ABSTRACT

RUMINATION AND REBOUND FROM FAILURE: INVESTIGATING HOW TRAIT AND

STATE FORMS OF RUMINATIVE THOUGHT INFLUENCE ATTENTION TO ERRORS

AND THE ABILITY TO CORRECT THEM IN A CHALLENGING ACADEMIC

ENVIRONMENT

by

RONALD C. WHITEMAN

Advisor: Jennifer A. Mangels, Ph.D.

Rumination is a recurrent and repetitive manner of thinking that can be triggered by blockage of

personally-relevant goals, creating a temporary state of abstract and evaluative self-focus that

can also become a chronic trait-like style of responding to personal challenges. Despite claims

that rumination helps down-regulate unwanted emotion, cope with problems, and lead to goal

attainment, it often increases negative affect, interferes with problem solving, and exacerbates

goal-state discrepancies, particularly for women. Given the pervasiveness of rumination and its

potential impact on cognitive processes and emotional states, one important yet untested question

is how it might impact individuals' ability to remediate goal-state discrepancies caused by

negative outcomes in an academically-relevant context. In this research program, we examine

both trait and state rumination effects in a challenging verbal general knowledge test-feedback-

retest paradigm, where first-test failures accrue (65%), but attention must be paid to corrective

feedback in order to learn and later rebound from those failures at a surprise retest. Based on

prominent cognitive models of rumination, such as the attentional scope model (Whitmer &

Gotlib, 2013) and impaired disengagement hypothesis (Koster et al., 2011), individuals who ruminate exhibit a narrowed focus of attention on and impaired disengagement from negative self-referent information. Thus, we tested whether rumination would heighten and maintain focus on negative performance feedback (Aim 1) and therefore interfere with the ability to deploy attention toward learning opportunities that might facilitate remedial behavior (Aim 2). To assess attention processes, we employed both event-related potential (ERP; Study 1) and eye tracking (Study 3) techniques as covert and overt measures, respectively. To assess potential similarities and differences in trait and state rumination (Aim 3), we employed both an individual differences approach, utilizing a well-known self-report measure of trait rumination to predict measures of attention and learning (Studies 1-3), as well as an experimental approach, utilizing two different state rumination induction techniques, one from the clinical realm (Study 2) and the other from the social-cognitive realm (Study 3). Using state rumination induction methods not only afforded a more direct assessment of the causal relationship between rumination and the ability to learn and rebound from failure, but with each method rooted in a different area of research, such methods also permitted testing whether the effectiveness of a state rumination induction may depend on how well it overlaps with the domain of concerns related to the general knowledge task (i.e., academic). We also took participants' gender into account, as rumination been linked with a host of ill effects on cognition and emotion particularly among *women*. In response to negative performance feedback, a maladaptive *trait Brooding* style of rumination sustained *covert* (i.e., internally-focused) attention to errors, as measured by the Late Positive Potential (LPP; Foti & Hajcak, 2010), *but not overt* (i.e., externally-oriented) attention, as indexed by gaze fixation duration metrics (e.g., Owens & Gibb, 2017). In response to corrective feedback, however, *overt* attention was impacted, with a *brooding-like state* of rumination

attenuating visual fixation on learning-relevant information, but no apparent differences were found in *covert* measures of learning feedback (i.e., ERPs). Despite these effects on feedback processing, surprisingly, state and trait forms of Brooding rumination did not hinder error correction, though they worsened first-test memory performance. Trait Reflection, on the other hand, was found to consistently *improve* memory performance at first-test, with more mixed results at retest. Rumination effects among women were generally as predicted, while men exhibited null or unexpected effects. The implications of these findings are discussed with respect to how existing models of rumination might be updated to account for differences in internally-focused and externally-oriented attention in applied contexts.