intensity ($b = -0.21, p < .05$) and uncontrollability ($b = -0.18, p < .05$).

Trait Rumination.

The correlation between symptom-focused and self-focused trait rumination was $r = .60, p < .001$. Symptom-focused rumination predicted a longer duration ($b = 0.50, p < .05$), and greater perceived uncontrollability ($b = 1.08, p < .05$) of rumination, whereas self-focused rumination was not significantly related to the process variables. No significant relations were found between trait rumination and goal pursuit, goal attainment, and perceived changes in social support.

Further analyses revealed a tendency for symptom-focused rumination to moderate the relation between perceived improvement in social support and solution-focused goal attainment ($\log \text{likelihood} = -154.40, p = .06$). As expected, a closer examination of this effect revealed that for individuals with higher levels of symptom-focused rumination (above the median), perceived improvement in support predicted attainment of solution-focused goals ($b = 0.20, p < .01$), but not for those with lower levels (below the median).

Discussion

In this study, we employed a daily experience approach to explore understanding- and solution-focused goals that people report pursuing and attaining by ruminating in response to sadness. Given the beneficial role of social support in coping with sadness and adjusting to loss documented in previous research (Nolen-Hoeksema & Larson, 1999; Maisel & Gable, 2009), we expected that the attainment of coping-related goals through rumination would be facilitated by perceived social support.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

The findings confirmed our expectations, but only for the solution-focused goals. That is, perceived improvement in social support appeared to be associated with the attainment of solution-focused, but not of understanding-focused goals. Obviously, feeling socially supported was more helpful for coming to terms with the experience of loss than for trying to understand one's feelings and the meaning of the event. One likely explanation for this differential impact of social support on goal attainment is that others may perceive ruminating persons who appear to pursue solution-focused goals as coping more adequately than ruminating persons pursuing understanding-focused goals. Consequently, others may be more likely to effectively support behavior that signals adaptive coping. This interpretation would be consistent with prior findings indicating that other persons are more willing to support coping behavior that they perceive to be appropriate than behavior they expect to be less appropriate, especially distress-focused behavior (e.g., Silver, Wortman, & Crofton, 1990; Vollmann, Renner, & Weber, 2007).

The differential support of rumination that differs in its goals raises the question of the mechanisms implicated in this effect. A deeper understanding of how different styles of rumination might influence the quality of support requires that the perspectives of both the ruminating person and the potential support provider have to be explored. Future research is especially needed to elucidate the ways in which potential support providers assess and evaluate different styles of rumination and the distinct consequences the providers' assessments have for their willingness to lend support and the quality of the support they provide.

Generally, the present findings indicate that rumination does not compromise social support *per se*, thus qualifying previous findings that showed that a higher tendency toward depressive rumination was associated with subjective ratings of lower support quality and support satisfaction (Aymanns, Filipp, & Klauer, 1995; Flynn, Kecmanovic, & Alloy, 2010; Nolen-Hoeksema & Davis, 1999). It has been argued that rumination that exceeds social

PERCEIVED SOCIAL SUPPORT AND RUMINATION

expectations about the adequate time needed to adjust to the experience of loss may be one possible factor that impedes social support (Nolen-Hoeksema & Davis, 1999). However, this may apply in particular to coping with severe stress experiences. For the typically short, less severe everyday experiences of sadness reported in this study, perceived changes in social support appeared unrelated to the duration of rumination.

Although rumination (depending on its content and style) may impede social support, previous studies have also shown that social support can buffer the negative effects of depressive rumination (Nolen-Hoeksema & Davis, 1999; O'Mahen, Flynn, & Nolen-Hoeksema, 2010; Puterman et al., 2010). Replicating these findings, trait depressive rumination, especially symptom-focused rumination, appeared to moderate the relation between perceived improvement in social support and attainment of solution-focused goals in the present study, such that this association was significant for persons with higher rumination levels, but not for those with lower levels. Given that symptom-focused rumination may be the more problematic form of depressive rumination, as indicated by its association with a longer duration and higher perceived uncontrollability of rumination, these findings confirm that persons with higher levels of dysfunctional rumination are more likely to benefit from social support than those with lower levels.

Limitations

Two major limitations of the present study have to be acknowledged in addition to those already mentioned. First, daily experience designs bear the risk of reactivity effects such that participants may try to avoid the ruminative-thinking loop by not reporting rumination. By implementing a reactivity control group, we were able to show that reactivity was not substantial with regard to the occurrence of sadness and rumination. However, we do not know whether asking people if they were still ruminating prolonged rumination or even led people to reengage in rumination.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

Second, due to the repeated measurements implicated in daily experience designs, we had to use single or only a few items to measure the major variables. For instance, change in perceived social support was measured with a single item that could not provide information about the different functions of social support including emotional, instrumental, and informational support. Future studies would profit from including measures that allow differentiation between these basic functions of social support.

Conclusions

This study examined the impact of perceived social support on coping-related goals that people report pursuing with their rumination following the experience of sadness. Based on a daily experience approach that allowed us to follow processes of rumination, the major findings of the study suggest that social support is more likely to be associated with the attainment of solution-focused than understanding-focused goals. The most likely explanation of these findings that deserves more detailed analysis is that solution-focused goals are seen as more adaptive for coping with sadness and adjusting to loss. Future research is needed to elucidate the mechanisms implicated in the differential support of different types of rumination.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

References

- Ayduk, J. R., & Kross, E. (2008). Enhancing the pace of recovery. Self-distanced analysis of negative experiences reduces blood pressure reactivity. *Psychological Science, 19*, 229-231.
- Aymanns, P., Philipp, S.-H., & Klauer, T. (1995). Family support and coping with cancer: Some determinants and adaptive correlates. *British Journal of Social Psychology, 34*, 107-124.
- Bonanno, G. A., Goorin, L., & Coifman, K. G. (2008). Sadness and grief. In M. Lewis, J. M. Haviland-Jones, & L. Feldman Barrett (Eds.), *Handbook of emotions* (pp. 797-810). New York, NY, US: Guilford Press.
- Fahrenberg, J., Brügner, G., Foerster, F., & Käppler, C. (1999). Ambulatory assessment of diurnal changes with a hand-held computer: Mood, attention, and morningness-eveningness. *Personality and Individual Differences, 26*, 641-656.
- Flynn, M., Kecmanovic, J., & Alloy, L. B. (2010). An examination of integrated cognitive-interpersonal vulnerability to depression. The role of rumination, perceived social support, and interpersonal stress generation. *Cognitive Therapy and Research, 34*, 456-466.
- Frijda, N. H. (1986). *The emotions*. New York: Cambridge University Press.
- Kuehner, C., Huffziger, S., & Nolen-Hoeksema, S. (2007). *Response Style Questionnaire – Deutsche Version (RSQ-D)* [RSQ German adaptation]. Göttingen: Hogrefe.
- Lazarus, R. S. (1991). *Emotion and adaptation*. Oxford: University Press.
- Maisel, N. C., & Gable, S. L. (2009). The paradox of received social support. The importance of responsiveness. *Psychological Science, 20*, 928-932.
- Martin, L. L. & Tesser, A. (1996). Some ruminative thoughts. In R. S. Wyer (Ed.), *Ruminative thoughts: Advances in social cognition* (pp. 1-47). Hillsdale: Erlbaum.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

- Moberly, N. J. & Watkins, E. R. (2010). Negative affect and ruminative self-focus during everyday goal pursuit. *Cognition and Emotion*, 24, 729-739.
- Nezlek, J.B. (2007). A multilevel framework for understanding relationships among traits, states, situations, and behaviours. *European Journal of Personality*, 21, 789-810.
- Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology*, 100, 569-582.
- Nolen-Hoeksema, S. & Davis, C. G. (1999). "Thanks for sharing that": Ruminators and their social support networks. *Journal of Personality and Social Psychology*, 77, 801-814.
- Nolen-Hoeksema, S. & Larson, J. (1999). *Coping with loss*. Mahwah, NJ, US: Lawrence Erlbaum.
- Nolen-Hoeksema, S. & Morrow, J. (1991). A prospective study of depression and posttraumatic stress symptoms after a natural disaster: The 1989 Loma Prieta earthquake. *Journal of Personality & Social Psychology*, 61, 115-121.
- Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science*, 3, 400-424.
- O'Mahen, H. A., Flynn, H. A., & Nolen-Hoeksema, S. (2010). Rumination and interpersonal functioning in perinatal depression. *Journal of Social and Clinical Psychology*, 29, 646-667.
- Puterman, E., DeLongis, A., & Pomaki, G. (2010). Protecting us from ourselves: Social support as a buffer of trait and state rumination. *Journal of Social and Clinical Psychology*, 29, 797-820.
- Roseman, J. J., Antoniou, A. A., & Jose, P. E. (1996). Appraisal determinants of emotions: Constructing a more accurate and comprehensive theory. *Cognition and Emotion*, 10, 241-277.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

- Roseman, J. J., Wiest, C., & Swartz, T. S. (1994). Phenomenology, behaviors, and goals differentiate discrete emotions. *Journal of Personality and Social Psychology, 67*, 206-221.
- Scherer, K. R. (1997). Profiles of emotion-antecedents appraisal: Testing theoretical predictions across cultures. *Cognition and Emotion, 11*, 113-150.
- Schwarz, N. (2007). Retrospective and concurrent self-reports: The rationale of real-time data capture. In A. Stone, S. Shiffman, A. Atienza, & L. Nebeling (Eds.), *The science of real-time data capture* (pp. 11-26). Oxford: University Press.
- Segerstrom, S. C., Stanton, A. L., Alden, L. E., & Shortridge, B. E. (2003). A multidimensional structure for repetitive thought: What's on your mind, and how, and how much? *Journal of Personality and Social Psychology, 85*, 909-921.
- Siewert, K., Kubiak, T., Jonas, C., & Weber, H. (2011). Trait anger moderates the impact of anger-associated rumination on social well-being. *Personality and Individual Differences, 51*, 769-774.
- Silver, R. C., Wortman, C. B., & Crofton, C. (1990). The role of coping in support provision: The self-presentational dilemma of victims of life crisis. In I. G. Sarason, B. R. Sarason, & G. R. Pierce (Eds.), *Social support: An interactional view* (pp. 397-426). New York: John Wiley.
- Smith, C. A. & Lazarus, R. S. (1993). Appraisal components, core relational themes, and the emotions. *Cognition and Emotion, 7*, 233-269.
- Snijders, T. A. B. & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. London: Sage.
- Thomsen, D. K. (2006). The association between rumination and negative effect: A review. *Cognition and Emotion, 20*, 1216-1235.
- Vollmann, M., Renner, B., & Weber, H. (2007). Optimism and social support: The providers' perspective. *Journal of Positive Psychology, 2*, 205-215.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

Watkins, E. R. (2008). Constructive and unconstructive repetitive thought. *Psychological Bulletin, 134*, 163-206.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

Table 1

Prediction of Rumination Process Variables with Understanding-Focused and Solution-Focused Goal Pursuit

	Duration ^a		Perceived intensity ^b		Perceived Uncontrollability ^c	
	CI 95%		CI 95%		CI 95%	
	<i>b</i>	(Lower – upper)	<i>b</i>	(Lower – upper)	<i>b</i>	(lower – upper)
Understanding-focused goal pursuit	0.09	(-0.01 – 0.19)	0.24*	(0.06 – 0.42)	0.32***	(0.15 – 0.49)
Solution-focused goal pursuit	0.01	(-0.09 – 0.10)	0.08	(-0.12 – 0.28)	-0.01	(-0.19 – 0.18)

^a log likelihood = -342.52, *p* = .12, ^b log likelihood = -187.19, *p* < .05, ^c log likelihood = -180.53, *p* < .001.

* *p* < .05. *** *p* < .001.

PERCEIVED SOCIAL SUPPORT AND RUMINATION

Table 2

Prediction of Goal Attainment with Changes in Perceived Social Support

	Understanding-focused goal attainment			Solution-focused goal attainment		
	CI 95%		<i>b</i> (Lower – upper)	CI 95%		
Perceived improvement in social support	0.06	(-0.06 – 0.17)		0.15**	(0.04 – 0.27)	
Perceived impairment of social support	-0.08	(-0.16 – 0.01)		0.00	(-0.11 – 0.11)	

** $p < .01$.

Studie 3

Siewert, K., Kubiak, T., Jonas, C. & Weber, H. (2011).

Trait anger moderates the impact of anger-associated rumination on social well-being.

Personality and Individual Differences, 51, 769-774.

Trait Anger Moderates the Impact of Anger-Associated Rumination on Social Well-Being

Kerstin Siewert

Thomas Kubiak

Cornelia Jonas

Hannelore Weber

University of Greifswald, Germany

Author Note

This research was supported by a grant from the German Research Foundation (DFG KU 2465/1-1).

Correspondence concerning this article should be addressed to Kerstin Siewert,
Institute fuer Psychologie, Universitaet Greifswald, Franz-Mehring-Str. 47, D-17487
Greifswald, Germany. Email: siewert@uni-greifswald.de

This is the author's version of a work that was accepted for publication in *Personality and Individual Differences*. Changes resulting from the publishing process, such as peer review, editing, corrections, structural formatting, and other quality control mechanisms may not be reflected in this document. Changes may have been made to this work since it was submitted for publication. A definitive version was subsequently published in Personality and Individual Differences, Vol. 51, Issue 6, 769-774, DOI: 10.1016/j.paid.2011.06.030

Abstract

In this study, we examined whether people's social well-being is influenced by hostile versus nonhostile goals that people report pursuing when experiencing anger-associated rumination. Moreover, we investigated the impact of trait anger and trait anger rumination on the relationship between anger rumination and perceived social well-being. Participants were 93 students who were equipped with hand-held computers for 28 days to assess anger-related rumination and its social consequences in daily life. Results showed that hostile goal pursuit *per se* did not affect perceived social well-being. However, impairment of social well-being following hostile rumination was moderated by trait anger. Findings are consistent with recent cognitive models of trait anger and anger rumination.

Keywords: anger-associated rumination; trait anger; social well-being; daily experience study

Trait Anger Moderates the Impact of Anger-Associated Rumination on Social Well-Being

1. Introduction

Ruminating about anger-evoking events has proven to be largely dysfunctional.

Studies examining processes of rumination about real, recalled, or imagined anger incidents have demonstrated that rumination intensifies anger (Rusting & Nolen-Hoeksema, 1998; Weber & Wiedig-Allison, 2007), increases hostile behavior (Bushman, Bonacci, Pedersen, Vasquez, & Miller, 2005), reduces forgiveness (McCullough, Bono & Root, 2007) and delays blood pressure recovery (Glynn, Christenfeld, & Gerrin, 2002).

Similar findings have been documented for the habitual tendency to engage in anger rumination. Trait anger rumination was associated with lower subjective well-being (Kubiak, Wiedig-Allison, Zgoriecki, & Weber, 2011; Philips, Henry, Hosie, & Milne, 2006), aggressive behavior (Anestis, Anestis, Selby, & Joiner, 2009; Sukhodolsky, Golub, & Cromwell, 2001), and delayed blood pressure recovery (Gerin, Davidson, Christenfeld, Goyal, & Schwartz, 2006).

The impact of rumination on anger and aggressive behavior has recently been elaborated within the *Integrative Cognitive Model* (ICM) of trait anger and reactive aggression (Wilkowski & Robinson, 2008, 2010). According to this model, individuals with high trait anger are characterized by three cognitive processing tendencies that exacerbate anger and reactive aggression. Specifically, persons high in trait anger are more biased toward interpreting situations as hostile; they are more likely to engage in ruminative attention that reinforces hostile biases and more likely to fail to exert effortful control that diminishes anger and reactive aggression.

Anger-associated rumination has typically been conceptualized as a focus on hostile interpretations and the harboring of hostile intentions, in particular, thoughts of revenge, which render the documented increase in anger and aggression following rumination

particularly likely (Sukhodolsky et al., 2001; Wilkowski & Robinson, 2008). However, previous research has not examined whether the consequences of anger rumination vary with the extent to which anger rumination is guided by hostile compared to nonhostile goals. Generally, the functionality of rumination varies with the style and content of rumination (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Segerstrom, Stanton, Alden, & Shortridge, 2003; Watkins, 2008). For example, thinking about anger episodes from a self-distanced perspective was more effective than re-experiencing episodes from a self-immersed perspective (Ayduk & Kross, 2008).

In the present study, we employed a daily experience approach to examine whether rumination about anger incidents that is motivated by the goal of taking revenge is more dysfunctional than rumination that focuses on nonhostile goals. Moreover, we explored whether trait anger and trait anger rumination moderate the inclination toward hostile versus nonhostile rumination and its impact on social well-being.

Present Research

The present study was guided by three major aims. First, we examined whether the goals that people pursue with their rumination following anger incidents influence social well-being, as indicated by the involvement and satisfaction with interpersonal interactions, and perceived social support. Based on the assumption that rumination may be motivated by hostile as well as nonhostile goals such as solving problems and gaining insight (Nolen-Hoeksema et al., 2008; Segerstrom et al., 2003), we were particularly interested in whether hostile goals are more detrimental to perceived well-being than nonhostile goals. In accordance with previous research that shows that hostile rumination increases the tendency for aggression (Wilkowski & Robinson, 2008, 2010) and hinders processes of forgiveness (McCullough et al., 2007), we expected hostile, but not nonhostile rumination to impair social well-being.

Previous studies on the social consequences of anger rumination have focused on the interaction between the ruminating person and the anger-instigating person (McCullough, Bellah, Kilpatrick, & Johnson, 2001). Yet the social implications of rumination may likely extend to interpersonal interactions beyond the interaction with the instigator. This would follow from the cognitive-neoassociationistic theory of Berkowitz (1990), according to which the negative affect caused by aversive experiences automatically activates associated negative feelings, thoughts, and memories. In this view, anger and ruminative attention likely reinforce a negative bias in perceiving interpersonal interactions. Accordingly, we expected anger rumination—in particular, when motivated by hostile goals—to be associated with impairment in perceived well-being.

The second major aim of the present study was to examine the influence of trait anger and trait anger rumination. In accordance with the ICM (Wilkowski & Robinson, 2008, 2010), we expected individuals high in trait anger to be more likely to engage in hostile rumination than individuals low in trait anger. Moreover, we hypothesized that impairment in social well-being following hostile rumination would be higher for high trait anger individuals than low trait anger individuals. In addition, we explored whether trait anger rumination would predict a higher inclination for hostile rumination and a greater impairment to social well-being.

Finally, using a daily experience approach, we investigated anger-associated rumination as it is experienced in daily life. As part of a larger project, participants reported on rumination elicited by the experiences of anger for a period of 4 weeks. Such an in-field assessment offers the possibility of monitoring rumination close to the time of the actual experience, reducing retrospective biases that likely compromise generalized reports of rumination (Fahrenberg, Myrtek, Pawlik, & Perrez, 2007).

Moreover, this approach allowed us to assess process variables (including the duration, intensity, and perceived uncontrollability of rumination) and to explore whether they were related to hostile versus nonhostile goals, changes in social well-being, and the trait

variables. Whereas we did not expect duration and intensity of rumination to differ between hostile and nonhostile rumination because both can be experienced as intense and lasting, we hypothesized that perceived uncontrollability would reflect a lack of cognitive control that might be higher for hostile rumination and high trait anger individuals (Wilkowski & Robinson, 2008, 2010).

2. Method

2.1 Participants

Participants were 93 students (nonpsychology; 64.5% women; mean age 23.4 years, $SD = 2.9$) at the University of Greifswald who took part in a larger study on rumination in daily life (Kubiak, Jonas, & Weber, 2011). Students received 40 Euro for participation depending on their degree of compliance during the 4 weeks.

2.2 Electronic Diary Protocol

Participants were equipped with iPaq 114 series hand-held computers (Hewlett-Packard Corporation, Palo Alto, CA, USA) for 28 consecutive days. The experience sampling procedure was implemented using mQuest data entry software (cluetec GmbH, Karlsruhe, Germany). The participants were prompted acoustically four times per day to complete the questionnaire implemented on the hand-held computer (random time windows of +/- 30 min around 9 a.m., 1 p.m., 5 p.m., and 9 p.m.). For every trial, the participants were prompted to complete questions on the experience of specific emotions since the last trial (see Figure 1).

2.2.1 Emotions. Participants were asked to report the possible experience (assessed dichotomously: yes/no) of six emotions: *anger, fear, sadness, joy, pride, and enthusiasm*. In cases in which more than one emotion was present, the participants were instructed to check the predominant emotion. The present study focused on anger.

2.2.2 Ruminative thinking. Participants were then asked if they ruminated in reaction to the instigating situation by a single item (“I cannot forget the situation and keep thinking about it”) from the Anger-related Reactions and Goals Inventory (ARGI; Kubiak, Wiedig-

Allison, et al., 2011) that was rated on a 9-point Likert scale from 1 (*totally disagree*) to 9 (*totally agree*). If participants indicated that they reacted with rumination (score > 1), they were prompted to report its *content* focus (forced choice between oneself vs. someone else vs. eliciting event). Then the participants rated the *intensity* of their rumination, and its *perceived uncontrollability* (“How difficult is it for you to stop thinking about the event”). Both features were assessed on 9-point Likert scales ranging from 1 to 9. Aggregate reliabilities were computed as suggested by Snijders and Bosker (1999) and had $\lambda > .97$ for both items.

Next, participants were asked to check the extent to which they pursued each of nine *goals* with their rumination, including five *explanation-focused goals* that revolve around understanding the causes of the emotion-eliciting event and one’s feelings (e.g., “I want to understand why that happened”), three *solution-focused goals* (e.g., “I want to find out how I can come to terms with this situation”), and the *revenge-focused goal* (“I want to find out how I can get back at the other person”). Each goal was assessed by a single item, scaled from 1 (*totally disagree*) to 9 (*totally agree*; all aggregate reliabilities $\lambda > .99$; revenge $\lambda = .98$). For further analyses, we aggregated the five explanation-focused and the three solution-focused goals, yielding an index for explanation-focused and solution-focused goal pursuit.

2.2.3 Ruminative thinking loops. If participants indicated that they ruminated in reaction to the instigating situation, questions concerning the intensity and perceived uncontrollability of rumination were repeatedly presented on the hand-held computer on an hourly basis. This loop was repeated until the participants indicated that they had stopped ruminating. When rumination was terminated, participants were asked about (a) goal attainment and (b) indicators of social well-being.

(a) *Goal attainment* was measured for each of the nine goals presented at the initial measurement by asking whether this goal had been achieved through rumination (scaled dichotomously: attained vs. not attained), yielding three goal attainment indices for (a) the explanation-focused goals, (b) the problem-focused goals, and (c) the revenge-focused goal.

(b) *Social well-being* was measured by asking participants about perceived changes in *frequency* (“How much time have you spent with others since the last data entry compared to other times”), *involvement* (“How intensively have you been involved in interactions with others compared to other times”), *satisfaction* (“How satisfied have you been with your contacts with others compared to other times”), and *perceived availability of social support* (“How supportive have other people been compared to other times”), each measured with a single item. Responses were made on a 9-point Likert scale from 1 (*rather less*) to 9 (*rather more*). For further analyses, we aggregated the four variables, yielding an index for perceived social well-being (aggregate reliabilities $\lambda > .97$), with values < 5 indicating impairment.

As long as participants were engaged in a rumination loop, the signal-contingent sampling scheme was interrupted, that is, participants were not prompted acoustically while ruminating. In this way, we wanted to prevent overlapping trials and loops; at the same time, however, this reduced the report of possible new rumination episodes.

2.3 Trait Measures

Prior to the experience-sampling period, we assessed (a) trait anger, and (b) trait anger rumination:

(a) *Trait anger* was measured using the 10-item subscale of the State-Trait-Anger Expression-Inventory (STAXI; German adaptation by Schwenkmezger, Hodapp, & Spielberger, 1992). Responses are made on a 4-point scale from 1 (*almost never*) to 4 (*almost always*); α was .82.

(b) *Trait anger rumination* was assessed by the four-item rumination subscale of the Anger-related Reactions and Goals Inventory (ARGI; Kubiak, Wiedig-Allison et al., 2011); α was .81. This scale measures the tendency to engage in perseverative thinking about the experience of anger without explicitly focusing on hostile thoughts (e.g., “I ruminate over the incident”).

2.4 Data Analysis

Diary data share cross-sectional time-series characteristics containing a multilevel structure; in our case, we use a two-level model with measurements (level 1) nested within participants (level 2; Nezlek, 2007). We computed two-level linear-mixed regression models in which we introduced random intercepts and random slopes for the predictors. Thus, we allowed the intercepts and slopes to vary across participants. The corresponding models were compared with regard to their model fit using log rank tests. Where appropriate—that is, when within-person variance was not of primary interest (e.g., for descriptive analyses)—we also employed analyses of mean aggregated data by participants. For all analyses, we used STATA statistical software (version 11.1; Stata Corporation, College Station, TX, USA) with its mixed modeling tool (xtmixed).

3. Results

Participants completed 68.4 signal-contingent trials on average ($SD = 14.1$) indicating satisfactory compliance. Compliance and occurrence of ruminative thinking did not change over time (Kubiak, Jonas, et al., 2011).

3.1 Descriptive Analyses

Overall, 321 episodes were reported for which anger was the dominant emotion. In 72.9% of these episodes, participants reported engaging in rumination to at least some extent (score > 1), indicating that rumination is a typical response to the experience of anger (mean intensity = 5.87, $SD = 2.58$, on a 1 to 9 scale). The focus of the rumination was most often another person (48.3%), followed by oneself (26.9%) and an event (24.8%). For further analyses, we focused on anger episodes in which the focus of rumination was another person.

Results for the pursuit and attainment of the different goals are shown in Table 1. The goal of taking revenge was reported as pursued to a lesser extent than the explanation-focused and solution-focused goals, and compared to the other goals, it was only rarely achieved. The intercorrelations among the motivational foci (see Table 1) indicate a strong relation between the two nonhostile goals. Seeking revenge was correlated only with the solution-focused

goals, suggesting that getting back at the instigator may to some extent be seen as part of the solution.

Mean duration of rumination was about half an hour ($M = 0.6$, $SD = 1.4$). We determined duration by the number of hourly ruminative thinking loops until the participant indicated that rumination was terminated. We estimated duration conservatively, counting duration as zero if rumination was reported as an initial reaction and 1 hour later it was reported as terminated (79% of all episodes). If rumination persisted until the second ruminative thinking loop, this was counted as a duration of 1 hour and so forth. Mean scores for perceived uncontrollability ($M = 5.6$, $SD = 1.9$) and intensity of rumination ($M = 5.0$, $SD = 2.5$) were moderately high.

3.2 Relationships between Process Variables, Goals, and Social Well-Being

Results showed that duration, intensity, and perceived uncontrollability of rumination were not significantly associated with an impairment of social well-being (log likelihood = -54.47, $p = .58$).

For the goals, analyses revealed that both explanation-focused and solution-focused goals predicted the duration of ruminative thinking (explanation-focused: $b = 0.13$, log likelihood = -189.86, $p < .05$; solution-focused: $b = 0.16$, log likelihood = -188.68, $p < .01$), its intensity (explanation-focused: $b = 0.24$, log likelihood = -260.38, $p < .05$; solution-focused: $b = 0.31$, log likelihood = -258.79, $p < .01$) and perceived uncontrollability (explanation-focused: $b = 0.33$, log likelihood = -253.28, $p < .01$; solution-focused: $b = 0.40$, log likelihood = -250.85, $p < .001$). These findings suggest that the process variables reflect coping demands to some extent, indicating that processing the incidents takes time, rather than indicating a passive, ineffective dwelling on negative experiences. By contrast, pursuit of the revenge-focused goal was associated only with the perceived uncontrollability of rumination ($b = 0.19$, log likelihood = -255.71, $p < .05$), but not with its duration ($b = -0.01$, log likelihood = -192.40, $p = .84$), nor intensity ($b = 0.14$, log likelihood = -261.46, $p = .12$),

confirming our expectation that compared to nonhostile rumination, hostile rumination reflects a lack of cognitive control to a greater extent.

Departing from our expectations, the goal of taking revenge was not significantly associated with impairment in social well-being, $b = 0.08$, log likelihood = -257.84, $p = .61$. Additionally, pursuit of nonhostile goals was unrelated to impairment in well-being (solution-focused: $b = -0.06$, log likelihood = -258.31, $p = .72$; explanation-focused: $b = -0.27$, log likelihood = -257.25, $p = .13$), confirming our expectations.

Trait anger predicted higher intensity ($b = 1.02$, log likelihood = -259.95, $p < .05$) and perceived uncontrollability ($b = 1.12$, log likelihood = -255.14, $p < .01$) of ruminative thinking, but not its duration ($b = 0.26$, log likelihood = -191.79, $p = .26$). Trait anger rumination was significantly related to perceived uncontrollability ($b = 0.81$, log likelihood = -255.01, $p < .01$), but not to duration ($b = -0.08$, log likelihood = -192.31, $p = .63$), nor perceived intensity ($b = 0.51$, log likelihood = -261.39, $p = .10$).

3.3 Trait Variables as Moderators of the Relationship between Rumination-Related Goals and Social Well-Being

As was expected, trait anger was significantly positively associated with pursuing the revenge-focused goal. However, no significant relations were found between trait anger rumination and revenge seeking (see Table 2). Further analyses showed that both trait anger ($b = 0.24$, log likelihood = -258.32, $p = .75$) and trait anger rumination ($b = 0.65$, log likelihood = -257.50, $p = .18$) did not predict a decrease in social well-being. We then examined trait anger and trait anger rumination as potential moderators by computing mixed regression models in which we included interaction terms to test for moderation (see Table 3).

Results showed that trait anger moderated the relationship between revenge-focused goal pursuit and perceived well-being (log likelihood = -255.58, $p = .05$). A closer examination of this effect revealed that for persons with higher scores on trait anger, a significant association between revenge-focused goal pursuit and a decrease in well-being was

observed. The model including the revenge-focused goal pursuit \times trait anger interaction resulted in a better fit to the data than the preceding model including revenge-focused goal pursuit, with a log rank compared to the preceding model, $\chi^2(1) = 4.52, p < .05$. Trait anger rumination did not moderate the relationship between revenge-focused goal pursuit and impairment in social well-being (log likelihood = -256.74, $p = .19$). This model did not result in a better fit to the data than the preceding model including revenge-focused goal pursuit, $\chi^2(1) = 2.19, p = .14$.

Further analyses revealed that trait anger and trait anger rumination did not moderate the relationship between solution-focused and explanation-focused goal pursuit and a decrease in perceived well-being.

4. Discussion

In the present study, we used a daily experience approach to explore the differential impact of hostile versus nonhostile rumination on social well-being. In addition, we examined whether trait anger and trait anger rumination moderated the motivational focus of anger-associated rumination and its possible impact on social well-being.

Results showed that rumination is a typical reaction to the experience of anger and the focus was most often another person. Participants pursued explanation- and solution-focused goals more frequently with their rumination rather than the goal of taking revenge. Moreover, the findings indicate that the goals – in particular taking revenge – have been achieved through rumination only to a marginal extent.

The main findings of the present study relate to the role of trait anger in anger rumination and changes in perceived social well-being following hostile rumination. Trait anger was associated with rumination that was more intense, more hostile (that is, motivated by the goal of taking revenge), and perceived as more uncontrollable. These findings are consistent with the *Integrative Cognitive Model* of trait anger (Wilkowski & Robinson, 2008, 2010), according to which trait anger is characterized by a higher inclination toward

ruminative attention on hostile thoughts. Thus, the present study provides further support for this model, confirming its validity for processes of anger rumination in daily life.

The most notable finding was that trait anger moderated changes in social well-being following revenge-focused anger rumination, suggesting that hostile goals *per se* did not affect social well-being. One likely explanation of the moderating effect of trait anger is that the hostile cognitive processing tendencies characteristic of trait anger (Wilkowski & Robinson, 2008, 2010) may generalize to a negative perception of interpersonal interactions. Thus, whereas for persons low in trait anger, hostile goals (if pursued at all) may be focused on the target of a person's anger; for high trait anger individuals, hostile rumination may cast a negative shadow on their interpersonal interactions in general.

An alternative explanation for the moderating role of trait anger in predicting the impact of hostile rumination on perceived social well-being is that persons high in trait anger differ from those low in trait anger in the way they seek revenge. In addition to a higher inclination for pursuing revenge, high trait anger individuals may be more relentless in thinking about taking revenge. This would be consistent with research showing that persons high in trait anger are less inclined to forgive (Berry, Worthington, O'Connor, Parrott, & Wade, 2005; McCullough et al., 2007) and that vengeance intensifies negative brooding (McCullough et al., 2001; Ysseldyk, Matheson, & Anisman, 2007).

Due to the daily experience design, the single item that was used in the present study to measure the goal of revenge seeking does not provide information about the nature of seeking revenge. Future studies should explore rumination-associated thoughts of revenge in more detail to further our understanding of the relationships between trait anger, rumination, and social well-being. It would be particularly interesting to further explore how the goal of taking revenge can be distinguished from the goal of changing the anger-instigator's harmful behavior, which is the main social function of anger (Averill, 1982; Fischer & Roseman, 2007).

Different from trait anger, trait anger rumination did not predict a higher ruminative focus on hostile goals, nor did it predict well-being or moderate the relationship between hostile rumination and well-being. One likely explanation is that the scale used in the present study to measure trait rumination assesses the mere inclination to engage in perseverative thoughts following the experience of anger; it is insensitive to the different motivations associated with anger rumination.

Limitations

Three major limitations of the present study have to be acknowledged in addition to those already mentioned. First, daily experience designs bear the risk of reactivity effects such that participants may try to avoid the ruminative-thinking loop by not reporting rumination; asking participants if they are still ruminating may also prolong rumination. We tried to check for reactivity effects by implementing a reactivity control group. Results of the comparison between these two groups did not show significant differences concerning the occurrence of ruminative thinking (Kubiak, Jonas, et al., 2011).

Second, we focused on goals that participants reported to pursue with their rumination. It seems likely that solution- and explanation-focused goals are more socially desirable than the goal of taking revenge. Moreover, it has been argued that subjective goals can be contrasted with nonconscious motives that imply dysfunctional rather than adaptive aims, for example, to justify passivity in the case of depressive rumination (Nolen-Hoeksema et al., 2008). That is, rumination may serve different functions than those reflected in subjective goals.

A third limitation is that the present findings are restricted to perceived social well-being; further studies are needed to investigate the impact of anger rumination on social well-being in more detail, including in particular the perspective of the other persons involved in an anger-evoking event.

Conclusions: To our knowledge, this is the first study to examine the impact of anger-associated rumination on social well-being using a daily experience approach. The major findings of the study showed that revenge-focused rumination *per se* was not related to perceived social well-being, but that trait anger moderated the relationship between hostile rumination and social well-being. Together, the present findings point to a negative, hostile cascade such that individuals high in trait anger are not only more inclined toward hostile rumination; for them, hostile rumination is even more detrimental to social well-being than for individuals low in trait anger.

References

- Anestis, M. D., Anestis, J. C., Selby, E. A., & Joiner, T. E. (2009). Anger rumination across forms of aggression. *Personality and Individual Differences*, 46, 192-196.
- Averill, J. R. (1982). *Anger and aggression. An essay on emotion*. New York: Springer.
- Ayduk, O. & Kross, E. (2008). Enhancing the pace of recovery. Self-distanced analysis of negative experiences reduces blood pressure reactivity. *Psychological Science*, 19, 229-231.
- Berkowitz, L. (1990). On the formation and regulation of anger and aggression: A cognitive-neoassociationistic analysis. *American Psychologist*, 45, 494-503
- Berry, J. W., Worthington, E. L., O'Connor, L. E., Parrott, L., & Wade, N. G. (2005). Forgiveness, vengeful rumination, and affective traits. *Journal of Personality*, 73, 183 – 225.
- Bushman, B. J., Bonacci, A. M., Pedersen, W. C., Vasquez, E. A., & Miller, N. (2005). Chewing on it can chew you up: Effects of rumination on triggered displaced aggression. *Journal of Personality and Social Psychology*, 88, 969-983.
- Fahrenberg, J., Myrtek, M., Pawlik, K., & Perrez, M. (2007). Ambulatory assessment – Monitoring behavior in daily life settings. *European Journal of Psychological Assessment*, 23, 206-213.
- Fischer, A. H. & Roseman, I. J. (2007). Beat them or ban them: The characteristics and social functions of anger and contempt. *Journal of Personality and Social Psychology*, 93, 103 – 115.
- Gerin, W., Davidson, K. W., Christenfeld, N. J. S., Goyal, T., & Schwartz, J. E. (2006). The role of angry rumination and distraction in blood pressure recovery from emotional arousal. *Psychosomatic Medicine*, 68, 64-72.

- Glynn, L. M., Christenfeld, N., & Gerrin, W. (2002). The role of rumination in recovery from reactivity: Cardiovascular consequences of emotional states. *Psychosomatic Medicine*, 64, 714-726.
- Kubiak, T., Jonas, C., & Weber, H. (2011). *Emotion-associated ruminative thinking in daily life*. Manuscript submitted.
- Kubiak, T., Wiedig-Allison, M., Zgoriecki, S., & Weber, H. (2011). Habitual goals and strategies in anger regulation: Psychometric evaluation of the Anger-related Reactions and Goal Inventory (ARGI). *Journal of Individual Differences*, 32, 1-13.
- McCullough, M. E., Bellah, C. G., Kilpatrick, S. D., Johnson, J. L. (2001). Vengefulness: Relationships with forgiveness, rumination, well-being, and the Big Five. *Personality and Social Psychology Bulletin*, 27, 601-610.
- McCullough, M. E., Bono, G., & Root, L. M. (2007). Rumination, emotion, and forgiveness: Three longitudinal studies. *Journal of Personality and Social Psychology*, 92, 490-505.
- Nezlek, J.B. (2007). A multilevel framework for understanding relationships among traits, states, situations, and behaviours. *European Journal of Personality*, 21, 789-810.
- Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science*, 3, 400-424.
- Philips, L. H., Henry, J. D., Hosie, J. A., & Milne, A. B. (2006). Age, anger regulation, and well-being. *Aging & Mental Health*, 10, 250-256.
- Rusting, C. L. & Nolen-Hoeksema, S. (1998). Regulating responses to anger: Effects of rumination and distraction on angry mood. *Journal of Personality and Social Psychology*, 74, 790-803.
- Schwenkmezger, P., Hodapp, V., & Spielberger, C. D. (1992). *Das State-Trait-Ärgerausdrucks-Inventar (STAXI)* [State-Trait-Anger Expression-Inventory]. Bern, Switzerland: Huber.

- Segerstrom, S. C., Stanton, A. L., Alden, L. E., & Shortridge, B. E. (2003). A multidimensional structure for repetitive thought: What's on your mind, and how, and how much? *Journal of Personality and Social Psychology, 85*, 909-921.
- Snijders, T. A. B. & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. London: Sage.
- Sukhodolsky, D. G., Golub, A., & Cromwell, E. N. (2001). Development and validation of the Anger Rumination Scale. *Personality and Individual Differences, 31*, 689-700.
- Watkins, E. R. (2008). Constructive and unconstructive repetitive thought. *Psychological Bulletin, 134*, 163-206.
- Weber, H., & Wiedig-Allison, M. (2007). Sex differences in anger-related behaviour: Comparing expectancies to actual behaviour. *Cognition and Emotion, 21*, 1669-1698.
- Wilkowski, B. M. & Robinson, M. D. (2008). The cognitive basis of trait anger and reactive aggression. An integrative analysis. *Personality and Social Psychology Review, 12*, 3-21.
- Wilkowski, B. M. & Robinson, M. D. (2010). The anatomy of anger: An integrative cognitive model of trait anger and reactive aggression. *Journal of Personality, 78*, 9-38.
- Ysseldyk, R., Matheson, K., & Anisman, H. (2007). Rumination: Bridging a gap between forgiveness, vengefulness, and psychological health. *Personality and Individual Differences, 42*, 1573 – 1584.

Table 1

Intercorrelations among the Goal Variables and Results for the Pursuit and Attainment^a of the Different Goals

	1.	2.	3.	Pursuit ^b		Attainment ^c	
				<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Revenge-focused goal	-	0.05	0.31*	2.99	2.73	4.3%	20.3
2. Explanation-focused goals		-	0.70***	4.62	2.10	31.3%	30.3
3. Solution-focused goals			-	5.88	2.16	35.8%	31.4

^a Values indicated goals attained that had been endorsed at the beginning (i.e., with scores > 5). ^b *n* = 113

episodes (*N* = 53). ^c *n* = 94 episodes (*N* = 52).

p* < .05. **p* < .001.

Table 2

Means and Standard Deviations (SD) of the Trait Variables and Their Contribution to the Prediction of Goal Pursuit

	Revenge-focused goal pursuit			Explanation-focused goal pursuit			Solution-focused goal pursuit	
				95% CI		95% CI		95% CI
	M	SD	b	(lower - upper)	b	(lower - upper)	B	(lower - upper)
Trait anger	2.00	0.53	1.87***	(0.83 - 2.91)	-0.25	(-1.06 - 0.56)	0.41	(-0.45 - 1.27)
Trait anger rumination	2.83	0.78	0.63	(-0.15 - 1.41)	0.08	(-0.50 - 0.66)	0.37	(-0.22 - 0.96)

*** $p < .01$.

Table 3

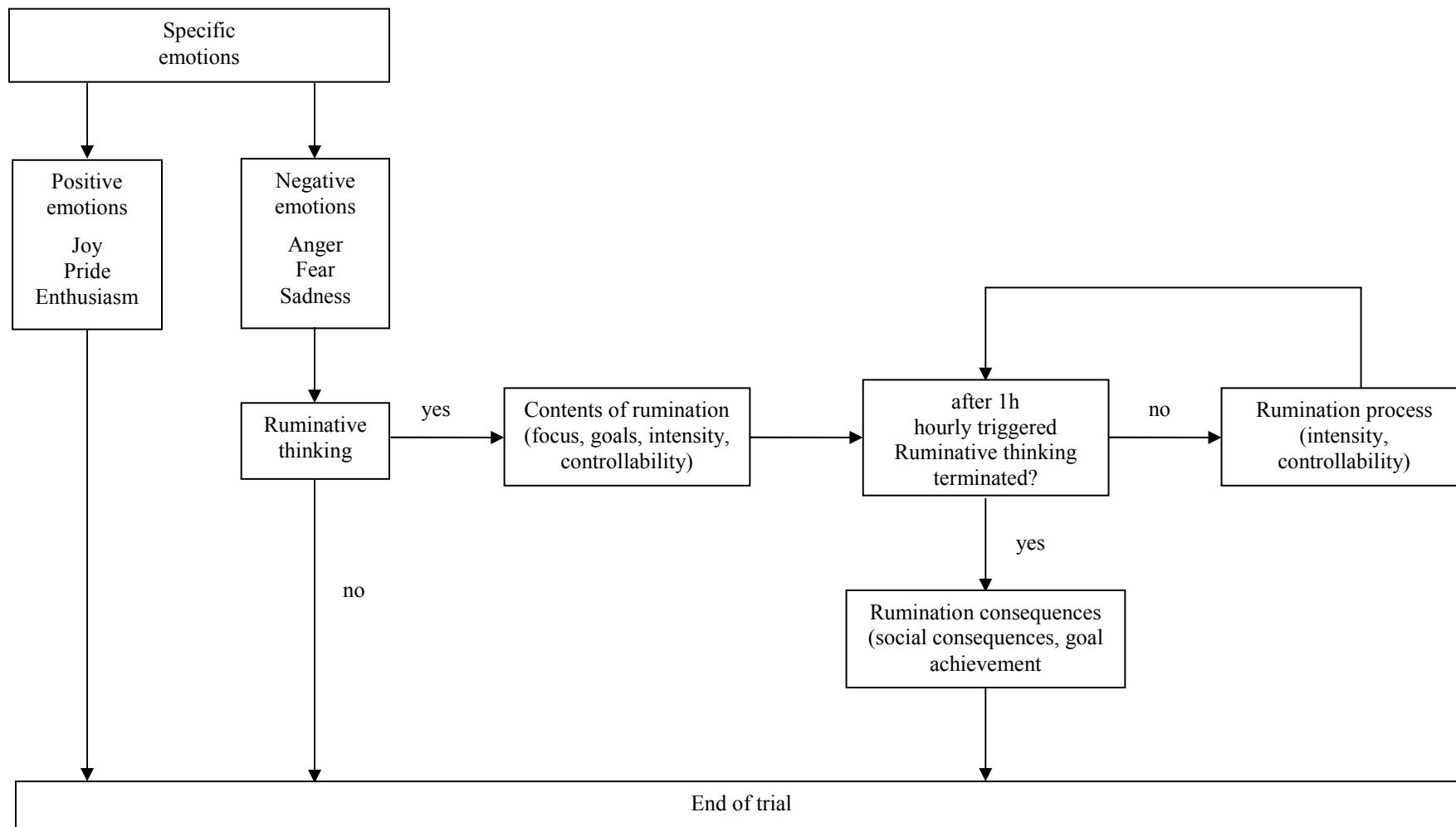
Revenge-Focused Goal Pursuit and Impairment of Social Well-Being and Tests of Moderating Effects

	<i>b</i>	95% CI
		(lower - upper)
Revenge-Focused Goal Pursuit	0.08	(-0.22 - 0.37)
× Trait Anger	0.65*	(0.09 - 1.21)
× Trait Anger Rumination	0.31	(-0.06 - 0.68)

Note. Interaction terms have been tested in separate models each (see main text).

* $p < .05$.

Figure 1

Flow chart of the study

Erklärung bei Gemeinschaftsarbeiten

Übersicht der Eigenanteile der Autorin an den vorgelegten wissenschaftlichen Arbeiten

Studie 1: Siewert, Antoniw, Kubiak & Weber (2011)

Konzeption und Design der Untersuchung:	Siewert, Antoniw, Kubiak
Organisation der Untersuchung, Datenerhebung:	Siewert
Idee für die Studie, Erarbeitung der Fragestellung:	Siewert
Auswahl statistischer Methoden, Datenanalyse:	Siewert
Interpretation der Daten:	Siewert, Antoniw, Kubiak, Weber
Entwurf des Manuskripts:	Siewert
Revision des Manuskripts:	Siewert, Kubiak, Weber

Studie 2: Siewert, Kubiak, Jonas & Weber (submitted)

Konzeption und Design der Untersuchung:	Siewert, Kubiak, Jonas, Weber
Organisation der Untersuchung, Datenerhebung:	Jonas
Idee für die Studie, Erarbeitung der Fragestellung:	Siewert, Kubiak, Weber
Auswahl statistischer Methoden, Datenanalyse:	Siewert
Interpretation der Daten:	Siewert, Weber
Entwurf des Manuskripts:	Siewert
Revision des Manuskripts:	Siewert, Weber

Studie 3: Siewert, Kubiak, Jonas & Weber (2011)

Konzeption und Design der Untersuchung:	Siewert, Kubiak, Jonas, Weber
Organisation der Untersuchung, Datenerhebung:	Jonas
Idee für die Studie, Erarbeitung der Fragestellung:	Siewert, Kubiak, Weber
Auswahl statistischer Methoden, Datenanalyse:	Siewert
Interpretation der Daten:	Siewert, Kubiak, Weber
Entwurf des Manuskripts:	Siewert
Revision des Manuskripts:	Siewert, Weber

Datum

Unterschrift
Autorin

Unterschrift der Betreuerin
der Dissertation