



## The Perseverative Thinking Questionnaire (PTQ): Validation of a content-independent measure of repetitive negative thinking

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### ABSTRACT

Repetitive negative thinking (RNT) has been found to be involved in the maintenance of several types of emotional problems and has therefore been suggested to be a transdiagnostic process. However, existing measures of RNT typically focus on a particular disorder-specific content. In this article, the preliminary validation of a content-independent self-report questionnaire of RNT is presented. The 15-item Perseverative Thinking Questionnaire was evaluated in two studies (total  $N = 1832$ ), comprising non-clinical as well as clinical participants. Results of confirmatory factor analyses across samples supported a second-order model with one higher-order factor representing RNT in general and three lower-order factors representing (1) the core characteristics of RNT (repetitiveness, intrusiveness, difficulties with disengagement), (2) perceived unproductiveness of RNT and (3) RNT capturing mental capacity. High internal consistencies and high re-test reliability were found for the total scale and all three subscales. The validity of the Perseverative Thinking Questionnaire was supported by substantial correlations with existing measures of RNT and associations with symptom levels and clinical diagnoses of depression and anxiety. Results suggest the usefulness of the new measure for research into RNT as a transdiagnostic process.

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### 1. General introduction

A number of different emotional problems have been found to be related to heightened levels of repetitive negative thinking (RNT) in the form of worry and/or rumination. For example, individuals with depressive disorders have been shown to ruminate excessively about the symptoms of depression, their causes and consequences (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Importantly, results from longitudinal as well as experimental studies suggest that depressive rumination is not only an epiphenomenon of the disorder, but plays a causal role in its development and maintenance (Nolen-Hoeksema et al., 2008; Watkins, 2008). Similarly, excessive worry is a key feature of generalized anxiety disorder (GAD) (APA, 2000; Borkovec, Robinson, Pruzinsky, & DePree, 1983). Although most of the research to date has focused on depression and GAD, there is evidence that heightened levels of rumination and/or worry are present in most Axis I disorder, including posttraumatic stress

disorder (PTSD), social phobia, obsessive-compulsive disorder (OCD), insomnia, eating disorders, panic disorder, hypochondriasis, alcohol use disorder, psychosis and bipolar disorder (for a review see Ehring & Watkins, 2008).

Based on the widespread presence of rumination and worry across disorders, it has been suggested that RNT is a transdiagnostic process that shows the same characteristics across disorders, whereby only the content is disorder-specific (Ehring & Watkins, 2008; Harvey, Watkins, Mansell, & Shafran, 2004). Evidence supporting this view comes from four types of studies. First, self-report questionnaires measuring different types of RNT (mainly worry vs. rumination) are highly correlated and are related to symptom levels of anxiety and depression to a similar extent (e.g., Fresco, Frankel, Mennin, Turk, & Heimberg, 2002; Segerstrom, Tsao, Alden, & Craske, 2000; Siegle, Moore, & Thase, 2004). This supports the view that these questionnaires measure more or less the same process. Second, studies directly comparing characteristics of worry and depressive rumination have revealed very few differences between these processes and none of these differences has been replicated yet (Papageorgiou & Wells, 1999; Watkins, 2004; Watkins, Moulds, & Mackintosh, 2005). Third, the experimental induction of

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different types of RNT (typically worry vs. rumination) has been shown to lead to increased levels of anxiety and depression (e.g., Blagden & Craske, 1996; McLaughlin, Borkovec, & Sibrava, 2007). Finally, across disorders worry and rumination have been found to share a number of important characteristics; they tend to consist of thoughts rather than images, be relatively abstract and to be related to positive as well as negative meta-cognitions (for a review see Ehring & Watkins, 2008).

Taken together, these findings suggest that it may be promising to investigate RNT across disorders rather than using a disorder-focused perspective. However, research into RNT as a transdiagnostic process is complicated by the fact that current definitions and measures of this variable are mostly focused on a specific content and are therefore disorder-specific. For example, depressive rumination is typically defined as “repetitive and passive thinking about one’s symptoms of depression and the possible causes and consequences of these symptoms” (Nolen-Hoeksema, 2004, p. 107). Consequently, the Response Style Questionnaire (RSQ; Nolen-Hoeksema & Morrow, 1991), regarded as the standard measure of depressive rumination, focuses on depression-related repetitive thoughts. Worry in GAD has most commonly been defined as “a chain of thoughts and images, negatively affect-laden and relatively uncontrollable. The worry process represents an attempt to engage in mental problem-solving on an issue whose outcome is uncertain but contains the possibility of one or more negative outcomes” (Borkovec et al., 1983; p. 10). In line with this definition, the most commonly used measure of worry, the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990), focuses on the type of thoughts that are typical for GAD. Similarly, definitions and measures of rumination in PTSD are focused on repetitive thinking about the trauma and/or its consequences (Ehring, Frank, & Ehlers, 2008; Michael, Halligan, Clark, & Ehlers, 2007) and those for social phobia are centered around repetitive thoughts related to a recent social interaction (Kashdan & Roberts, 2007).

We suggest that a transdiagnostic definition of RNT would need to be focused on its characteristic process (e.g., repetitiveness, difficult to disengage from), to be independent of a specific content and to be applicable to past, present and future concerns. In addition, a definition on RNT as relevant to emotional disorders should be restricted to *dysfunctional* forms of RNT, as there is evidence that certain forms of recurrent thinking can also be beneficial (Trapnell & Campbell, 1999; Watkins, 2008). Despite considerable theoretical and empirical progress in this field (see e.g. Treynor, Gonzalez, & Nolen-Hoeksema, 2003; Watkins, 2008), there is still no consensus as to which factors distinguish between functional and dysfunctional forms of repetitive thinking. Therefore, it appears premature to include variables such as abstractness of thinking into a definition of dysfunctional RNT. However, at the very least a transdiagnostic definition of RNT should include individuals’ own perception of their thinking as being unproductive. In line with this reasoning, there is evidence that self-reported unproductiveness of repetitive thinking is associated with psychopathology over and above the pure frequency of RNT (Michael et al., 2007). In addition, as repetitive thinking captures mental capacity it has been found to be associated with self-reported as well as objective difficulties concentrating on ongoing tasks (e.g., Lyubomirsky, Kasri, & Zehm, 2003).

Based on earlier conceptualizations (see Ehring & Watkins, 2008; Segerstrom, Stanton, Alden, & Shortridge, 2003; Watkins, 2008), we suggest the following working definition: Repetitive negative thinking as relevant to emotional problems is a style of thinking about one’s problems (current, past, or future) or negative experiences (past or anticipated) that shows three key characteristics: (1a) the thinking is repetitive, (1b) it is at least partly intrusive, and (1c) it is difficult to disengage from. Two additional features of RNT are that (2) individuals perceive it as

unproductive and (3) it captures mental capacity. Whereas the key characteristics represent the actual thinking process, the two additional features refer to individuals’ perceived *dysfunctional effects* of RNT.

Based on this working definition, the current article describes the development and initial validation of the *Perseverative Thinking Questionnaire* (PTQ) as a content-independent measure of RNT.

## 2. Study 1

The aim of Study 1 was to investigate the factor structure, reliability and validity of the German version of the new questionnaire measure in three samples.

### 2.1. Method

#### 2.1.1. Participants

*Sample 1: Internet sample.* The first sample consisted of volunteers who filled in the questionnaires via a web-based, secured and encrypted survey. All participants with complete data on the Perseverative Thinking Questionnaire were included in the analyses ( $N = 724$ ; age:  $M = 30.05$ ,  $SD = 10.58$ ; 73% female). Participants for this sample were recruited by posting information about the study and a link to the online questionnaire on a number of web-sites advertising web-based studies.

*Sample 2: Non-clinical sample.* The second sample consisted of  $N = 501$  non-clinical participants (age:  $M = 26.59$ ,  $SD = 7.89$ ; 77% female). Seventy-nine percent of participants in this sample were University students, 21% of participants were recruited from the general population. Participants in this sample filled in pencil-and-paper versions of all questionnaires.

*Sample 3: Clinical sample.* The third sample consisted of  $N = 113$  clinical participants (age:  $M = 43.22$ ,  $SD = 11.35$ ; 52% female). Participants were recruited from the patient population of two mental health clinics. The primary diagnoses in this sample were major depressive disorder (39.8%), an anxiety disorder (24.8%), or other disorders (adjustment disorder: 13.3%; somatoform disorder: 10.6%; substance use disorder: 8.8%; bulimia nervosa: 2.7%). These diagnoses were clinical diagnoses established during the pre-treatment assessment.

#### 2.1.2. Measures

For all questionnaires, German-language versions were used.

*2.1.2.1. Perseverative Thinking Questionnaire (PTQ).* Based on the working definition of repetitive negative thinking described in the introduction and some pilot data (Zetsche, Ehring, & Ehlers, 2009), the PTQ was developed, consisting of 15 items. The item pool comprised three items for each of the assumed process characteristics of repetitive negative thinking: (1a) repetitive (e.g., “The same thoughts keep going through my mind again and again”), (1b) intrusive (e.g., “Thoughts come to my mind without me wanting them to”), (1c) difficult to disengage from (e.g., “I can’t stop dwelling on them”), (2) unproductive (e.g., “I keep asking myself questions without finding an answer”), (3) capturing mental capacity (e.g. “My thought prevent me from focusing on other things”) (see Appendix for all 15 items). Participants were asked to rate each item on a scale ranging from ‘0’ (*never*) to ‘4’ (*almost always*).

*2.1.2.2. Other measures of RNT.* In order to establish convergent validity, a number of existing measures of RNT were used.

The rumination scale of the *Response Style Questionnaire* (RSQ; Nolen-Hoeksema, 1991; German version: Kühner, Huffziger, & Nolen-Hoeksema, 2007) was used to assess repetitive negative

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