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SOCIAL COMPARISON, ENVY, AND DEPRESSION ON FACEBOOK: A STUDY LOOKING AT THE EFFECTS OF HIGH COMPARISON STANDARDS ON DEPRESSED INDIVIDUALS

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The co-occurrence of depression and envy is both plausible and empirically established. However, little is known about the mechanisms underlying this correlation. An account is proposed according to which low self-esteem in depressed individuals leads to upward social comparison and thus makes envy more likely. This effect should frequently occur in online social networks like Facebook because they allow for easy impression management and hence provide high comparison standards. In a quasi-experimental online study, depressed and nondepressed participants indicated their self-esteem and were then presented with specifically set up Facebook profiles that were either attractive or unattractive. Participants were asked to compare themselves to the profile owner and to report their resulting feelings of inferiority and envy. Depressed participants were more envious, especially after seeing the attractive profile. Envy was associated with higher self-reported inferiority and also correlated negatively with self-esteem. The connection between depression and envy is demonstrated with an experimental elicitation of envy for the first time. The results strongly suggest that low self-esteem and consequent feelings of inferiority play a crucial role in depressed individuals' elevated levels of envy. Practical implications and limitations are discussed.

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As online social networks (OSN) are gaining in popularity, a phenomenon termed "Facebook envy" seems to be on the rise (Krasnova, Wenninger, Widjaja, & Buxmann, 2013): the frustration of logging into an OSN and being flooded with friends' notifications showing perfect happiness and flawless lives. Seeing that others are seemingly better off than oneself is aversive for most people (Jordan et al., 2010). Arguably, this phenomenon might affect already depressed individuals even more. Several studies have found a positive relationship between envy and depression (Cohen-Charash, 2009; Gold, 1996; Smith et al., 1996). Even though a lot has been speculated about how envy can cause depression (Gold, 1996; Smith & Kim, 2007), so far, no research has investigated whether depression can lead to envy. The present study investigates this idea by specifically looking at abnormal social comparison processes that are likely to come with depression (Swallow & Kuiper, 1988).

Regarding another person as superior to oneself on a certain dimension (upward social comparison) is crucial to envy (Smith & Kim, 2007). Social comparison processes of depressed or dysphoric individuals typically deviate in dysfunctional ways (Swallow & Kuiper, 1988) that are likely to cause envy. This refers to their increased comparison frequency (Butzer & Kuiper, 2006; Gibbons & Buunk, 1999; Heidrich & Ryff, 1993), their worse evaluation of themselves compared to comparison targets (Albright, Alloy, Barch, & Dykman, 1993; Buunk & Brenninkmeyer, 2000), and the stronger negative impact of unflattering comparisons (Albright & Henderson, 1995; Lyubomirsky & Ross, 1997; McFarland & Miller, 1994).

These distortions have been attributed to low self-esteem (Wood & Lockwood, 1999). Consistent with this reasoning, self-esteem is also associated with increased dispositional envy (Smith, Parrott, Diener, Hoyle, & Kim, 1999). Given that low self-esteem is a common symptom of depression (e.g., Sowislo & Orth, 2013), pathologically biased social comparison processes in depressed individuals are not surprising (Buunk & Brenninkmeyer, 2000). In consequence, depressed individuals should be particularly vulnerable to experiencing envy. To our knowledge, this complete line of thought has not been investigated yet.

Since OSNs offer abundant opportunities for impression management, such as the selection and editing of posts and pictures (Ellison, Heino, & Gibbs, 2006; Krämer & Winter, 2008), and because they make social comparison highly salient (Haferkamp & Krämer, 2011), they may be a high-risk environment for depressed individu-

als. Indeed, feelings of envy (Chou & Edge, 2012; Krasnova et al., 2013) and depression (Feinstein, Bhatia, Hershenberg, & Davila, 2012; Kross et al., 2013) have been linked to OSN exposure. No research, however, has combined these emotional phenomena to observe how depressed individuals react to an experimental envy manipulation in an OSN context.

The present online study helps clarify the association between depression and envy. In a quasi-experimental design, depressed and nondepressed participants compared themselves to an OSN profile and indicated their level of envy. We predicted that depressed individuals would feel more inferior and envious, particularly when faced with an attractive profile. Also, we expected envy to be correlated with inferiority in social comparison, low self-esteem, and depressiveness, highlighting the role of distorted social comparison.

METHODS

PARTICIPANTS

A request to participate was distributed online to a German sample, including depression self-help websites. A lottery for a €30 Euro shopping voucher was offered for compensation. Only complete data sets were considered for analysis. The 130 participants who completed the study were assigned to the depressed or the control group according to their BDI-V scores (Schmitt & Maes, 2000; cut-off score = 35, as suggested by Schmitt, Altstötter-Gleich, Hinz, Maes, & Brähler, 2006). After identifying depressed participants, roughly the same number of control participants were randomly selected out of the remaining sample. No other participants had to be excluded. The resulting sample size was 89 (mean age = 27.45 yrs., SD = 8.10, 76 female) with 44 depressed and 45 nondepressed control participants. BDI-V scores were higher in the depressed group than in the control group, M = 20.56 (SD = 7.94) vs. M = 51.66 (SD = 11.40), $t(76.61) = -14.90$, $p < .001$, $d = 3.40$. For the demographic variables, χ^2-tests showed no differences between the samples except for employment status and educational level (see Table 1). Because envy values deviated from normal distribution and group sizes in the demographic categories were heterogeneous, Kruskal-Wallis-tests were applied to test their influence on envy. However, neither occupational status, $H(2) = 4.20$, $p = .12$, nor education level, $H(2) =$

TABLE 1. Participant Characteristics

Variable	Depressed *n* (%)		Nondepressed *n* (%)		χ^2	*df*	*p*
N	44	(49.44)	45	(50.56)	—	—	—
Gender							
Female	35	(39.33)	41	(46.07)			
Male	9	(10.11)	4	(4.49)	2.39	1	.12
Marital status[a]							
Single/divorced/widowed	19	(21.35)	15	(16.85)			
In a relationship	21	(23.60)	24	(27.00)			
Married	4	(4.50)	6	(6.74)	1.06	2	.59
Education level[a]							
Technical diploma or lower	13	(14.61)	1	(1.12)			
University qualification	23	(25.84)	23	(25.84)			
University degree	8	(8.99)	21	(23.60)	16.10	2	<.001
Employment status[a]							
Unemployed	8	(8.99)	1	(1.12)			
Training/studying	21	(23.60)	33	(37.08)			
Employed/freelancing	15	(16.85)	11	(12.36)	8.72	2	.01
Number of Facebook friends							
Fewer than 100	23	(25.84)	21	(23.60)			
100–200	7	(7.87)	13	(14.61)			
200–300	7	(7.87)	3	(3.37)			
More than 300	7	(7.87)	8	(8.99)	3.55	3	.32
Received messages/notifications							
Fewer than 1 per week	9	(10.11)	9	(10.11)			
1 per week	7	(7.87)	8	(8.99)			
Several per week	15	(16.85)	16	(17.98)			
1–10 per day	13	(14.61)	11	(12.36)			
More than 10 per day	0	(0.00)	1	(1.12)	1.26	4	.87

Note. Absolute numbers are given in the left columns, percentages in the right columns (in brackets). [a] Some categories were combined to calculate χ^2-tests.

2.67, $p = .26$, was related to envy. Table 1 gives an overview of the relevant variables describing the sample.

MATERIALS AND MEASURES

OSN Profiles. Stimulus profiles were constructed by editing the HTML source code of real Facebook profiles, resulting in realistic profiles with controlled noninteractive content. They were included

as picture files in the study. Two attractive and two unattractive profiles (one male and one female per condition) were created. The profiles were shown from the owner's perspective as if logging into Facebook.

Whereas the structure of the profiles was kept constant, almost all content differed between conditions. Profiles were made to look more or less attractive by manipulating crucial profile content, such as job and education, friends, likes, and comments. In all photos, the attractive profile owner's appearance was more appealing. Because similarity makes envy more likely to occur (Salovey & Rodin, 1984), owners were chosen to roughly fall into the age group of the intended sample, and participant and profile gender were matched. Different gender profiles in the same attractiveness condition were kept constant except for some photos and names.

Attractiveness. As an attractiveness manipulation check, participants indicated how attractive they thought the profile owner was on a 7-point Likert-type scale ranging from 0 (not at all attractive) to 6 (perfectly attractive).

Social Comparison. A personally relevant comparison dimension is a precondition for envy (e.g., Schaubroeck & Lam, 2004). Happiness was chosen as a relevant and general dimension, comprising all information given in the profile. Participants were asked to rate how happy they thought the profile owner was on an 8-point Likert-type scale (from 0 = not at all happy to 7 = perfectly happy), and how happy they thought the profile owner was compared to themselves on an 8-point Likert-type scale (from -4 = much unhappier to 4 = much happier), with negative scores indicating a sense of inferiority and positive scores indicating subjective superiority in terms of happiness.

Envy. Based on features of envy found in the literature (Parrott & Smith, 1993; Smith & Kim, 2007), seven items were constructed. Participants indicated how envious, inferior, bitter, and disadvantaged they felt when seeing the profile, and to what extent they wanted to change roles with, wished to be like, and felt inspired by the profile owner. All items were rated on 7-point Likert-type scales (from 0 = not at all to 6 = perfectly). Items were averaged to form the central dependent variable (Cronbach's $\alpha = .88$).

Depressiveness. Depressiveness (Cronbach's $\alpha = .92$) was measured using the German Simplified Beck Depression Inventory (BDI-V; Schmitt & Maes, 2000).

Self-Esteem. The German version of the Rosenberg Self-Esteem Scale (SES, von Collani & Hertzog, 2003) captured self-esteem (Cronbach's $\alpha = .94$).

PROCEDURE

Participants were told that the focus of the study was on the effect of Facebook profiles on various groups of people. No reference was made to envy or depression, although the latter may have been obvious due to the recruitment method. They then completed the BDI-V and the SES and indicated their age and gender. A text followed announcing that participants would see an actual profile that was randomly chosen and that they would later be asked to rate the profile owner in terms of happiness to ensure comprehensive examination. The profile was then available for examination with no time limit, but for at least one minute. Afterwards, participants rated the owner's attractiveness and happiness and indicated their envy.[1]

Participants were repeatedly reminded of the anonymity and purely scientific use of responses and that there were no right or wrong answers. At the end, socio-demographics were collected and participants were thanked and debriefed.

RESULTS

All means are displayed in Table 2. ANOVAs with the factors Depression (depressed vs. non-depressed individuals) and Profile Attractiveness (attractive vs. unattractive), and Pearson correlations were calculated.

1. Nonanalyzed filler items to veil the focus on envy and other items that were only of exploratory interest were included, e.g., whether participants were worried about Facebook's privacy policy (filler item), or how similar they felt to the profile owner (exploratory item). All items can be obtained upon request.

TABLE 2. Means of the Dependent Variables by Condition, Factor, and Variable

	Depressed (n = 44)		Nondepressed (n = 45)		Total	
Variable	***M***	**(*SD*)**	***M***	**(*SD*)**	***M***	**(*SD*)**
Attractiveness						
Attractive profile	4.35	(1.04)	4.38	(0.97)	4.36	(0.99)
Unattractive profile	1.75	(1.03)	1.48	(0.98)	1.62	(1.01)
Total	2.93	(1.66)	3.02	(1.75)	2.98	(1.70)
Happiness absolute						
Attractive profile	4.90	(1.68)	4.92	(1.50)	4.91	(1.57)
Unattractive profile	3.75	(1.23)	3.90	(1.00)	3.82	(1.11)
Total	4.27	(1.55)	4.44	(1.37)	4.36	(1.46)
Happiness comparative						
Attractive profile	2.40	(1.57)	0.46	(1.74)	1.34	(1.91)
Unattractive profile	0.88	(1.96)	-1.00	(1.14)	0.00	(1.87)
Total	1.57	(1.93)	-0.22	(1.65)	0.66	(2.00)
Envy						
Attractive profile	1.91	(1.41)	0.71	(0.71)	1.26	(1.23)
Unattractive profile	0.64	(0.58)	0.27	(0.30)	0.47	(0.50)
Total	1.22	(1.21)	0.50	(0.59)	0.86	(1.01)

Note. Attractiveness = "How attractive do you think the profile owner is?", from 0 (not at all) to 6 (perfectly); Happiness absolute = "How happy do you think the profile owner is?", from 0 (not at all happy) to 7 (perfectly happy); Happiness comparative = "How happy do you think the profile owner is compared to yourself?", from -4 (much unhappier) to 4 (much happier); Envy = composite score of the envious, inferior, bitter, and disadvantaged items, as well as the wish to change roles with, wish to be like, and feel inspired by the profile owner items, from 0 (not at all) to 6 (perfectly).

MANIPULATION CHECK

The attractive profile owner was rated as being significantly more attractive than the unattractive one, $F(1, 85) = 167.10$, $p < .001$, $\eta_p^2 = .66$. No significant effects were found for depression or the interaction (all $Fs < 1$, *n.s.*).

SOCIAL COMPARISON

The analysis of the profile owner's happiness ratings yielded a significant main effect for Profile Attractiveness, $F(1, 85) = 13.73$, $p < .001$, $\eta_p^2 = .14$, but neither a main effect for Depression, nor an interaction effect (all $Fs < 1$, *n.s.*). Comparative happiness ratings were also higher for the attractive profile owner compared to the

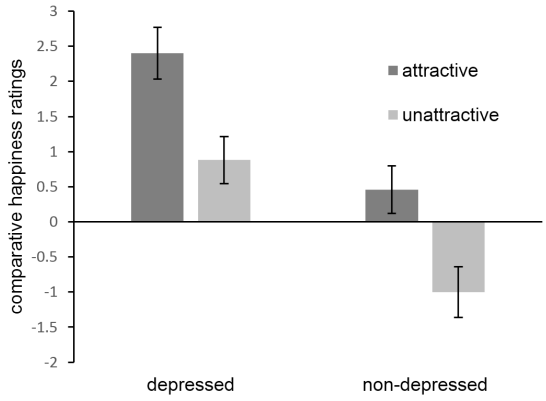

FIGURE 1. Mean comparative happiness ratings per condition with error bars (standard error of the mean). Ratings above zero indicate that the target was rated as superior. Nondepressed participants rated only the attractive target as slightly superior. Depressed participants rated even the unattractive target to be superior.

unattractive one, $F(1, 85) = 18.07$, $p < .001$, $\eta_p^2 = .18$, with values above 0 indicating superior happiness and values below 0 indicating inferior happiness compared to the participants. More crucially, depressed participants rated any profile owner happier relative to themselves compared to non-depressed participants, $F(1, 85) = 29.57$, $p < .001$, $\eta_p^2 = .26$, indicating higher perceived inferiority. No interaction emerged ($F < 1$, *n.s.*). Cell means are depicted in Figure 1.

ENVY

Envy was higher after seeing an attractive profile, $F(1, 85) = 23.33$, $p < .001$, $\eta_p^2 = .22$. At the same time, depressed participants were more envious, $F(1, 85) = 19.89$, $p < .001$, $\eta_p^2 = .19$. Additionally, a significant interaction was found, $F(1, 85) = 5.58$, $p = .02$, $\eta_p^2 = .06$. As is apparent in Figure 2, the envy reaction to the attractive profile was more pronounced in the depressed group than would have been expected for a purely additive combination of the factors.

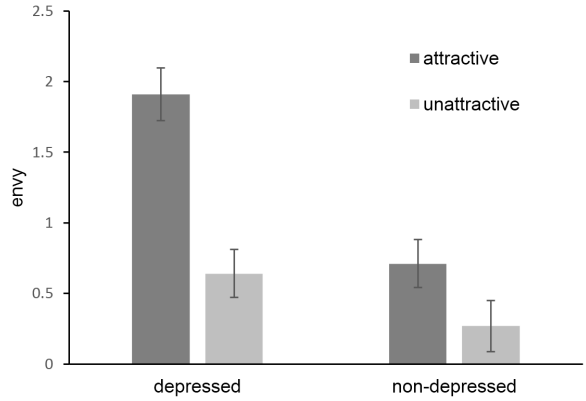

FIGURE 2. Mean envy ratings per condition with error bars (standard error of the mean). Higher ratings indicate higher levels of envy. Depressed participants indicated more envy than nondepressed participants, especially after seeing an attractive profile.

CORRELATIONS WITH ENVY

As predicted, envy was substantially correlated with depressiveness as measured by BDI-V total scores, $r = .38$, $p < .001$, with self-esteem, captured by the SES, $r = -.39$, $p < .001$, and with self-report inferiority, operationalized as the degree to which participants thought the profile owner was happier than themselves, $r = .49$, $p < .001$.

DISCUSSION

The findings demonstrate that depressiveness is associated with higher levels of envy, especially when comparison standards are high. Moreover, social comparison seems to play a crucial role in this phenomenon. As predicted, not only did the depressed group report more feelings of inferiority in the social comparison, but inferiority also predicted envy substantially. Furthermore, envy was correlated with depressive symptoms and, negatively, with self-esteem.

For the first time, envy reactions to controlled stimuli were compared between depressed and nondepressed participants. The results shed a new light on the mechanisms underlying intensified envy in depression, which has so far, if at all, mostly been interpreted by envy causing depression (Gold, 1996; Smith & Kim, 2007). In contrast, in our study pre-manipulation BDI-V scores predicted envy reactions, and envy was particularly high for depressed individuals presented with an attractive profile. This suggests that existing depressiveness influenced processing of envy-relevant stimuli. The pattern of results lends strong plausibility to low self-esteem and comparison bias contributing to envy, which puts the depressed at a higher risk for this negative emotion.

Notably, as opposed to earlier studies on social comparison in depression (e.g., Ahrens, 1991; Albright et al., 1993; Bäzner, Brömer, Hammelstein, & Meyer, 2006) the present research takes several measures to ensure a realistic yet experimentally sound operationalization of social comparison. These include (a) explicitly requiring a comparison, (b) providing a controlled comparison standard, and (c) refraining from artificial objective ranks to manipulate superiority or inferiority. Despite the absence of any explicit specification of inferiority or superiority, an inferiority effect clearly emerged for depressed participants. This was true although depressed individuals did not overestimate targets and although potentially relevant sample differences were controlled for.

The results also support our reasoning that OSN contents with their boastful atmosphere are especially effective at producing envy in depressed users. Choosing an OSN environment for investigation moreover contributes to the understanding of virtual social behavior, a research area that is still in an early stage, despite its growing importance (Wilson, Gosling, & Graham, 2012).

Obviously, causal interpretations must be made with caution due to the non-manipulability of depression. In an attempt to eliminate a number of potential confounds, various sample differences were controlled for. An experimental manipulation of self-esteem (cf. Riketta & Dauenheimer, 2003) might further corroborate the causal chain assumed here. Overall, participants indicated low levels of envy. That being said, it is important to remember that envy is a highly undesirable emotion which is usually not easily admitted (Crusius & Mussweiler, 2012; Smith et al., 1999). Thus, in the case of envy mean differences between groups are more revealing than

absolute values. No gender effects could be investigated, as only 15% of participants were male.

The scarcity of existing evidence does not do justice to the relevance of envy in depression, as mirrored by the considerable effect sizes we found. This is all the more surprising as envy itself is distressing and may help to sustain depression (Cohen-Charash, 2009). Results suggest that treatments targeting depression should take social comparison processes into account, especially in individuals with high OSN usage. Since online social media are already part of most people's lives, interventions should include educational elements highlighting potential pitfalls of this use. This could be achieved in various ways, for example, by raising awareness of positive impression management in OSNs or by advising depressed users to avoid certain comparison standards altogether.

To conclude, depressed participants were found to have a lower threshold for envy and were particularly vulnerable to high comparison standards. The results suggest that distorted social comparison and low self-esteem substantially contribute to this effect. The depressed should be made aware of the risks entailed in social comparison, especially in online social media.

REFERENCES

Ahrens, A. H. (1991). Dysphoria and social comparison: Combining information regarding others' performances. *Journal of Social and Clinical Psychology, 10*, 190–205. doi:10.1521/jscp.1991.10.2.190

Albright, J. S., Alloy, L. B., Barch, D., & Dykman, B. M. (1993). Social comparison by dysphoric and nondysphoric college students: The grass isn't always greener on the other side. *Cognitive Therapy and Research*, *17*, 485–509. doi:10.1007/BF01176075

Albright, J. S., & Henderson, M. C. (1995). How real is depressive realism? A question of scales and standards. *Cognitive Therapy and Research*, *19*, 589–609. doi:10.1007/BF02230515

Bäzner, E., Brömer, P., Hammelstein, P., & Meyer, T. D. (2006). Current and former depression and their relationship to the effects of social comparison processes. Results of an internet based study. *Journal of Affective Disorders*, *93*, 97–103. doi:10.1016/j.jad.2006.02.017

Butzer, B., & Kuiper, N. A. (2006). Relationships between the frequency of social comparisons and self-concept clarity, intolerance of uncertainty, anxiety, and depression. *Personality and Individual Differences*, *41*, 167–176. doi:10.1016/j.paid.2005.12.017

Buunk, B. P., & Brenninkmeyer, V. B. (2000). Social comparison processes among depressed individuals: Evidence for the evolutionary perspective on involuntary subordinate strategies? In L. Sloman & P. Gilbert (Eds.), *Subordination and*

defeat: An evolutionary approach to mood disorders and their therapy (pp. 147–164). Mahwah, NJ: Lawrence Erlbaum.

Chou, H.-T. G., & Edge, N. (2012). "They are happier and having better lives than I am": The impact of using Facebook on perceptions of others' lives. *Cyberpsychology, Behavior, and Social Networking*, *15*, 117–121. doi:10.1089/cyber.2011.0324

Cohen-Charash, Y. (2009). Episodic envy. *Journal of Applied Social Psychology*, *39*(9), 2128–2173. doi:10.1111/j.1559-1816.2009.00519.x

Crusius, J., & Mussweiler, T. (2012). When people want what others have: The impulsive side of envious desire. *Emotion*, *12*, 142–153. doi:10.1037/a0023523

Ellison, N., Heino, R., & Gibbs, J. (2006). Managing impressions online: Self-presentation processes in the online dating environment. *Journal of Computer-Mediated Communication*, *11*(2), 415–441. doi:10.1111/j.1083-6101.2006.00020.x

Feinstein, B. A., Bhatia, V., Hershenberg, R., & Davila, J. (2012). Another venue for problematic interpersonal behavior: The effects of depressive and anxious symptoms on social networking experience. *Journal of Social and Clinical Psychology*, *31*, 356–382. doi:10.1521/jscp.2012.31.4.356

Gibbons, F. X., & Buunk, B. P. (1999). Individual differences in social comparison: Development of a scale of social comparison orientation. *Journal of Personality and Social Psychology*, *76*, 129–142. doi:10.1037/0022-3514.76.1.129

Gold, B. T. (1996). Enviousness and its relationship to maladjustment and psychopathology. *Personality and Individual Differences*, *21*, 311–321. doi:10.1016/0191-8869(96)00081-5

Haferkamp, N., & Krämer, N. C. (2011). Social comparison 2.0: Examining the effects of online profiles on social-networking sites. *Cyberpsychology, Behavior, and Social Networking*, *14*, 309–314. doi:10.1089/cyber.2010.0120

Heidrich, S. M., & Ryff, C. D. (1993). The role of social comparisons processes in the psychological adaptation of elderly adults. *Journal of Gerontology*, *48*, 127–136. doi:10.1093/geronj/48.3.P127

Jordan, A. H., Monin, B., Dweck, C. S., Lovett, B. J., John, O. P., & Gross, J. J. (2010). Misery has more company than people think: Underestimating the prevalence of others' negative emotions. *Personality and Social Psychology Bulletin*, *37*, 120–135. doi:10.1177/0146167210390822

Krämer, N. C., & Winter, S. (2008). Impression management 2.0: The relationship of self-esteem, extraversion, self-efficacy, and self-presentation within social networking sites. *Journal of Media Psychology: Theories, Methods, and Applications*, *20*, 106–116. doi:10.1027/1864-1105.20.3.106

Krasnova, H., Wenninger, H., Widjaja, T., & Buxmann, P. (2013, February). *Envy on Facebook: A hidden threat to users' life satisfaction?* Paper presented at the 11th International Proceedings Wirtschaftsinformatik, Leipzig, Germany.

Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D. S., Lin, N. et al. (2013). Facebook use predicts declines in subjective well-being in young adults. *PLoS ONE*, *8*(8): e69841. doi:10.1371/journal.pone.0069841

Lyubomirsky, S., & Ross, L. (1997). Hedonic consequences of social comparison: A contrast of happy and unhappy people. *Journal of Personality and Social Psychology*, *73*, 1141–1157. doi:10.1037/0022-3514.73.6.1141

McFarland, C., & Miller, D. T. (1994). The framing of relative performance feedback: Seeing the glass as half empty or half full. *Journal of Personality and Social Psychology*, *66*, 1061–1073. doi:10.1037/0022-3514.66.6.1061

Parrott, W. G., & Smith, R. H. (1993). Distinguishing the experiences of envy and jealousy. *Journal of Personality and Social Psychology*, *64*, 906–920. doi:10.1037/0022-3514.64.6.906

Riketta, M., & Dauenheimer, D. (2003). Manipulating self-esteem with subliminally presented words. *European Journal of Social Psychology*, *33*, 679–699. doi:10.1002/ejsp.179

Salovey, P., & Rodin, J. (1984). Some antecedents and consequences of social-comparison jealousy. *Journal of Personality and Social Psychology*, *47*, 780–792. doi:10.1037/0022-3514.47.4.780

Schaubroeck, J., & Lam, S.S.K. (2004). Comparing lots before and after: Promotion rejectees' invidious reactions to promotees. *Organizational Behavior and Human Decision Processes*, *94*, 33–47. doi:10.1016/j.obhdp.2004.01.001

Schmitt, M., Altstötter-Gleich, C., Hinz, A., Maes, J., & Brähler, E. (2006). Normwerte für das Vereinfachte Beck-Depressions-Inventar (BDI-V) in der Allgemeinbevölkerung. *Diagnostica*, *52*, 51–59. doi:10.1026/0012-1924.52.2.51

Schmitt, M., & Maes, J. (2000). Vorschlag zur Vereinfachung des Beck-Depressions-Inventars (BDI). *Diagnostica*, *46*, 38–46. doi:10.1026//0012-1924.46.1.38

Smith, R. H., & Kim, S. H. (2007). Comprehending envy. *Psychological Bulletin*, *133*, 46–64. doi:10.1037/0033-2909.133.1.46

Smith, R. H., Parrott, W. G., Diener, E. F., Hoyle, R. H., & Kim, S. H. (1999). Dispositional envy. *Personality and Social Psychology Bulletin*, *25*, 1007–1020. doi:10.1177/01461672992511008

Smith, R. H., Turner, T. J., Garonzik, R., Leach, C. W., Urch-Druskat, V., & Weston, C. M. (1996). Envy and schadenfreude. *Personality and Social Psychology Bulletin*, *22*, 158–168. doi:10.1177/0146167296222005

Sowislo, J., & Orth, U. (2013). Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. *Psychological Bulletin*, *139*, 213–240. doi:10.1037/a0028931

Swallow, S. R., & Kuiper, N. A. (1988). Social comparison and negative self-evaluations: An application to depression. *Clinical Psychology Review*, *8*, 55–76. doi:10.1016/0272-7358(88)90049-9

Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, *103*, 193–210. doi:10.1037/0033-2909.103.2.193

Von Collani, G., & Herzberg, P. (2003). Eine revidierte Fassung der deutschsprachigen Skala zum Selbstwertgefühl von Rosenberg. *Zeitschrift für Differentielle und Diagnostische Psychologie*, *24*, 3–7. doi:10.1024//0170-1789.24.1.3

Wilson, R. E., Gosling, S. D., & Graham, L. T. (2012). A review of Facebook research in the social sciences. *Perspectives on Psychological Science*, *7*, 203–220. doi:10.1177/1745691612442904

Wood, J. V., & Lockwood, P. (1999). Social comparisons in dysphoric and low self-esteem people. In R. M. Kowalski, M. R. Leary (Eds.), *The social psychology of emotional and behavioral problems: Interfaces of social and clinical psychology* (pp. 97–135). Washington, DC: American Psychological Association. doi:10.1037/10320-004