

The role of metacognition in self-critical rumination: An investigation in individuals presenting with low self-esteem

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Daniel C. Kolubinski^a, Ana V. Nikčević^b, Jacqueline A. Lawrence^a, and
Marcantonio M. Spada^{a,*}

^a Division of Psychology, School of Applied Sciences, London South Bank University, London, UK

^b Department of Psychology, Kingston University, Kingston upon Thames, UK

* Correspondence to: Professor Marcantonio Spada, Division of Psychology, School of Applied Sciences, London South Bank University, London, United Kingdom. Tel. +44 (0)20 7815 7815, e-mail spadam@lsbu.ac.uk.

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Abstract

Background: No research, to date, has directly investigated the role of metacognition in self-critical rumination and low self-esteem. **Aim:** To investigate the presence of metacognitive beliefs about self-critical rumination; the goal of self-critical rumination and its stop signal; and the degree of detachment from intrusive self-critical thoughts. **Method:** Ten individuals reporting both a self-acknowledged tendency to judge themselves critically and having low self-esteem were assessed using metacognitive profiling, a semi-structured interview. **Results:** All participants endorsed both positive and negative metacognitive beliefs about self-critical rumination. Positive metacognitive beliefs concerned the usefulness of self-critical rumination as a means of improving cognitive performance and enhancing motivation. Negative metacognitive beliefs concerned the uncontrollability of self-critical rumination and its negative impact on mood, motivation and perception of self-worth. The primary goal of engaging in self-critical rumination was to achieve a better or clearer understanding of a given trigger situation or to feel more motivated to resolve it. However, only four participants were able to identify when this goal had been achieved, which was if the trigger situation were not to occur again. Participants unanimously stated that they were either unable to detach from their self-critical thoughts or could do so some of the time with varying degrees of success. More often than not, though, self-critical thoughts were viewed as facts, would rarely be seen as distorted or biased, and could take hours or days to dissipate. **Conclusions:** These findings provide preliminary evidence that specific facets of metacognition play a role in the escalation and perseveration of self-critical rumination.

Key words: metacognition; self-critical rumination; self-critical thoughts; self-criticism; self-esteem.

1. Introduction

1.1. Self-esteem and psychopathology

Self-esteem is one of the oldest and most studied concepts in the field of psychology (Cameron, MacGregor, & Kwang, 2013; Mruk, 2013; Trzesniewski, Donnellan, & Robins, 2013; Zeigler-Hill, 2013). This has meant that this concept has developed different definitions (Brown & Marshall, 2006; Moller, Friedman, & Deci, 2006; Mruk, 2013). The term ‘self-esteem’ has come to refer to a personality variable that represents how individuals generally evaluate themselves (trait self-esteem), a self-evaluative reaction to specific emotionally-laden events (state self-esteem), and an evaluation of personal abilities and attributes (domain-specific self-esteem) (Brown & Marshall, 2006). In each of these areas, when the evaluation is **positive** and the individual expresses a favourable opinion of him- or herself, then that individual is said to experience high self-esteem, whereas low self-esteem emerges when an individual has a fundamentally uncertain or negative view of him- or herself, whether globally or specifically.

Although low self-esteem is not in itself considered a psychological disorder, it does play a significant role in psychopathology. In the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000), low self-esteem was either a diagnostic criteria for, or associated feature of, 24 different mental health disorders (O’Brien, Bartoletti, & Leitzel, 2006). In a recent meta-analysis of longitudinal studies of anxiety and depression, Sowislo and Orth (2013) concluded that low self-esteem was both a significant predictor and causal factor of both conditions.

1.2. The cognitive therapy model of self-esteem

In the cognitive therapy model of self-esteem (Fennell, 1997), which is based on Beckian schema theory (Beck, 1967), low self-esteem is defined as a global image of the self,

which is persistent, derogatory, habitual and largely outside of awareness, and is referred to as the *bottom line* (e.g. “I’m worthless”). It is postulated that rules for living are developed in order to keep the bottom line hidden from the view of others (e.g. “I must succeed at everything I do”). When a situation arises where the rule may be violated, such as potential or actually failing a task, the bottom line becomes activated fuelling predictions of negative consequences, such as judgment from or punishment by others. This leads to a rise in anxiety and associated self-defeating and safety-seeking behaviours, such as withdrawal, self-focus, or reassurance seeking; these short-term behaviours, however, serve to confirm the ‘truth’ of the bottom line. Focusing on the bottom line increases self-critical intrusive thoughts leading to a lowering of mood. Fennell (1997) proposes that the bottom line becomes more easily activated when mood is low, which then strengthens a vicious cycle of negative thinking, anxiety, unhelpful behaviours, self-criticism and depressed mood.

Using this model as a guide, the aims of cognitive therapy are to weaken old, negative beliefs and to establish a more positive alternative. This is done by re-evaluating negative predictions, reducing symptoms of anxiety, changing behaviour, shifting perceptual bias and reducing self-critical thinking (Fennell, 1997). Evidence has shown that cognitive therapy interventions based on this model may indeed help clients improve self-esteem (Pack & Condren, 2014; Waite, McManus, & Shafran, 2012).

1.3. Self-critical rumination: An important construct in understanding low self-esteem?

A prominent feature of Fennell’s cognitive model of self-esteem (1997) is the heightened presence of self-criticism in those with low self-esteem. Self-criticism is defined as “a form of negative self-evaluation in which judgmental, condemning, and attacking thoughts are directed to the self, especially in the context of perceived mistakes, failures, and inability to live up to one’s own or others’ standards” (Smart, Peters, & Baer, 2015, p. 1). Higher levels of self-criticism have been linked to low self-esteem (Grzegorek, Slaney,

Franze, & Rice, 2004; Heimpel, Wood, Marshall, & Brown, 2002) and to several forms of psychopathology as well as impaired functioning in adulthood (Gilbert, Clarke, Hempel, Miles, & Irons, 2004; Gilbert & Procter, 2006; Shahar, 2015; Smart et al., 2015). However, the tendency to engage in self-criticism is common and various researchers have suggested that moderate ‘doses’ of it can serve to self-correct, prevent future errors, and improve oneself (Driscoll, 1989; Gilbert, 1997).

It has recently been argued that self-criticism may become problematic if it escalates to a ruminative style of thinking (Smart et al., 2015). Rumination is a cognitive process that involves self-focused attention, repetitive focus on one’s negative affect as well as its causes and consequences (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Treynor, Gonzalez, & Nolen-Hoeksema, 2003) and has been associated with the onset and maintenance of symptoms of psychopathology because it enhances the emotional states related to the content of thought and interferes with effective problem-solving (Nolen-Hoeksema et al., 2008).

Rumination, particularly the tendency to brood by thinking anxiously or gloomily, has been shown to moderate the effects of self-criticism on levels of suicidality and depression (O’Connor & Noyce, 2008; Spasojević & Alloy, 2001) as well as the effects of low self-esteem on depression (Kuster, Orth, & Meier, 2012). More recently, Smart and colleagues (2015) have provided evidence to suggest that ‘self-critical rumination’, which refers to the process of ruminating specifically on the content of self-critical thoughts, may be a separate construct from that measured by general measures of rumination, such as the Rumination Response Scale (Treynor et al., 2003).

1.4. Self-critical rumination: Could metacognition be a driver?

Although Fennell’s (1997) cognitive therapy model goes a long way to explain the crucial role of negative beliefs about the self in propagating low self-esteem, it fails to operationalise the mechanisms that bring to ‘focus on the bottom line’ and maintain attention

on self-critical intrusive thoughts leading to a lowering of mood. In other words, Fennell's model appears to ignore the role of rumination, particularly in the form of self-critical rumination, in maintaining self-critical intrusive experiences that are so crucial for the lowering of self-esteem.

A theoretical framework which may be useful in shedding light on the mechanisms driving and maintaining self-critical rumination is the Self-Regulatory Executive Function (S-REF) model described by Wells and Matthews (1994, 1996). This model emphasizes the key role played by the mechanisms which generate, monitor and maintain intrusive experiences, rather than focusing upon the content of such experiences (Wells, 2009). From this perspective psychological distress is rooted in the selection and implementation of coping styles, based on metacognitive beliefs (beliefs about our internal events and how to control them), which focus attention towards distress congruent information (e.g. environmental threats) establishing a vicious cycle where faulty coping style 'blueprints' are consistently applied to alleviate distressing experiences, yet a successful resolution fails to be achieved. Over time the combination of applying the same blueprints leads to the development of an internal dissonance characterized by negative appraisals towards the selected coping styles and internal experiences more generally.

The S-REF model also distinguishes between two different modes of processing thoughts: object mode and metacognitive mode (Wells, 2009). In object mode, thoughts are not distinguished from sensory stimuli. Both inner and outer events are treated equally in an undifferentiated consciousness and responded to accordingly. In the metacognitive mode, however, thoughts are consciously perceived as being separate from the self and the world and can instead be observed by the individual and evaluated objectively for their veracity.

The S-REF model has already been applied to conceptualising Generalised Anxiety Disorder, Major Depressive Disorder, Obsessive-Compulsive Disorder, Post-Traumatic

Stress Disorder and problem drinking with interventions based on this framework having been found to be effective (for a review see Wells, 2009, 2013). In the case of self-critical rumination, it may be valuable to gain a better understanding of aspects of metacognition that may promote the engagement in this activity (as a coping style) with consequent worsening of self-esteem.

1.5. Aims of the current study

To date, no research has been conducted on investigating aspects of metacognition involved in the activation and perseveration of self-critical rumination. In the early stages of research, metacognition is typically explored using the metacognitive profiling interview (Wells, 2000). This interview has already been successfully employed to identify crucial facets of metacognition in desire thinking (Caselli & Spada, 2010), distress in Parkinson's disease (Fernie et al., 2015), pathological procrastination (Fernie & Spada, 2008), problem drinking (Spada & Wells, 2006), problem gambling (Spada et al., 2014), rumination (Papageorgiou & Wells, 2001) and smoking (Nikčević & Spada, 2010). In line with a metacognitive conceptualization we thus aimed to profile: (1) the presence of specific metacognitive beliefs about self-critical rumination; (2) the goal of self-critical rumination, and its start and stop signals; and (3) the degree of detachment from intrusive self-critical thoughts.

2. Method

2.1. Participants

The Research Ethics Committee at London South Bank University reviewed all of the material for this study, including the interview template, marketing materials and process for recording and transcribing the interviews. Twelve individuals completed the study (3 male; mean age 23.9 years, $SD= 4.6$ years, range 18-33 years). Average scores on the Rosenberg Self-Esteem Scale (Rosenberg, 1965) were 12.9 (range=11-16; standard deviation=1.9) indicating predominantly low levels of self-esteem in the sample (the cut off for low self-esteem is a score of 14 or below). Participants identified their ethnicity as: Black British (3); Asian (3); White British (2); White European (1); and Other/Mixed (2). Inclusion criteria were: (1) reporting low self-esteem; and (2) possessing a self-acknowledged tendency to judge oneself critically. Exclusion criteria were: (1) being currently engaged in psychotherapy; and (2) being on a course of medication related to a diagnosis of a mood disorder. The research team surmised that active treatment for a mood disorder could impact the level of self-critical thinking and/or self-critical rumination or could provide insights that might change the way the participant views their self-critical thoughts. Two participants did not meet the eligibility criteria, as levels of self-esteem were considered too high for this study. Their interviews were discarded.

2.2. Procedure and interview

Participants were recruited after responding to a flyer placed in university and work settings asking for individuals who regularly experience low self-esteem, with high levels of self-criticism. Recruitment occurred between January and July 2015 with all participants agreeing to take part in the study. Participants were interviewed by the first author, a psychotherapist specialized in cognitive behavior therapy, who was supervised by the fourth author, a psychologist and trained metacognitive therapy practitioner, in using the

metacognitive profiling interview (Wells, 2000) adapted to focus specifically on self-critical rumination. The interview, which was audio recorded, lasted approximately 30 minutes and was conducted and transcribed by the first author, who then generated a list of responses to the interview questions. The research team then collaborated to identify the positive and negative metacognitive beliefs related to self-critical rumination. The quotes presented were synthetic extracts identified by the evaluators (first, second and fourth author). No marked discrepancies were observed in the identification and selection of these synthetic extracts.

Each participant was interviewed about their experience of self-critical rumination following the failure of a task or an error of commission. All participants were asked to recount a recent episode that triggered self-critical rumination and the interview consisted of three stages (see Table 1): The first stage explored positive and negative metacognitive beliefs by asking about the advantages and disadvantages of engaging in self-critical rumination. The second stage enquired about the goal of self-critical rumination and how to identify when this goal would be accomplished (the stop signal). The third stage examined the degree of detachment from intrusive self-critical thoughts.

3. Results

Situations recalled by participants which triggered self-critical rumination included variations of achieving a poor grade on an assignment or exam, making a mistake at work, having an awkward social interaction with a friend, having an argument with a partner, and failing a test (e.g. a driving test). All participants were able to identify advantages (i.e. positive beliefs) and disadvantages (i.e. negative beliefs) of self-critical rumination. The content of these positive and negative metacognitive beliefs about self-critical rumination are displayed in Table 2. Positive metacognitive beliefs concerned the usefulness of engaging in self-critical rumination as a means of improving cognitive performance (particularly judgement) and enhancing motivation. Negative metacognitive beliefs concerned the

uncontrollability of self-critical rumination and its negative impact on mood, motivation and perception of self-worth.

In response to the question concerning the goal of engaging in self-critical rumination, eight participants stated the desired goal for engaging in self-critical rumination was to achieve a better or clearer understanding of a given trigger situation or to feel more motivated to resolve it. However, only four participants endorsed being able to identify when their goal had been achieved. The most common method of determining that the goal had been achieved was if the trigger situation were not to occur again.

The last three questions in the interview involved investigating the relationship that the participants have with their self-critical thoughts (self-criticism). Nine out of the 10 participants reported that they either definitely, or more often than not, identified their self-critical thoughts as facts. Four of these participants stated that they were unable to view these thoughts as cognitive distortions, whilst four considered them to be distortions either some of the time or after the passage of time. One participant was able to acknowledge viewing self-critical thoughts as distortions in addition to viewing them as facts, but also stated that confidence in the ability to tell the difference between the two was low. Lastly, all participants were in agreement that detaching from self-critical thoughts in order to observe them without identifying with them (being in metacognitive mode) was particularly challenging with only two participants reporting being able to do so some of the time.

4. Discussion

4.1. Findings

The findings of this study suggest that specific facets of metacognition may play a role in the activation and perseveration of self-critical rumination, a possible driver of low self-esteem. The results are consistent with Wells & Matthews' (1994, 1996) S-REF model and align themselves to previous findings employing metacognitive profiling.

Positive metacognitive beliefs concerned the usefulness of engaging in self-critical rumination as a means of improving cognitive performance (particularly judgement) and enhancing motivation. These beliefs may justify the activation of self-critical rumination as a means of 'mental' problem-solving and coping following real or imagined episodes of failure, and/or awkward social and interpersonal situations. Negative metacognitive beliefs concerned the uncontrollability of self-critical rumination and its negative impact on mood, motivation and perception of self-worth. The S-REF model (Wells, 2000) distinguishes between two categories of negative metacognitive beliefs: danger/harm and uncontrollability. It also suggests that psychological disturbance occurs when coping strategies (in this case, self-critical rumination) become perseverative and are perceived as uncontrollable (Wells & Matthews, 1994). Consistent with both of these aspects of the S-REF model, negative metacognitive beliefs conveyed by the participants in this study may play a role in propagating negative affect and lead to a perseveration of self-critical rumination, because the individual remains locked in object mode, perceiving the self-critical thoughts both as facts and potentially harmful without being able to detach from them.

The majority of participants engaged in self-critical rumination as a coping strategy to achieve a better or clearer understanding of a given trigger situation or to feel more motivated to resolve it. However, only four participants were able to identify when the goal had been achieved. The most common method of measuring whether the goal had been achieved was if the trigger situation were not to occur again; a near-impossible task, with no endgame since the individual is unable to predict the future. Herein also lies a clear contradiction between the perception of the benefits of engaging in self-critical rumination (underscored by positive metacognitive beliefs) and the difficulties in knowing when to stop, because the activity itself lowers mood and affects judgement (so the 'stop' signal is not achieved). Equally, relying on the stop signal that trigger situations will not re-occur at any point in time is a high risk

strategy with negligible success potential. The incongruence between the goals and stop signals identified may explain why self-critical rumination begins and why it is difficult to discontinue once initiated. In support of this view eight of the participants reported that they would engage in self-critical rumination from several hours to several days following a perceived mistake or failure. In this respect self-critical rumination shows some similarity with other forms of perseverative thinking such as desire thinking, rumination, and worry (Caselli et al., 2010; Wells & Papageorgiou, 1995; Wells, 2000).

The final phase of the interview asked participants about their ability to distance themselves from their self-critical thoughts and see them as distorted or biased thinking rather than as facts. Self-critical thoughts have been described as an 'inner voice' that an individual repeatedly hears denigrating him or her (Gilbert et al., 2004; Noordenbos, Aliakbari, & Campbell, 2014), from which it can be difficult to detach (Whelton & Greenberg, 2005). In this study, the participants unanimously stated that they were either unable to detach from their self-critical thoughts or could do so some of the time with varying degrees of success. More often than not, though, self-critical thoughts were viewed as facts and would rarely be seen as distorted or biased.

The evidence suggests that individuals with self-identified low self-esteem may operate almost exclusively in object mode with respect to their self-critical thoughts and appear to have a lack of awareness about the ability to experience thoughts in metacognitive mode. This finding supports previous research on the relationship between psychopathology and lack of awareness of how to detach from negative intrusive thoughts as described in metacognitive theory (Wells, 2009).

4.2. Improving low self-esteem: A role for Metacognitive Therapy?

One of the limitations of the cognitive therapy model of self-esteem (Fennell, 1997) is that it does not conceptualise and target self-critical rumination. The findings from our study

suggest that the techniques and principles of metacognitive therapy (Wells, 2009) may thus be beneficial in helping patients discontinue self-critical rumination. The adapted metacognitive profiling interview presented could help elicit useful information about metacognitive beliefs and metacognitive plans involved in both the initiation and maintenance of self-critical rumination. Metacognitive beliefs could be questioned and modified using re-attributional techniques (Wells, 2009) whilst the role of self-criticism in affecting cognitive-emotional states and behavioural control could be reviewed. In addition, a variety of strategies could be employed to actively interrupt self-critical rumination, such as attention training and detached mindfulness, which have already been employed successfully in treating rumination in depression and worry in generalized anxiety disorder (Wells, 2013).

A central benefit of interrupting self-critical rumination could be that of fostering ‘unconditional self-acceptance’ (Ellis, 1996), the achievement of full acceptance of oneself irrespectively of personal ability or external approval. Indeed evidence has suggested that higher levels of self-esteem are related to unconditional self-acceptance (Davies, 2006; Thompson & Waltz, 2008).

4.3. Limitations and directions for future research

There are several limitations to this study that need to be acknowledged when interpreting these findings. Firstly, the sample size was small and predominantly female. Secondly, each participant was asked to recall a recent event and so responses were based on retrospective self-reporting. Thirdly, levels of trait self-criticism, rumination and/or the self-critical rumination were not measured. Fourthly, individuals with genuine high self-esteem or fragile high self-esteem (where positive judgments of the self are either contingent on external criteria, incongruent with low emotional and implicit feelings toward the self, or unstable over time) were not investigated (Borton et al., 2012; Kernis, Lakey, & Heppner, 2008). Lastly, the structured interview, although widely used and useful to elicit relevant

aspects of metacognition, may also introduce biases, both by the participants' self-reports and investigator evaluations. This limitation also meant that implicit self-esteem could not be measured, because inclusion criteria were only based on self-identified low self-esteem, which makes it explicit (Bosson, Swann, & Pennebaker, 2000; Jordan et al., 2006). Future research will benefit from widening the sample population and exploring real-time situations where participants are faced with experiences that activate their self-critical thoughts (content) and rumination (process). It will also be important to explore the link between metacognition and both types of high self-esteem.

In conclusion, we believe that this study provides useful information regarding the role of metacognition with respect to self-critical rumination in low self-esteem, and the potential relevance of the S-REF model. Based on this study, future research could provide a more thorough understanding of how metacognition may drive self-critical rumination, whether positively or negatively, which could have significant therapeutic benefits.

Compliance with Ethical Standards:

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Conflict of Interest: The authors declare that they have no conflict of interest.

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Table 1: Metacognitive profiling template.

<p>Antecedents</p> <ul style="list-style-type: none"> - ‘When you felt low after making a mistake, failing a task or doing something that you shouldn’t have, did you have any judgmental thoughts about your worth or being worthless?’ - Did you notice that you were ruminating about something? What was your rumination like?’
<p>Positive metacognitive beliefs about self-critical rumination</p> <ul style="list-style-type: none"> - ‘Do you think there are any advantages to repeatedly judging yourself or being self-critical?’ - ‘If so, what are the advantages?’
<p>Negative metacognitive beliefs about self-critical rumination</p> <ul style="list-style-type: none"> - ‘Do you think there are any disadvantages to repeatedly judging yourself or being self-critical?’ - ‘If so, what are the disadvantages?’ - ‘Can judging yourself or being self-critical in certain ways be harmful or dangerous?’ - ‘In what way could it be dangerous or harmful?’
<p>Goals of self-critical rumination and stop signal</p> <ul style="list-style-type: none"> - ‘What was your goal in being repeatedly self-critical?’ - ‘How did you know that you had accomplished your goals?’ - ‘What was the effect of your coping strategies on your feelings and thoughts?’
<p>Detachment from intrusive self-critical thoughts</p> <ul style="list-style-type: none"> - ‘Did you accept your self-critical thoughts and judgments as facts, based in reality?’ - ‘Could you see your self-critical thoughts as reflecting the reality of a given situation?’ - ‘Can you keep your distance from these self-critical thoughts when they occur?’

Table 2: Positive and negative metacognitive beliefs of about self-critical rumination.

Participant	Positive Metacognitive Beliefs	Negative Metacognitive Beliefs
1	<p>“[Engaging in self-critical rumination] helps to be more realistic and logical.”</p> <p>“[Engaging in self-critical rumination] can prepare me for the next step.”</p>	<p>“[Engaging in self-critical rumination] makes me feel very tired and I can't do anything or have any motivation or appetite to do another thing”.</p>
2	<p>“[Engaging in self-critical rumination] can motivate me to practice harder...” (this is a bit vague)</p>	<p>“I end up feeling quite low about myself and especially with my friends.”</p> <p>“You kind of send yourself off to a really dark place...which I found is really hard to come back from. ... Like, you end up thinking things that most normal people wouldn't think about more often. So, really dark depressing thoughts and urges.”</p> <p>“Even though you know that it's not for the best, you do find yourself thinking about it a lot.”</p>
3	<p>“[Engaging in self-critical rumination] can sometimes help you avoid making the worst mistakes of your life...”</p>	<p>“It sometimes makes me feel I'm worthless and sometimes it make me feel I don't even have a fixed place, I don't know what I want.”</p> <p>“That voice keeps on speaking and speaking and I completely miss everything.”</p>
4	<p>“[Engaging in self-critical rumination] can prevent [the mistake] from happening again.”</p>	<p>“[Engaging in self-critical rumination] can demotivate you to do the things you're supposed to be doing...”</p>
5	<p>“[Engaging in self-critical rumination would make me] try not to do that again.”</p>	<p>“I would think about it [mistakes] constantly.”</p>
6	<p>“[Engaging in self-critical rumination] produces a sense of order...and it helps you to reflect on the impact of other people; to make things better going in the future.”</p>	<p>“Some of the stuff I've wanted to do, I haven't been able to do, because I've just talked myself out of it or I've just told myself already that I won't be able to do it or I won't be good at it...and you miss a lot of opportunities.”</p> <p>“[Engaging in self-critical rumination] means more stress on</p>

		you...and can lead you ultimately to depression.”
7	“[If you engage in self-critical rumination,] you will be less arrogant.”	“[Engaging in self-critical rumination] makes you stressed.”
8	“[Engaging in self-critical rumination] is good for finding clarity.”	“You get stuck in a situation where you keep trying to think about what's gone wrong and you want to make it better but you get stuck in the situation where you can't and you feel trapped in a way.”
9	“If you don't criticize yourself at times, then how will you ever improve?”	“[Engaging in self-critical rumination] knocks your confidence... stops you from doing things...lower your mood.”
10	“Next time you can actually stop and think before saying everything you want...”	“I keep on being stuck on that thought, even if it's completely useless...and I feel a kind of distress over that.”