Original Article

Self-Efficacy in Regulating Positive and Negative Emotions

A Validation Study in Germany

Catherine Gunzenhauser[1], Tobias Heikamp[2], Maria Gerbino[3], Guido Alessandri[3], Antje von Suchodoletz[1], Laura Di Giunta[3], Gian Vittorio Caprara[3], and Gisela Trommsdorff[2]

[1]University of Freiburg, Germany, [2]University of Konstanz, Germany, [3]University of Rome "La Sapienza," Italy

Abstract. Perceived self-efficacy in emotion regulation facilitates various aspects of psychosocial adjustment. The Regulatory Emotional Self-Efficacy scale (RESE) by Caprara and Gerbino (2001) measures perceived capabilities to express positive emotions (POS) and to manage negative emotions, namely, despondency/distress (DES) and anger/irritation (ANG). The present research investigated the validity of the RESE scale in Germany. Study 1 investigated the factor structure and convergent validity of the scale in a sample of university students. In order to test the generalizability of findings from Study 1, in Study 2 we studied the factor structure, cross-gender invariance, and convergent validity of a slightly revised version of the scale in a sample of parents. The previously found factor structure was successfully replicated in both samples. Partial invariance on the scalar level was confirmed across gender. All self-efficacy subscales were positively correlated with life satisfaction and with reappraisal (a cognitive emotion regulation strategy). Suppression, a strategy of regulating emotional expression, was negatively related to POS. Findings suggest that the RESE scale is a valid instrument to assess emotion regulation self-efficacy in German-speaking samples.

Keywords: self-efficacy beliefs, emotion regulation, measurement invariance

Self-efficacy beliefs are a central component of human agency. They are defined as perceived capabilities to act in the way necessary to attain desired outcomes in specific situations (Bandura, 1997). Self-efficacy beliefs increase the ability and flexibility to adjust to social and situational demands by motivating people to set higher goals, to invest greater effort, and to persist when facing difficulties (see Bandura, 1997). Domain-specific self-efficacy beliefs are also the basis for successful emotion regulation (Caprara et al., 2008; Caprara & Gerbino, 2001).

Regulation of Positive and Negative Emotions

Emotion regulation "refers to attempts individuals make to influence which emotions they have, when they have them, and how these emotions are experienced and expressed" (Gross, Richards, & John, 2006, p. 14). The regulation of positive emotions and the regulation of negative emotions are distinctly related to emotional and social adjustment. For instance, experience and expression of positive emotions are associated with rewarding social relationships, health, and occupational success (Davidov & Grusec, 2006; Lyubomirsky, King, & Diener, 2005). Difficulties in downregulating strong negative emotions are associated with problematic interpersonal behavior (Eisenberg et al., 2001).

The Regulatory Emotional Self-Efficacy Scale

The Regulatory Emotional Self-Efficacy scale (RESE; Caprara et al., 2008; Caprara & Gerbino, 2001) was developed to assess self-efficacy beliefs in the domain of emotion regulation. The RESE scale assesses *self-efficacy in expressing positive emotions* (POS) and *self-efficacy in managing negative emotions* (NEG). POS is defined as the perceived capability "to experience and to allow oneself to express positive emotions such as joy, enthusiasm and pride in response to success or pleasant events" (Caprara et al., 2008, p. 228). NEG refers to the perceived "capability to ameliorate negative emotional states once they are aroused in response to adversity or frustrating

DOI: 10.1027/1015-5759/a000151

events and to avoid being overcome by emotions such as anger, irritation, despondency, and discouragement" (Caprara et al., 2008, p. 228). POS constitutes a first-order factor, whereas NEG constitutes a second-order factor represented by two first-order-factors: *self-efficacy in managing despondency/distress* (DES) and *self-efficacy in managing anger/irritation* (ANG). Confirmatory factor analyses have supported this structure in Italian, Bolivian, and U. S. samples (Caprara et al., 2008). Moreover, Caprara et al. (2008) documented positive associations of the RESE subscales with indicators of well-being in an Italian sample.

Importance of Cross-Gender Invariance

In general, women engage in emotion regulation more frequently than men and use a greater variety of emotion-regulation strategies (Nolen-Hoeksema & Aldao, 2011; Tamres, Janicki, & Helgeson, 2002). At the same time, women are more susceptible to depressive symptoms, whereas men tend to be more likely to show aggressive reactions to emotional arousal (Knight, Guthrie, Page, & Fabes, 2002; Nolen-Hoeksema & Aldao, 2011). Emotion regulation has been linked to gender differences in both depressive symptoms and aggressive reactions (Knight et al., 2002; Nolen-Hoeksema & Aldao, 2011; Sontag & Graber, 2010). For example, Nolen-Hoeksema and Aldao (2011) found that maladaptive emotion-regulation strategies, which are used more frequently by women (Tamres et al., 2002), are associated with depression across gender. Sontag and Graber (2010) found that emotional disengagement was related to aggression in boys but not in girls. Thus, cross-gender invariance of emotion-related measurement scales has relevance for further research in the areas of developmental and clinical psychology. The study by Caprara et al. (2008) revealed measurement invariance of RESE across gender in Italian, Bolivian, and U. S. samples.

Study Aims

The goals of the present research were

1. to examine the reliability and the factor structure of the RESE scale in a German-speaking sample,
2. to further investigate the convergent validity of the German scale, and
3. to examine the cross-gender invariance of the German scale.

Study 1

In Study 1, we studied the factor structure of a preliminary version of the German RESE scale and replicated the multidimensional latent structure of the RESE scale. Additionally, Study 1 examined convergent validity by investigating the relations between self-efficacy beliefs in regulating emotions, life satisfaction, and two emotion-regulation strategies. Life satisfaction is defined as a "conscious cognitive judgment of one's life in which the criteria for judgment are up to the person" (Pavot & Diener, 1993, p. 164). RESE beliefs have been shown in other countries to be positively correlated with life satisfaction (Caprara & Steca, 2005). Therefore, we assumed that all RESE subscales would be positively related to life satisfaction. We further examined the relations of RESE with two specific emotion-regulation strategies, reappraisal and suppression (Gross & John, 2003). *Reappraisal* refers to a cognitive reframing of an emotion-eliciting event; it modulates emotional experience, which is mirrored in emotional expression. For example, a woman who receives an ugly necklace for her birthday could reappraise the situation by focusing on how sweet it is that the giver tried so hard to please her. This reappraisal would make her feel and look happier. Individuals skilled at reappraisal can be expected to find themselves capable of downregulating negative emotions and of pointing out the positive features of a situation to themselves. Thus, we assumed positive correlations of reappraisal with POS, DES, and ANG. *Suppression* is an attempt to hide external signs of emotion, without changing the emotional experience. For instance, another woman who receives very beautiful earrings for her birthday might restrain herself from jumping for joy because she feels it might be inappropriate or embarrassing. She might still feel happy, but her suppression strategy would make her seem less so. In contrast to the woman in our example, individuals with high self-efficacy in expressing positive emotions feel capable to express their positive feelings. Thus, we assumed that POS should be negatively associated with suppression. Since DES and ANG emphasize the management of emotional experience rather than emotional expression, we did not expect DES and ANG to be associated with suppression.

Materials and Methods

Participants

Participants were 192 male and 307 female undergraduate students from southern Germany. Students were between 18 and 26 years old (M = 21.44, SD = 1.46). Participants could participate in a lottery of EUR 20 gift certificates or receive course credit.

Measures

Regulatory Emotional Self-Efficacy Scale

Study 1 used a version of the RESE scale that consists of 12 items (Caprara et al., 2008). POS, DES, and ANG were

measured with four items each. The scale was translated from English by native German speakers fluent in both languages. Participants rated their self-efficacy beliefs on a 5-point Likert scale from 1 (= *not at all well*) to 5 (= *very well*). Due to a translation error, the word upset had been translated into the German word for sad in one ANG item ("How well can you avoid getting upset when others keep giving you a hard time?"). Thus, the translated item was not adequate in terms of content validity to measure self-efficacy in managing anger. This item was excluded from the analyses.

Emotion Regulation Strategies

Reappraisal (six items) and suppression (four items) were assessed using the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003). All items were translated from English to German by a psychologist fluent in both languages. Participants rated their agreement on a 7-point Likert scale from 1 (= *strongly disagree*) to 7 (= *strongly agree*). Reliability and validity of the ERQ have been demonstrated in several samples of college students (Gross & John, 2003). Cronbach's αs were .80 for reappraisal and .78 for suppression.

Life Satisfaction

Life satisfaction was assessed using a German version of the Satisfaction with Life Scale (SWLS; Sölva, Baumann, & Lettner, 1995) by Diener, Emmons, Larsen, and Griffin (1985). The unidimensional nature, reliability, and validity of the SWLS have been confirmed in several studies (see Pavot & Diener, 1993). Participants answered five items on a 7-point Likert scale ranging from 1 (= *strongly disagree*) to 7 (= *strongly agree*). Cronbach's α was. 81.

Analytic Approach

We conducted confirmatory factor analyses using Mplus 5.21 (Muthén & Muthén, 2009). Since the estimates of multivariate skewness (Srivastava's $b1p = 79.35$ (11); $p < .001$) and kurtosis (Mardia's $b2p = 161.46$, $p < .001$) revealed that the data deviated from multivariate normal distribution, we employed maximum-likelihood estimation with restricted standard errors (MLR) and used Satorra-Bentler (S.-B.) scaled χ^2 difference tests to compare nested models (Satorra, 2000). Global model fit was evaluated using root mean square error of approximation (RMSEA), comparative fit index (CFI) and standardized root-mean-square residual (SRMR). Models were accepted when RMSEA was lower than .08 (Browne & Cudeck, 1993). For SRMR, a cutoff value of < .08 was used (Kelloway, 1998). Following O'Boyle and Williams (2011), we used a two-stage cutoff criterion for CFI, with CFI > .90 indicating an acceptable fit, and CFI > .95 indicating a good fit.

Missing Data

The rate of missing data was below 1% for each variable. However, missing data were handled with MLR estimation in the confirmatory factor analyses. Before creating mean scores for each scale to investigate convergent validity, missing values were replaced using the regression procedure in SPSS (IBM SPSS Statistics, 2010).

Results

Means and standard deviations for POS, DES, and ANG were 4.16 (0.71), 3.09 (0.66), and 3.04 (0.70), respectively. Cronbach's αs were α (POS) = .76, α (DES) = .65 and α (ANG) = .50, while reliability for the summated scale of self-efficacy in managing negative emotions was α = .72.

Confirmatory Factor Analyses

Three models were tested. Model 1 was a one-factor model. Model 2 was a two-factor oblique model with NEG and POS. Model 3 was a model which treated NEG as a second-order factor represented by ANG and DES. As negative emotions encompass both high-activation negative emotions and low-activation negative emotions (Lang, 1995), loadings of DES and ANG on NEG were constrained to be equal. For information on the anchor items used see Table 3.

Model 1 did not fit the data well (see Table 1). Model 2 and Model 3 both showed a satisfying fit. However, the Satorra-Bentler χ^2 test comparing Model 2 and Model 3 was significant, indicating that Model 3 provided a better fit to the data than Model 2, $\Delta SB\text{-}\chi^2(1) = 3.95$, $p < .05$. A modification index of 35.32 suggested a covariance between the errors of items 3 and 4. As those items both refer to the open expression of joy unrelated to gratification due to personal achievement, this covariance was specified (Model 3a). Standardized factor loadings of the 11 items on their respective factors ranged between .30 and .82.

Table 1. Fit indices of the confirmatory factor analyses of the RESE scale

Model	SB-χ^2	*df*[a]	CFI	RMSEA	90% CI	SRMR
Study 1						
Model 1	595.49	44	.42	.16	[.15, .17]	.14
Model 2	135.26	43	.90	.07	[.05, .08]	.05
Model 3	130.15	42	.91	.07	[.05, .08]	.05
Model 3a	96.67	41	.94	.05	[.04, .07]	.05
Study 2						
Model 3a	54.66	32	.96	.05	[.03, .08]	.06

Note. [a]Each model indicated a significant χ^2 with $p < .001$ due to the large sample size.

Table 2. Correlations of POS, DES, and ANG (log-transformed scores) with Life Satisfaction, Self-Esteem, and Emotion Regulation Strategies (male and female participants combined)

Indicator	*M*	*SD*	POS	DES	ANG
Life satisfaction					
Study 1	4.92	1.06	.36**	.41**	.20**
Study 2	7.51	1.67	.21**	.24**	.14*
Reappraisal					
Study 1	4.55	0.98	.19**	.24**	.16**
Study 2	4.45	1.16	.26**	.14*	.22**
Suppression					
Study 1	3.28	1.27	–.38**	.03	.16**
Study 2	3.07	1.10	–.23**	.03	.07

Notes. Pearson's correlation coefficients. *$p < .05$, **$p < .01$.

Convergent Validity

For an evaluation of the convergent validity in terms of relations to other constructs, we correlated POS, DES, ANG, and NEG with life satisfaction, reappraisal, and suppression. Log transformation was performed on all RESE subscales to approach normal distribution. Results are presented in Table 2.

Conclusion

In Study 1 the factor structure previously found in Italy, Bolivia, and the United States was successfully replicated in a German-speaking sample. Positive correlations of all RESE subscales with life satisfaction and reappraisal as well as the negative correlation between POS and suppression were in line with our expectations. Unexpectedly, however, ANG was positively correlated with suppression. Moreover, internal consistencies were not entirely satisfying. In particular, the reliability of the ANG subscale was low.

Study 2

In Study 2, self-efficacy beliefs in regulating emotions were assessed in parents as a part of a larger study on child development. Here, we used a revised version of the German RESE scale (RESE-R) for two reasons. First, given the unsatisfactory reliabilities found in Study 1, the German wording of ANG and DES items had to be revised. In contrast to Study 1, items were translated from Italian into German. Second, recent research had led to a revision of the original RESE scale (Caprara, Di Giunta, Pastorelli, & Eisenberg, 2011). The revised RESE scale comprises 10 of the 12 items of the original scale (POS: 4 items, DES: 3 items, ANG: 3 items), which we included in the German RESE-R (see Table 3). We aimed to document that improved item wording would provide satisfactory reliabilities, while preserving the factor structure and the correlations to life satisfaction and emotion-regulation strategies. Moreover, we aimed to test for cross-gender invariance of the revised scale.

Table 3. Scale items of the German RESE-R (German text in *italics*)

Scale	*How well can you . . ./*Wie gut gelingt es Ihnen, . . .
Self-efficacy in expressing positive emotions	(1) . . . rejoice over your successes? / . . . *sich über Ihre Erfolge zu freuen?* (2) . . . feel gratified over achieving what you set out to do? / . . . *zufrieden zu sein, wenn Sie das erreicht haben, was Sie sich vorgenommen hatten?* (3) . . . express joy when good things happen to you? / . . . *Freude zu zeigen, wenn Ihnen etwas Gutes passiert?* (4) . . . express enjoyment freely at parties? / . . . *auf Partys offen zu zeigen, dass Sie Spaß haben?*
Self-efficacy in regulating despondency/distress	(1) . . . keep from getting dejected when you are lonely? / . . . *sich vor Niedergeschlagenheit zu schützen, wenn die Personen, die Ihnen wichtig sind, Ihnen nicht beistehen können, wenn Sie sie brauchen?* (2) . . . keep from getting discouraged in the face of difficulties? / . . . *sich von Schwierigkeiten nicht entmutigen zu lassen?* (3) . . . keep from getting discouraged by strong criticism? / . . . *nicht den Mut zu verlieren, wenn Sie stark kritisiert werden?*
Self-efficacy in regulating anger/irritation	(1) . . . avoid flying off the handle when you get angry? / . . . *zu verhindern, dass Sie die Kontrolle über Ihr Handeln verlieren, wenn Sie wütend sind?* (2) . . . get over irritation quickly for wrongs you have experienced? / . . . *über Ärger hinwegzukommen, wenn Ihnen Unrecht getan wurde?* (3) . . . avoid getting upset when others keep giving you a hard time?/. . . *Ihre Wut im Zaum zu halten, wenn andere Menschen Ihnen das Leben schwer machen?*

Notes. German items refer to items used in Study 2 (German RESE-R). English items refer to corresponding items published by Caprara et al. (2008). Anchor items in Study 2 were items 1 of each subscale. In Study 1, ANG and DES subscales contained one additional item respectively (ANG: "manage negative feelings when reprimanded by your parents or significant others"; DES: "reduce your upset when you don't get the appreciation you feel you deserve?"). Anchor items in Study 1 were items 1 of the POS and DES subscales and the ANG item not used in Study 2.

Materials and Method

Participants

Participants were N = 144 mothers and N = 120 fathers (including 118 couples) of preschool children in Southern Germany. Participants were between 22 and 59 years old (women: M_{Age} = 38, SD = 5.44; men: M_{Age} = 41, SD = 5.43; based on information on 138 women and 117 men). Some 52% of the women and 64% of the men held at least a college degree (based on information on 126 women and 110 men). Participants received a EUR 5 gift certificate from a book store.

Measures

Self-Efficacy in Regulating Emotions

POS items were adopted from Study 1. DES and ANG items were translated from Italian to German by a native German speaker trained in psychology and backtranslated by a professional translator.

Life Satisfaction

A single-item measure was preferred because participants were required to complete several questionnaires for the larger study. Therefore, life satisfaction was assessed with the item "How satisfied are you currently with your life as a whole?" rated on an 11-point Likert scale from 0 (= *totally dissatisfied*) to 10 (= *totally satisfied*). This item has proved to be a valid measure (Fujita & Diener, 2005).

Emotion Regulation Strategies

Study 2 used a recently validated German version of the ERQ (Abler and Kessler, 2009). Again, participants used a 7-point Likert scale from 1 (= *strongly disagree*) to 7 (= *strongly agree*). Cronbach's αs were .82 for reappraisal and .61 for suppression.

Analytic Approach

We tested the best-fitting model from Study 1 (i.e., model 3a) with the data from our total sample. Again, we used MLR estimation to account for multivariate nonnormality (skewness: Srivastava's $b1p$ = 27.48 (10), p < .001; kurtosis (Mardia's $b2p$ = 131.08, p < .001). Since our sample contained parent couples, we used the clustering procedure available in Mplus 5.21 (Muthén & Muthén, 2009). Cross-gender measurement invariance was examined using multigroup analyses. Following the stepwise procedure suggested by Chen, Sousa, and West (2005), we tested a series of nested models to assess configural, metric, and scalar invariance. According to Steenkamp and Baumgartner (1998), at least one item besides the anchor item needs to be invariant on each factor to allow for comparisons of means between groups (partial invariance). Evaluation of model fit and treatment of missing data followed the procedures described in Study 1. The rate of missing data was below 4% per variable.

Results

Means and standard deviations for DES, ANG, and POS were 3.40 (0.68), 3.15 (0.75) and 4.25 (0.58), respectively. The internal consistencies of the summated scales were α (POS) = .79, α (DES) = .69, α (ANG) = .68, and α (NEG) (6 items) = .72.

Factor Structure and Cross-Gender Invariance

Model 3a from Study 1 represented a good model-data fit (see Table 1 for fit indices and Table 3 for information on anchor items). We then tested this model in a multiple-group approach with gender as a group variable. Fit indices were acceptable, SB-χ^2 (64) = 100.12, CFI = .94, RMSEA = .07, 90% CI [.04, .09], SRMR = .07. Thus, configural invariance was confirmed. When item loadings were constrained to be equal across gender, the change in Satorra-Bentler χ^2 was not significant, ΔSB-χ^2 (7) = 13.28, p = .07. Also, after imposing additional equality constraints for the loadings of ANG and DES on the second-order factor NEG, the model fit did not change significantly. Next, item intercepts were constrained to be equal across gender. Here, the test indicated that the model fit decreased significantly, ΔSB-χ^2 (7) = 18.85, p < .01. When equality constraints were lifted from item POS/3, the change in χ^2 became nonsignificant, ΔSB-χ^2 (6) = 11.26, p = .08. Last, equality constraints were imposed on the intercepts of ANG and DES, which led to a significant change in model fit, ΔSB-χ^2 (2) = 23.85, p < .001. When we tested partial scalar invariance on this level by lifting the equality constraint from the intercept of DES, the change in χ^2 became nonsignificant, ΔSB-χ^2 (1) = 1.47, p = .23. The fit indices for the second-order partial scalar invariance model were SB-χ^2 (79) = 127.70, CFI = .92, RMSEA = .07, 90% CI [.05, .09], and SRMR = .11.

Convergent Validity

As in Study 1, we correlated log-transformed RESE-R subscales with life satisfaction, reappraisal, and suppression. The results are shown in Table 2. Correlation coefficients refer to the total sample.

Conclusion

Study 2 examined the German RESE-R in a nonstudent sample. The factor structure found in Study 1 was success-

fully replicated. Internal consistencies were satisfying for all subscales. Full scalar invariance was supported for the ANG and DES factors. POS and the second-order factor NEG were found to be partially invariant. In line with our suggestions, we found positive associations of the RESE subscales with life satisfaction and reappraisal. Moreover, POS was negatively related to suppression.

Discussion

The goals of this research were to investigate the reliability, factor structure, and convergent validity of the German RESE scale, and to examine cross-gender invariance of the scale for German speakers. In Studies 1 and 2, CFAs revealed that self-efficacy in regulating emotions can be meaningfully described as consisting of two factors, self-efficacy in managing negative emotions (NEG) and self-efficacy in expressing positive emotions (POS). NEG was represented by two first order factors: self-efficacy in managing despondency/distress (DES) and self-efficacy in managing anger/irritation (ANG). These findings are consistent with those reported by Caprara et al. (2008) for Bolivian, U. S., and Italian samples. For statistical reasons, a model containing POS, DES, and ANG as three correlated factors would provide a similar fit as the model with a second-order factor NEG. However, the latter model includes the theoretically meaningful distinction between positive and negative emotions which is in line with previous theorizing and findings (Caprara et al., 2008). Internal consistencies could be substantially improved by the revised German RESE scale (RESE-R) used in Study 2. They were comparable to the internal consistencies of the Italian, Spanish, and English versions of the scales, which range from .64 to .85 (Caprara et al., 2008). Partial scalar cross-gender invariance of the German RESE-R was demonstrated in Study 2. Equality constraints could be maintained for all items of the DES and ANG subscales, and for all but one item of the POS subscale. According to Steenkamp and Baumgartner (1998), cross-gender comparisons of mean values of the POS, DES, and ANG factors are thus meaningful. Nevertheless, caution is necessary because estimated factor mean differences may differ depending on the anchor indicators chosen for the factor models (Vandenberg, 2002). Convergent validity of the RESE scale was investigated and confirmed in both studies. The significant positive correlations of POS, DES, and ANG with life satisfaction and reappraisal were consistent with our hypotheses. Furthermore, the suggested negative correlation between POS and suppression was supported by the data. In Study 1, we found an unexpected positive correlation between ANG and suppression. This might be due to the item that was excluded in Study 2 ("managing negative feelings when reprimanded by parents"), which may be related to suppression of anger in asymmetric relationships. However, considering the low internal consistency of ANG in Study 1, caution is warranted when interpreting this result. In Study 2, the association between ANG and suppression was not significant.

Limitations and Next Steps

Whereas participants in Study 1 as well as participants in previous studies in other countries (Caprara et al., 2008) were young adults in their early twenties, Study 2 covered a sample of adults who were the parents of preschool children. Basically, the general factor structure and the pattern of correlations found in Study 1 were replicated in Study 2. These findings indicate that the results concerning reliabilities and cross-gender invariance of the German RESE-R found in Study 2 might also apply to a population of younger adults. However, future studies should further explore the validity of the German RESE-R across samples varying in age and demographic background. In particular, caution is necessary when administering the scale to persons from different cultural backgrounds (Trommsdorff & Rothbaum, 2008). Moreover, the present research did not uncover the sources of the multivariate skewness of the RESE item distributions. Further studies should investigate whether scores might be biased by social desirability. Finally, even though the factor structure found in Italy, Bolivia, and the United States was replicated, systematic crosscountry investigations are needed.

Conclusions

Findings suggest that the RESE scale is a valid instrument to assess self-efficacy in expressing positive emotions and regulating negative ones in both men and women in German-speaking samples. As the revised version of the German scale showed better internal consistencies than the version of the scale used in Study 1, we recommend using the German RESE-R.

Acknowledgments

The authors' contributions are acknowledged in alphabetical order: Development of the study design and selection of instruments were carried out by Gian Vittorio Caprara, Maria Gerbino, Catherine Gunzenhauser, Tobias Heikamp, Antje von Suchodoletz, and Gisela Trommsdorff. Data collection was conducted by Catherine Gunzenhauser, Tobias Heikamp, and Antje von Suchodoletz. Statistical analyses were performed by Guido Alessandri and Catherine Gunzenhauser. The article was composed and revised by Guido Alessandri, Gian Vittorio Caprara, Laura Di Giunta, Maria Gerbino, Catherine Gunzenhauser, Tobias Heikamp, Antje von Suchodoletz, and Gisela Trommsdorff. Study 1 was

financed by a grant from the German Research Foundation (DFG) as a part of the project "Developmental Conditions of Intentionality" (Principal Investigator: Prof. Dr. Gisela Trommsdorff, DFG GZ, TR 169/14-2) within the interdisciplinary research group "Limits of Intentionality" (DFG Research Unit 582) at the University of Konstanz, Germany. Study 2 was financed by grants given to the Research Group "The Empirics of Education: Economic and Behavioral Perspectives" in the context of the German Initiative of Excellence at the University of Freiburg, Germany. We thank Eva Grunenberg, Natalie Hoffmann, and Antonia Skock for their great help with data collection and data preparation.

References

Abler, B., & Kessler, H. (2009). Emotion Regulation Questionnaire – Eine deutschsprachige Fassung des ERQ von Gross und John [Emotion Regulation Questionnaire – A German version of the ERQ by Gross and John]. *Diagnostica, 55,* 144–152. doi 10.1026/0012–1924.55.3.144

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & S. J. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage. doi 10.1177/0049124192021002005

Caprara, G. V., Di Giunta, L., Eisenberg, N., Gerbino, M., Pastorelli C., & Tramontano, C. (2008). Assessing regulatory emotional self-efficacy in three countries. *Psychological Assessment, 20*, 227–237. doi 10.1037/1040-3590.20.3.227

Caprara, G. V., Di Giunta, L., Pastorelli, C., & Eisenberg, N. (2011). *Mastery of negative affect: The hierarchical structure of self-efficacy beliefs related to discrete negative emotions.* Manuscript submitted for publication.

Caprara, G. V., & Gerbino, M. (2001). Autoefficacia Emotiva Percepita: La capacità di regolare l'affetività negative e di esprimere quella positive [Affective perceived self-efficacy: The perceived capacity to regulate negative affect and to express positive affect]. In G. V. Caprara (Ed.), *La valutazione dell'autoefficacia* (pp. 35–50). Trento, Italy: Edizioni Erickson.

Caprara, G., & Steca, P. (2005). Self-efficacy beliefs as determinants of prosocial behavior conductive to life satisfaction across ages. *Journal of Social and Clinical Psychology, 24*, 191–217. doi 10.1521/jscp.24.2.191.62271

Chen, F. F., Sousa, K. H., & West, S. G. (2005). Testing measurement invariance of second-order factor models. *Structural Equation Modeling, 12*, 471–492. doi 10.1207/s15328007sem1203_7

Davidov, M., & Grusec, J. E. (2006). Untangling the links of parental responsiveness to distress and warmth to child outcomes. *Child Development, 77,* 44–58. doi 10.1111/j.1467-8624.2006.00855.x

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49,* 71–75. doi 10.1207/s15327752jpa4901_13

Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., . . . Guthrie, I. K. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development, 72*, 1112–1134. doi 10.1111/1467-8624.00337

Fujita, F., & Diener, E. (2005). Life satisfaction set point: Stability and change. *Journal of Personality and Social Psychology, 88,* 158–164. doi 10.1037/0022–3514.88.1.158.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85,* 348–362. doi 10.1037/0022-3514.85.2.348

Gross, J. J., Richards, J. M., & John, O. P. (2006). Emotion regulation in everyday life. In D. K. Snyder, J. Simpson, & J. N. Hughes (Eds.), *Emotion regulation in couples and families: Pathways to dysfunction and health* (pp. 13–35). Washington, DC: American Psychological Association. doi 10.1037/11468-001037/11468-001

IBM SPSS Statistics. (2010). *SPSS Statistics version 19.0* [Computer software]. Somers, NY: IBM Corporation.

Kelloway, E. K. (1998). *Using LISREL for structural equation modeling: A researcher's guide.* Thousand Oaks, CA: Sage.

Knight, G. P., Guthrie, I. K., Page, M. C., & Fabes, R. A. (2002). Emotional arousal and gender differences in aggression: A meta-analysis. *Aggressive Behavior, 28*, 366–393. doi 10.1002/ab.80011

Lang, P. L. (1995). The emotion probe. *American Psychologist, 50*, 372–385. doi 10.1037//0003-066X.50.5.372

Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin, 131,* 803–855. doi 10.1037/0033-2909.131.6.803

Muthén, B., & Muthén, L. (2009). *Mplus* (Version 5.21) [Computer software]. Los Angeles, CA: Authors.

Nolen-Hoeksema, S., & Aldao, A. (2011). Gender and age differences in emotion-regulation strategies and their relationship to depressive symptoms. *Personality and Individual Differences, 51*, 704–708. doi 10.1016/j.paid.2011.06.012

O'Boyle, E. H., & Williams, L. J. (2011). Decomposing model fit: Measurement vs. theory in organizational research using latent variables. *Journal of Applied Psychology, 96*, 1–12. doi 10.1037/a0020539

Pavot, W., & Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment, 5*, 164–172. doi 10.1037/1040-3590.5.2.164

Satorra, A. (2000). Scaled and adjusted restricted tests in multisample analysis of moment structures. In R. D. H. Heijmans, D. S. G. Pollock, & A. Satorra (Eds.), *Innovations in multivariate statistical analysis: A Festschrift for Heinz Neudecker* (pp. 233–247). London: Kluwer. doi 10.2139/ssrn.189431

Sölva, M., Baumann, U., & Lettner, K. (1995). Wohlbefinden: Definitionen, Operationalisierungen, empirische Befunde [Well-being: Definitions, operationalizations, empirical results]. *Zeitschrift für Gesundheitspsychologie, 3,* 292–309. doi 10.1024/1421-0185/a000003

Sontag, L. M., & Graber, J. A. (2010). Coping with perceived peer stress: Gender-specific and common pathways to symptoms of psychopathology. *Developmental Psychology, 46*, 1605–1620. doi 10.1037/a0020617

Steenkamp, J. E. N., & Baumgartner, H. (1998). Assessing measurement invariance in cross-national consumer research. *Journal of Consumer Research, 25*, 78–90. doi 10.1086/209528

Tamres, L. K., Janicki, D., & Helgeson, V. S. (2002). Sex differences in coping behavior: A meta-analytic review and an ex-

amination of relative coping. *Personality and Social Psychology Review, 6*, 2–30. doi 10.1207/S15327957PSPR0601_1

Trommsdorff, G., & Rothbaum, F. (2008). Development of emotion regulation in cultural context. In M. Vandekerckhove, C. v. Scheve, S. Ismer, S. Jung, & S. Kronast (Eds.), *Regulating emotions: Culture, social necessity, and biological inheritance* (pp. 85–120). Malden, MA: Blackwell. doi 10.1002/9781444301786.ch4

Vandenberg, R. J. (2002). Toward a further understanding of improvement in measurement invariance methods and procedures. *Organizational Research Methods, 5,* 139–158. doi 10.1177/1094428102005002001

Published online: July 20, 2012

Catherine Gunzenhauser

Research Group "The Empirics of Education"
University of Freiburg
Starkenstr. 44
79085 Freiburg
Germany
Tel. +49 761 2039-7589
Fax +49 761 2039-7592
E-mail catherine.gunzenhauser@psychologie.uni-freiburg.de

