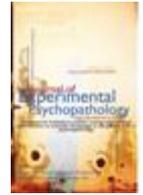




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Editorial, Special Issue in Honour of Professor Susan Nolen-Hoeksema

In January 2013 the international academic community was deeply saddened by the news that Professor Susan Nolen-Hoeksema had passed away. I first heard this news in an email from my colleague Ed Watkins. I remember the strong emotional impact of Ed's message on me very clearly – I was shocked, in disbelief, and felt a deep sadness.

Despite my strong reaction and the impact of the news of her death, the reality was that I really did not know Susan as a person. She had not been my teacher, my mentor, a collaborator, colleague or personal friend. In fact, we met in person on only one occasion, at a rumination think tank meeting in Philadelphia in November 2007, which was followed by a dinner of a small group of researchers with a common interest in rumination.

I was thrilled to have the opportunity to meet the pioneer researcher in the rumination field, and over the course of the day and that evening I was struck by her warmth, openness, intellect, and her genuine interest in the work of everyone who was present. But most of all, I was taken by her down to earth 'humanness'. Beyond her many ideas about rumination, Susan spoke at length about her son, her family and her lab members, and shared her experiences as a researcher. There was no academic hierarchy at the table – Susan made everyone feel comfortable about sharing their experiences, ideas and thoughts. As an early career researcher, this was an incredible and very memorable experience.

Since that meeting, the only subsequent contact that I had with Susan was via email. I can only imagine the volume of email that a researcher of her stature was faced with each day. Nonetheless, Susan always responded, and did so promptly, and in the kind manner that I remembered from our meeting. On one occasion I recall her responding to an email from one of my students two days after he had mailed her. In her reply, Susan was profusely apologetic for the 'delay', and explained that she had been away on vacation with her family.

So, albeit limited, the nature of my interactions with Susan painted a very clear picture as to the scientist, mentor and woman that she was: an extremely talented, creative, productive and influential researcher, a mentor who guided, respected and deeply valued the input, ideas and hard work of her students, and a woman who struck an incredible balance between the demands of being an international leader in her research field and her commitments to her family. Even from a distance, I cannot think of a better role model for (female) scientists in the early stages of their academic careers.

This Special Issue in honour of Susan was compiled in collaboration with my colleague Dr Julie Krans. Our goal was to make a gesture of acknowledgement of the tremendous impact of Susan's work on the field. It is no exaggeration to describe Susan as the researcher responsible for the now expansive literature on the topic of rumination. We are very fortunate to have contributions from researchers whose work, ideas, career trajectories, and indeed lives were heavily influenced by Susan - as her collaborators, graduate students, and friends. We are grateful to these researchers for not only contributing papers to this issue, but also for sharing their personal thoughts about their relationships with Susan and the nature and extent of her impact upon them professionally and personally. They are best placed to speak to Susan's influence and the impact of her loss. For those contributors who were influenced by Susan from afar, via the impact of her theoretical and empirical work in the literature, we too have reflected on how she shaped our ideas and the direction of our research.

The topics covered by the papers included in this Issue are varied, and include studies in which the authors sought to better understand the nature of rumination, the mechanisms that underpin this emotion regulation strategy, and

efforts to refine its measurement. We hope that readers will find this an informative collection of recent developments in the ever-expanding literature on rumination and repetitive thinking. But most of all, we hope that we have achieved our primary goal in compiling this Special Issue: to express our deepest respect, gratitude, admiration and tremendous thanks for the life and work of Professor Susan Nolen-Hoeksema.

Michelle Moulds

Overview

Why do people ruminate?

There is overwhelming evidence for the potential detrimental effects of rumination on mental health. Why, then, do people ruminate? Vine and Aldao present research that was conducted with assistance and support from Susan Nolen-Hoeksema (Vine, Aldao, Nolen-Hoeksema, this issue) which aimed to answer this question. The authors tested the hypothesis that rumination may be used as a way to find answers about one's feelings when these are unclear. In support of this idea, Vine et al. found that emotional clarity was negatively associated with rumination, but only in individuals who displayed a low tolerance for ambiguity. Thus, rumination may be driven by a need for answers about one's emotional state.

Kingston and Watkins, also in collaboration with Susan Nolen-Hoeksema, explored other potential motivators for engaging in rumination (Kingston, Watkins, & Nolen-Hoeksema, this issue). Participants were asked to think about a difficult interpersonal issue, and then to ruminate about the issue, or think about the issue in a concrete way. The results showed that concrete thinking increased confidence, control, assertiveness, self-efficacy, but not insight and understanding. Rumination, on the other hand, increased justification for avoidance. In other words, by ruminating individuals may feel justified to remain inactive and thereby avoid confrontation.

Positive beliefs about rumination may thus drive rumination in response to emotional situations. Rumination has mostly been studied in the context of depression and anxiety, but a link between rumination and anger has been suggested (e.g., Rusting & Nolen-Hoeksema, 1998). Krans, Moulds, Grisham, Lang, and Denson (this issue) used cognitive bias modification to test whether positive beliefs about rumination would bias individuals towards favouring rumination in anger-provoking situations. Individuals who were trained to endorse positive beliefs about rumination, compared to participants trained towards negative beliefs about rumination, indeed showed a positive bias towards rumination in response to anger, and even predicted that rumination would decrease their anger in anger-provoking situations.

Rumination as a moderator

Since Susan Nolen-Hoeksema's seminal publication in 1991, a wealth of empirical research has been published that has established the link between rumination and depression. Individual differences in habitual rumination have been linked to stressful life events (e.g., Nolen-Hoeksema & Watkins, 2011), although the exact nature of this bi-directional link remains unclear. Aldao, MacLaughlin, Hatzenbuehler, and Sheridan (this issue) set out to investigate how cognitive and biological responses to stress are related to habitual rumination in adolescents. Adolescents who were habitual ruminators experienced higher negative affect and more negative appraisals from a social stress test compared to low ruminators, and also showed a slower heart rate recovery. These findings suggest that rumination may be especially influential during recovery from a stressful event.

Also incorporating psychophysiology, Quinn, Keil, Utke, and Joormann (this issue) present a study that looked at the effect of executive control training on biological stress responses, and the moderating effect of trait rumination on this relationship. They found that for individuals high in trait rumination, but not for those low in trait rumination, an executive control training reduced the biological stress response after a stress induction, compared to a control condition. This work builds on the findings by Susan Nolen-Hoeksema and colleagues (Davis & Nolen-Hoeksema, 2000) which shows that deficits in executive control may underlie depressive rumination and contribute to difficulties in emotion regulation.

Moderators of rumination

Although the link between cognitive control and rumination has been studied to some extent in adult populations, there are fewer studies available that have examined this relationship in youth. Hilt, Leitzke, and Pollak (this issue), conducted a correlational study in which they found an association between rumination and difficulties in inhibiting responses to negative information in adolescents. Interestingly, cognitive flexibility was not associated with rumination in this sample. These results show that while deficiencies in executive control are related to rumination in adolescents, the specific executive control functions that are important in this relationship may be different for adults and adolescents.

Van Lier, Vervliet, Vanbrabant, Lenaert, and Raes (this issue) identified overgeneralization as another psychopathological process that might be associated with negative repetitive thought, including rumination and worry. Overgeneralization refers to an increase in cues that can trigger negative emotional responses. The authors found that high dysphoric adolescents who were instructed to think in an abstract way before a training phase showed more generalization for negative information than high dysphoric adolescents who were instructed to think in a concrete way. Further, low dysphoric adolescents showed no differences in overgeneralization according to thinking mode. These results suggest that rumination-like thought affects high but not low dysphoric individuals, and is related to overgeneralization - a risk factor for emotional disorders.

Content and process components of depressive rumination

Several theorists, including Susan Nolen-Hoeksema (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Watkins, 2008) have noted that there is a distinction between the content and the form of information processing. That is, rumination about information with negative content appears to be most strongly related to psychopathology. Wisco, Gilbert, and Marroquín (this issue) studied the interplay between the content and processing of information relating to depression. Their main finding was that the relationship between interpretation or memory biases and depressive symptomatology was mediated by rumination. This mediation effect was stronger for rumination than for other emotion regulation strategies (dampening and worry). The authors speculated that biased negative content in depression may trigger rumination, which in turn may increase risk for depressive symptoms. These studies thereby add to empirical support for the idea that content and process should be considered separately.

On a similar note, Vergara-Lopez, Kyung, Detschner, and Roberts (this issue) found that rumination moderated the relation between self-discrepancy and depressive symptoms, such that this relationship was stronger in high ruminators than low ruminators. More specifically, in a second study these authors found that this interaction was unique for the depressive symptoms of negative mood and insomnia in males only. This study provides further insight into the role of rumination in the development and maintenance of depressive symptoms, building on Susan Nolen-Hoeksema's classic rumination work (e.g., Nolen-Hoeksema, 1991).

Topper, Molenaar, Emmelkamp, and Ehring (this issue) also aimed to further specify the process of rumination by looking at differences in predictive value of rumination and worry. In a series of studies the authors employed structural equation modelling to discover support for a bi-factor model, where common variance of rumination and worry was predictive of future depressive and anxiety symptoms, whereas the unique variances of rumination and worry failed to be significant predictors. This finding provides support for a transdiagnostic view of repetitive negative thought processes, including rumination and worry, across depression and anxiety.

Clinical assessment of rumination

It has become clear that repetitive negative thought, including rumination, is a clinically significant cognitive process not only in the context of depression, but also in the context of anxiety and emotional disorders more broadly. Accordingly, it is critical that researchers develop self-report instruments that can be administered to assess rumination transdiagnostically in clinical practice. McEvoy, Thibodeau, and Asmundson (this issue) tested the psychometric properties of a 10 item trait version of the Repetitive Thinking Questionnaire (RTQ-10). They found that the RTQ-10 possesses a unitary structure with high internal reliability. Moreover, the RTQ-10 was sensitive in distinguishing between non-clinical and clinical participants, showed no gender bias, and was correlated with worry,

rumination, anxiety, and depression symptoms. Given its brevity and good psychometric qualities, the RTQ-10 promises to be a very useful tool for initial assessment and assessment of change in clinical practice.

Summary

Collectively, the studies presented in this Special Issue help us to move closer towards an enhanced understanding of rumination and the adverse consequences of this cognitive process. The findings reported here prompt a number of conclusions. First, we can conclude that, in general, rumination is an important transdiagnostic factor that is predictive of emotional problems. Second, rumination can be assessed fairly easily and reliably. Third, individuals may hold positive beliefs about rumination, and engage in rumination to avoid taking action and possible negative situations, and search for answers about their emotional state when the tolerance for ambiguity is low. Fourth, the content (e.g., positive or negative thoughts) can and should be distinguished from the process of repetitive thought, where the overlap between rumination and worry has more predictive value for psychopathology than their independent properties. Fifth, any factors, including cognitive control, overgeneralization, and positive beliefs, interact to influence the complex relationship between rumination and psychopathology. Furthermore, it appears that at least some of these factors are malleable, which opens up exciting possibilities for future clinical interventions that target rumination with the goal of relieving the psychopathological symptoms of depression, anxiety, and anger.

Julie Krans

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