Sharing Experiences Online: When Peer Responses Decrease the Negative Impact of Emotional Disclosure Writing

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Abstract

Online support group participation is beneficial for psychological and physical wellbeing, but little is known about the processes that bring about such positive changes. The present study tests the effects of two key-elements in forum use: (1) expressive writing and (2) the interactive aspect; responses from peers. Hypotheses were tested in a 2 (Writing style: cognitive reappraisal vs. emotional disclosure) x 3 (Response type: cognitive reappraisal vs. socio-affective vs. no response) factorial design among 117 participants. Results showed that receiving a cognitive reappraisal response, rather than a socio-affective response or no response, decreased negative emotions and symptom reporting in the emotional disclosure writing group and had no effects in the cognitive reappraisal writing group. Cognitive reappraisal responses in support groups may be most effective because they provide a positive way out of negative emotions.

Keywords: expressive writing; emotional disclosure; cognitive reappraisal; online support groups; peer responses; regulation needs.
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Individuals turn online to look for information about health- or mental related issues (Rice, 2006). A rapidly increasing number of support groups provide users with ample opportunities to share their personal stories online. Research suggests that participating in online support groups is positively related to self-reported psychological wellbeing, for example decreased depression, loneliness, stress, and stronger positive emotions (Fernsler & Manchester, 1997; Gustafson et al., 1994; Klemm et al., 2003; Lieberman et al., 2003; McTavish, Gustafson, Owens, Wise, & Taylor, 1994; Uden-Kraan et al., 2009; Winzelberg et al., 2003). However, to date, the online environment is mostly treated as a ‘black box’, and little is known about how exactly potential positive effects of forum-use come about: what makes writing about a negative experience online beneficial? The present study examines two potential explanations: expressive writing and feedback from peers.

In the next section, we will draw on the expressive writing literature and literature on sharing emotions in order to examine the effects of sharing experiences about a negative life event in an online environment. Next, we will present an experiment that tests the effects of writing style and feedback from peers on psychological and physical wellbeing.

Expressive writing

More information regarding the beneficial effects of writing can be found in the expressive-writing literature, which generally examines the effects of writing in an offline setting. In expressive writing experiments, participants are asked to write about
their deepest thoughts and feelings about a stressful event that has affected them and their life, in multiple sessions for 15-30 minutes (for the explicit assignment, see Pennebaker, 1997). Research has shown that such offline writing about emotional life events positively affects psychological and physical health over time (e.g., Pennebaker, 1997; Pennebaker, 2000; Pennebaker & Beall, 1986; Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Peterkin & Prettyman, 2009; Smyth, Stone, Hurewitz, & Kaell, 1999). It appears that merely writing about a negative experience has a remarkable influence on physical and psychological wellbeing.

Different theories exist regarding the psychological processes that elicit these positive outcomes. The first explanation points out that verbalizing an emotional memory can transform and reduce its emotional load. Zech (2000) found that almost 90% of the people believe that talking about negative experiences is relieving. However, other studies suggest that reactivating the memory of the experience increases the intensity of emotions, and a relieving-effect immediately after expression does not exist. Rimé et al. (1998) investigated this process by measuring (1) the initial intensity of the emotion elicited by an experience, (2) the extent of social sharing afterwards, and (3) the intensity of the emotion elicited when the memory of the experience was reactivated later. Against their expectations, their data never supported any emotional recovery following the social sharing of the emotional event. Apparently, verbalizing itself is not sufficient for emotional recovery.

Another line of reasoning suggests that writing forces people to cognitively reevaluate their life circumstances. These cognitive changes allow individuals to begin to think about and use their social worlds differently, and come to new solutions or acceptance. Writing helps people to get used to or feel more comfortable with the feelings associated with a traumatic event, which allows cognitive reorganization, and
eventually leads to a reduction of physical reactions related to inhibition or obsessive thinking (e.g., Pennebaker & Chung, 2007). These findings suggest that emotional expression is a catalyst, which starts the psychological process to eventually - to a certain extent - overcome the trauma.

To gain more insight into the underlying psychological mechanisms of writing, Lu and Stanton (2010) manipulated different writing styles in an experimental study. Participants were randomly assigned to one of four writing conditions (20-min writing assignments over 3 sessions): emotional disclosure, cognitive reappraisal, the combination of emotional disclosure (first session) and cognitive reappraisal (second and third session), or the control condition. Instructions for the emotional disclosure group focused on participants’ deepest emotions about a current most stressful experience that has affected them and their lives. The cognitive reappraisal group was instructed to write about positive and negative consequences of a current most stressful event, their perceptions of the stressful event, challenges and opportunity arising from the event, cognitive reappraisal of their coping strategies and their positive thoughts about the stressors.

Results revealed that cognitive reappraisal writing reduced physical symptoms, emotional disclosure buffered a decrease in positive affect over time, and the combination of emotional disclosure and cognitive reappraisal was most effective on both physical symptoms and positive affect. According to Lu and Stanton (2010) cognitive reappraisal is a critical factor in reducing the impact of stress and a mediator in the beneficial effects of expressive writing. They suggest that by stimulating thinking about the stressor, promoting habituation and encouraging efforts to manage demands associated with the stressor, emotional disclosure is likely to facilitate cognitive reappraisal, but might not necessarily lead to physical health benefits.
Next to offline writing in an experimental situation, a few studies suggest that also on online forums writing style is associated to psychological wellbeing. A study using a word counting program showed that a greater expression of anger improved participants’ quality of life and decreased depression. In contrast, expression of fear and anxiety had a negative effect on their wellbeing (Lieberman & Goldstein, 2008). Another study showed that written insight related words in an online support group (i.e., words suggestive of learning or understanding, for example aware, feel, know, realize, see, think, and understand, improved emotional wellbeing and reduced negative mood (Shaw, Hawkins, McTavish, Pingree, & Gustafson, 2006).

These findings seem to support the idea that both emotional expression and cognitive reorganization are associated with the beneficial effects of writing in an experimental setting and in online forums. In the current study, we combine the two methods to see if the existing experimental writing conditions used by Lu and Stanton (2010) elicit the same word use that is found in online forums. Specifically, we expected that (H1a) a cognitive reappraisal writing assignment elicits the use of more cognitive mechanism words (words indicating causation (e.g., because, depend), insight (e.g., know, explain), discrepancy (e.g., should, would), inhibition (e.g., block, conflict), tentativeness (e.g., perhaps, might), and certainty (e.g., always, never) compared to the emotional disclosure assignment. In addition, (H1b) the emotional disclosure assignment is focused on writing about deepest emotions, which is expected to result in the use of more words indicating negative emotions (e.g. sad, hate, hurt, guilty) compared to the cognitive reappraisal writing assignment (word categories LIWC; Pennebaker, 1993; Zijlstra, van Meerveld, van Middendorp, Pennebaker, & Geenen, 2004).
Previously mentioned studies showed that cognitive reappraisal writing reduces physical symptoms, and emotional disclosure writing is more focused on their deep, often negative, emotions. Based on these findings it is hypothesized that (H2) emotional disclosure writing triggers higher levels of negative emotions and emotion related symptom reporting, than cognitive reappraisal writing.

**Responses from peers**

Next to writing, an important element of online support groups is the fact that one receives responses from peers. This sharing element makes online support groups functionally different from expressive writing in an offline setting. However, this possibly crucial component in the effectiveness of online support groups is rarely investigated.

Research has shown that people have the tendency to share emotional experiences with others. After an emotion, people undertake sharing in 80-95% of the cases (e.g., Rimé, 2009; Rimé et al., 1998). According to Rimé, regulation needs after an emotional upsetting event can be categorized in three classes; socio-affective needs, cognitive needs, and action needs (Rimé, 2007). The fulfilment of socio-affective needs (e.g., comforting, concrete social support, social integration, and esteem support) depends on active contribution from the social environment. The second category includes *cognitive needs* (e.g., reorganization of motives, modification of schemas, recreation of meaning and reframing), which open on a variety of cognitive tasks. Completing them allows the person to overcome perseveration of the impact of experience, such as mental rumination and intrusive thoughts. To fulfill these needs people are less dependent on others, although others could help in this process. The third category consists of *action needs*. Negative emotional experiences can break down
personal beliefs that were built up in previous experiences and action (e.g., feelings of control, feelings of mastery, and self-esteem). As a result, improvement in emotional wellbeing requires the contribution of new experiences developed through concrete actions. These actions need to be taken by the individual, and are independent from others. Peers can help by stimulating concrete action, but the individual needs to accomplish this on his or her own.

The opportunity to be in contact with others in the same condition can be helpful in getting people through the psychological process of coping. Beyond the expression of thoughts and feelings, as in offline expressive writing, the connection to peers can boost the accomplishment of socio-affective needs and others can serve as role models to learn how to deal with difficult situations (Slater, 2002; Green, 2006). A recent study by Kim et al. (2011) examined the responses participants give and receive in a computer-mediated support group for breast cancer patients. They studied the amount of responses focused on emotional support, which included expressions of empathy and understanding, and statements of offering support. Analyses revealed that those who receive higher levels of support from others had fewer breast cancer-related concerns.

However, responses from online peers could also mismatch somebody’s needs. For instance, a patient who is recently diagnosed may be still in shock and looking for understanding and recognition (socio-affective needs), while another forum user responds to provide concrete help and solutions about potential upcoming issues (which would be more appropriate for someone having cognitive needs). In such a case, concrete help and solutions could be perceived as a mismatch to one’s needs. When a response does not fit the needs people try to obtain by telling their story to others, this response could feel less appropriate or pleasant, than a response that does fit their needs.
Since various responses could fulfill different needs, the perception of a mismatch is quite plausible. Unfortunately, Kim et al. (2011) did not make a distinction between socio-affective responses (e.g., soothing/comforting, understanding, loving support) and cognitive reappraisal responses (e.g., advisory, modification of perception, learning from the experience). The current study makes a distinction between these two types of responses by providing participants randomly with a socio-affective response or a response focused on cognitive reappraisal.

Because the study of Kim et al. (2011) showed that people benefit from getting supportive responses it is expected that (H3) participants who receive a supportive response on their story will report less negative emotions and emotion related symptoms, than participants who do not get a response. In the current study it is also hypothesized that (H4) a mismatch of writing style and response type has a negative effect on emotion related symptom reporting and emotions. Hence, participants who write their story in the ‘emotional disclosure’ style are expected to benefit more from socio-affective responses, and participants who write their story in a ‘cognitive reappraisal’ style are expected to have more benefit from cognitive reappraisal responses.

**Overview**

Up to now, most research on online forums focused mainly on the content or on the outcome measures separately. However, what exactly is going on in this online environment that makes participating beneficial is still unclear. In the current study we focus on both the individual aspect of expressive writing about negative life events, as well as the interactive aspect; responses on these narratives from peers. To date, no study examined the combined effects of writing styles and receiving responses from
peers on participants’ wellbeing. We propose an experiment to test the effects of receiving different supportive responses (cognitive reappraisal vs. socio-affective vs. no response) on personal stories about a stressful life experience written in a different writing-style (emotional disclosure vs. cognitive reappraisal).

Method

Design and participants

The hypotheses were tested in a 2 (Writing: cognitive reappraisal vs. emotional disclosure) x 3 (Response: cognitive reappraisal vs. socio-affective vs. no response) factorial design. There were 122 individuals who participated in this study. Most of them were undergraduate students and received credits for participation. Five respondents were excluded from data analysis because they misunderstood the writing assignment. Our sample consisted of 117 respondents (88 females and 29 males), with a mean age of 21.9 years (SD = 8.36).

Procedure and independent variables

All respondents was told that that were invited to participate in a study about writing. Half of the respondents received disclosure instructions focusing on emotional expression and the other half received instructions facilitating cognitive reappraisal (for the exact writing instructions, see Lu & Stanton, 2010). The emotional disclosure group was instructed to write 15 minutes about their deepest emotions about a current most stressful event that affected them and their lives. They really had to let go and explore their feelings and thoughts about it. Participants assigned to the cognitive reappraisal group were instructed to write 15 minutes about positive and negative consequences of a current most stressful event, their perceptions of the stressful event, challenges and
opportunity arising from the event, cognitive reappraisal of their coping strategies and their positive thoughts about the stressors. Respondents were told that another respondent may read their story, and if so, this person had the opportunity to react on their story. After the writing assignment respondents had to answer filler questions, and answered questions about demographics (e.g., gender, age, marital status) to stretch the time. This was necessary to make it plausible that another respondents had enough time to read his or her story and respond on it.

Subsequently, respondents randomly received a response on their story on their computer screens, purported from another anonymous participant. This response was manipulated as a socio-affective response, a cognitive reappraisal response or no response at all (i.e., control group). Responses were matched according to length and valence. Participants in the socio-affective response condition read the response: ‘Dear writer, thanks for telling me your story. I think it was an impressive story. It must have been intense to experience something like that. I experienced something quite similar, and I recognize a lot in your story. I understand how it must have felt and the impact it must have had on your life. Take care.’. Respondents in the cognitive reappraisal response condition read: ‘Dear writer, thanks for telling me your story. I admire the way you dealt with this situation. Learning from these experiences is very important. Whenever you will experience something similar, you know better how to deal with it. I wish you good luck in the future.’.

**Manipulation Checks**

**Perception of peer response**

Six items were included to assess perceptions of the feedback participants received from a peer (‘did you perceive the reaction of the other person to your story as ..’). All items
were answered on a 5-point scale (from ‘Not at all’ to ‘Very much’). Three items out of this scale measured response appropriateness (appropriate, pleasant, supportive; Cronbach’s α=.87.

To check if the responses had a significant difference in socio-affective level, three items measured perceived socio-affective characteristics (validating, soothing, comforting; Cronbach’s α=.86).

Perceived relatedness
Participants filled in a questionnaire of 4 items to measure if they could relate to the person who wrote the response (e.g. ‘I feel that I associate with the person who read my story and responded on it in a very friendly way’). These questions were based on the relatedness subscale in the Autonomy, Competence, and Relatedness in Exercise scale whereby ‘exercise participant’ in the items was replaced by ‘the person who read my story and responded on it’ (Vlachopoulos & Michailidou, 2006). The scale was internally consistent (Cronbach’s α=.85).

Dependent measures
The stories participants wrote during the experiment were analyzed using the Dutch LIWC computerized text analysis program (Zijlstra, van Meerveld, van Middendorp, Pennebaker, & Geenen, 2004). The first application was developed as part of an exploratory study of language and disclosure (Pennebaker, 1993). The software is designed to analyze written text on a word by word basis. Subsequently, it calculates the percentage words in the text that match different language dimensions, such as emotional, cognitive, structural, and process components. The proportion of words indicating all language dimensions was counted for each participant. In the current
study we were mainly interested in words indicating negative emotions (e.g. sad, hate, hurt, guilty) and cognitive mechanisms (words indicating causation; e.g., because, depend), insight (e.g., know, explain), discrepancy (e.g., should, would), inhibition (e.g., block, conflict), tentativeness (e.g., perhaps, might), and certainty (e.g., always, never).

A 12-item symptom questionnaire (Symptom/emotion checklist: a state measure; Pennebaker, 1982) was used to assess emotion related symptoms respondents felt after writing their story and receiving the response, such as ‘sweaty hands’. Participants rated on a 5-point scale if they felt the symptoms or not (‘Now, at this moment, I have a headache’; Cronbach’s $\alpha = .809$). Ratings were summed and averaged across items. Higher scores indicated that respondents felt more symptoms.

Emotions were also measured according the Symptom/emotion checklist: a state measure (Pennebaker, 1982), including 5 items (e.g., sad) on a 5-point scale (Cronbach’s $\alpha = .829$). Positive emotion items were recoded. Higher scores imply more negative emotions.

Covariates

Participants were asked when the event occurred (‘How long ago did this happen to you?’). It is plausible that a very recent event has more impact on wellbeing than something that happened years ago. Participants could respond by choosing one of seven categories, ranging from ‘this year’ to ‘more than 8 years ago’. For 35% of the participants the event took place last year, for 16.2% about a year ago, for 14.5% about two years ago, for 14.5% about 3 or 4 years ago, for 12% about 5 till 8 years ago, and for 7.7% more than 8 years ago.

To examine a potential influence of the topic participants wrote about, all stories were coded by their subject, which ended up in five different categories; 22.7% wrote
about study and job related stress, 17.6% on serious illnesses and death (self and loved-ones), 16.8% about family issues (e.g., divorce, fighting), 12.6% about intimate relationship issues, and 30.3% consisted of other subjects (these subjects are not categorized because the size of these groups would become too small for statistical analyses).

Results

Preliminary analyses

Manipulation check

A 2 (Writing style: cognitive reappraisal vs. emotional disclosure) by 3 (Response: cognitive reappraisal vs. socio-affective vs. no response) ANOVA on response appropriateness did not show a main effect of the response type (socio-affective vs. cognitive reappraisal) ($F<1$); or an interaction effect of the assignment and response type ($F<1$). Participants thus perceived the two different responses as equally appropriate (socio-affective response; $M = 3.21$, $SD = 1.15$; cognitive reappraisal response; $M = 3.18$, $SD = 1.09$) and the expected mismatch of writing style and response style was not found.

An ANOVA on perceived socio-affective characteristics showed that the socio-affective response ($M=2.95$, $SD=1.15$) was perceived as significantly more socio-affective (i.e., soothing, comforting, validating) than the cognitive reappraisal response ($M=2.35$, $SD=1.05$; $F(1,72)=4.17$, $p <.05$, $\eta^2_p=.055$).

An ANOVA showed a significant effect of the response type on relatedness to the person who provided this response, $F(1,72)=3.63$, $p <.05$, $\eta^2_p=.048$. Respondents felt more related to the person who provided the socio-affective response ($M=2.75$, $SD=1.03$) than the cognitive reappraisal response ($M=2.29$, $SD=0.78$).
Descriptives and covariates

As mentioned in the method section, all stories were coded by subject to reveal if this would affect our main analysis. An ANOVA testing the influence of the story subjects showed that it made no difference for participants’ emotions ($F<1$) and emotion related symptoms ($F<1$) what they wrote about. In addition, results from an ANOVA showed that the recency of the event participants’ wrote about had no influence on emotions ($F<1$) and emotion related symptoms ($F<1$). No gender effects on emotions and emotional related symptoms were found.

Dependent measures

Cognitive Mechanism and Negative Emotion Words

An ANOVA revealed the expected difference in the use of negative emotion and cognitive mechanism words between the two writing assignments. Participants in the emotional disclosure writing condition used more negative emotion words ($M=2.72, SD=0.89$) than participants in the cognitive reappraisal writing condition ($M=2.18, SD=0.89$), $F(1,110)=8.237, p <.01, \eta^2_p=.070$ ($H1a$). Results also showed that participants used more cognitive mechanism words in the cognitive reappraisal writing condition ($M=6.89, SD=1.55$), than participants in the emotional disclosure writing condition ($M=6.22, SD=1.57$), $F(1,110)=5.397, p <.05, \eta^2_p=.047$ ($H1b$).

Emotions

A 2 x 3 ANOVA revealed the expected main effect of the assignments on emotions, $F(1,110)=4.75, p <.05, \eta^2_p=.041$ ($H2$). Participants assigned to the cognitive reappraisal writing condition experienced less negative emotions ($M=1.77, SD=0.55$) than
respondents in emotional disclosure writing condition ($M=2.14, SD=.88$). The results did not show a significant difference in emotions between the participants who perceived a response compared to the participants that did not perceive a response, $F(1,110)=1.82, ns$ (H3). However, a significant interaction effect of assignment and response on emotions was observed, $F(2,110) =3.22, p <.05, \eta^2_p=.055$ (H4). Post-hoc comparisons indicated that significant mean differences emerged for respondents in the emotional disclosure condition. Respondents reported less negative emotions when they received a cognitive reappraisal response ($M=1.64, SD=.624$) compared to a socio-affective response ($M=2.35, SD=.956; p=.007$), or no response ($M=2.19, SD=.830; p=.040$). No significant difference was found between socio-affective response and the control group (i.e. no response group) (Figure 1a). No significant simple effects in the cognitive reappraisal writing condition were found (Figure 1b).

**Emotion related symptoms**

A 2 x 3 ANOVA did not show main effects of writing condition or response type on emotion related symptoms (H2, H3). However, a significant interaction effect of writing condition and response type on symptoms was observed, $F(2,115)=3.261, p<.05, \eta^2_p=.056$ (H4). Post-hoc comparisons indicated that significant mean differences emerged for respondents in the emotional disclosure writing condition. Respondents in this condition reported fewer symptoms after the cognitive reappraisal response ($M=1.30, SD=.330$) than after the socio-affective response ($M=1.86, SD=.742; p=.008$) or no response ($M=1.69, SD=.720; p=.070$), although the latter effect was only marginally significant. There was no significant difference between the groups who received the socio-affective response or no response on emotion related symptoms.
(Figure 1a). No significant simple effects in the cognitive reappraisal writing condition were found (Figure 1b).

[Please place Figure 1 about here]

**Mediation analyses**

Since we found the same effects of the interaction of writing style and response type on emotions and emotion related symptoms, a mediated moderation was performed (Preacher & Hayes, 2004). Two dummy variables were computed; the writing conditions (Emotion Disclosure Assignment=1 vs. Cognitive Reappraisal Assignment=-1); and the response conditions (Cognitive Reappraisal Response = 1 vs. Other = -1). Since we did not find a significant difference between the socio-affective and control condition (i.e. no response), both were coded -1 (Whitaker & Bushman, 2011). Our dummy variables for writing assignment and response type were multiplied to create a new interaction-term. The two separate dummy variables for writing condition and response condition were included in the model as covariates.

As can be seen in Figure 2, the interaction of writing style and response type was negatively related to emotions. Emotions, in turn, was positively related to emotion related symptoms. The direct effect of the interaction of writing style and response type on symptoms became non-significant after including emotions in the model. The indirect effect of the interaction of writing style and response type on symptoms was significant using a boot-strap test of mediation (Preacher & Hayes, 2004). The 95% confidence interval ranged from -.1693 to -.0242, which excluded the value zero.

[Please place Figure 2 about here]
Discussion

The present study tested the effects of online writing about a negative life experience and feedback on the written stories from a peer on emotions and emotion-related symptoms of the initial writer. Participants who were asked to express their deepest emotions used more negative emotion words, used less cognitive mechanism words, and experienced more negative emotions, compared with participants who were asked to write about cognitive reappraisal of their coping strategies and their positive thoughts about the stressors. Moreover, feedback from peers moderated the effects of writing style on emotions and emotion-related symptoms. Cognitive reappraisal responses, which focused on reinterpreting the negative life experience, decreased negative emotions and symptom reporting particularly for individuals who had just expressed their deepest emotions, i.e., for participants in the emotional disclosure condition. Feedback had no effects on participants who had focused on cognitively reappraising their negative life experience in the writing assignment. The fact that the joint effects of writing style and feedback from peers on symptom reporting was mediated by emotions further underscores the idea that psychological distress caused by a negative event has severe consequences for physical wellbeing.

These findings suggest that cognitive reappraisal of a stressful situation may have beneficial effects on wellbeing in two different ways. First, the fact that individuals who cognitively reappraised a stressful situation had similar – lower – levels of negative emotions and emotion-related symptoms regardless of type of feedback they received from a peer suggest that cognitively reappraising a negative life experience makes individuals less vulnerable to information from the outside world. Cognitively re-evaluating negative experiences not only makes individuals feel better about a
situations, it also buffers ones susceptibility to responses. Cognitive reappraisal writing may thus promote resilience and a decreased dependency on others.

Second, cognitive reappraisals of a situation by a peer may help individuals interpret an emotional experience from a different viewpoint, and provide a positive way out of negative emotions. Writing about emotions attached to a stressful situation may evoke a vicious cycle of negative emotions, which may drain individual resources to look at a situation from a different viewpoint. In such conditions, feedback from peers may be helpful to break this vicious cycle and help individuals see a different picture. These findings are in line with Rimé (2007), who proposed the satisfaction of socio-affective needs is not sufficient; individuals should fulfill their cognitive reappraisal needs as well to overcome mental rumination and intrusive thoughts. Thus feedback that approaches the situation from a more cognitive reappraisal viewpoint can help individuals to change perspective.

The present findings extend previous research on expressive writing (e.g. Lu & Stanton, 2010; Pennebaker, 1993; Pennebaker, 1997; Pennebaker & Chung, 2007) by showing that cognitive reappraisal writing may be beneficial for wellbeing in online environments. More importantly, perhaps, our findings make a first step in showing causal effects of peer-responses in online settings. Although the element of sharing makes online support groups different from expressive writing in offline settings, this unique component of online support groups had received surprisingly little empirical attention thus far. Our findings point to the power of sharing: just one simple comment from a peer may change emotions and emotion-related symptoms of individuals who share their personal story online. Future studies should further examine effects of different peer responses on wellbeing, e.g., by comparing short versus long-term effects of different writing styles and response types on psychological and physical wellbeing.
There is some empirical evidence that expressing ones emotions elicits more emotions and a higher heart rate during writing, but promotes psychological wellbeing in the longer run (Low, Stanton & Danoff-Burg, 2006; Rimé, 1998). It should be worthwhile examining whether diminishing negative emotions by providing cognitive reappraisal feedback also promotes long-term wellbeing.

Contrary to expectations, our findings suggest little harm in mismatched peer responses. Cognitive reappraisal responses were perceived as equally appropriate, pleasant, and supportive as socio-affective peer responses, but participants felt more related to the person who provided the socio-affective response, and perceived this response as more soothing, comforting, and validating. However, these positive perceptions and emotions did not translate into an increased wellbeing. Participants who just expressed their deepest emotions did not benefit from a socio-affective response; their wellbeing did not show a significant difference from the control group, who did not receive a response at all. These findings suggest conditions under which mismatched responses are actually better than matched responses, and that validating a person’s negative feelings does not break the vicious cycle of negative emotions.

**Limitations and Future Research**

A limitation of this research is that we simulated an online environment and provided standardized peer feedback. Individuals participating in online forums have an intrinsic need to share their experiences with others, where in this study –similar to other offline expressive writing studies- participants were asked to share an event. This may be different from the therapeutic effect of writing on an online forum, because in forums people have the opportunity to write whenever they want. For future research it would be interesting to investigate the responses on an online forum to see if and when
responses from peers have a socio-affective or a cognitive reappraising nature.

Another restriction is that an extensive part of the participants were females. Although there was no effect of gender on the dependent variables, it could be that gender has an effect on moderators of the psychological process, such as personality traits or coping strategies. For example, a meta-analysis focused on gender differences in coping showed that females cope by engaging in social relationships and they try to create change (in cognitive and actual terms) more frequently than men do. On the other hand, males rely more often on stress reduction activities or they tend to distract themselves (i.e. diversions) (Tamres, Janicki, & Helgeson, 2002). Gender differences are important for the process of recovering from a stressful event, and should be further investigated in relation to online forum participation.

Finally, as stated before, future studies should examine longer-term effects on wellbeing. By repeating this experiment and conducting additional emotion or wellbeing measurements a few weeks later, it may be possible to see how expressive writing in combination with a response affects wellbeing in the longer run.

**Conclusion**

Our findings suggest that cognitively reappraising a stressful situation described by a peer in an online forum may produce positive effects on emotions and emotion-related symptoms. Although telling them that ‘you know how they feel’ is perceived as soothing and increases a relational bond, it may not be the best strategy to get peers back on track following a stressful situation: its effects are similar to saying nothing at all.
References


Figure captions

Figure 1. Interaction of writing-style and response type on emotions and symptoms
Note: Higher scores on emotions indicate more negative emotions; higher scores on symptoms indicate more emotion related symptoms. Only figure 1a shows significant differences: the CR response condition scores significantly lower on emotions and symptoms, than the SA response and the control group.

Figure 2. Mediated moderation; the effect of the interaction of writing style and response type on emotion related symptoms, mediated by emotions. Note: The value in parentheses is the direct effect of the interaction term on emotion related symptoms when emotions is excluded from the model. *p < .05.
Figure 1a. Emotional Disclosure writing

Figure 1b. Cognitive Reappraisal writing
Emotions

Writing condition X Response condition

Emotion related symptoms

-0.19*

0.47*

-0.15* -0.06