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The role of maladaptive anger in self-criticism: A quasi-experimental study on emotional processes

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Abstract

The present study examines the role of emotion in the self-critical process of individuals with anger problems. Self-criticism is a prevalent intra-personal feature which greatly impacts an individual's emotion. So far, it is unclear, which emotions individuals with maladaptive anger experience when they work through their self-criticism. Using a quasi-experimental design, the present study compared $n = 23$ anger-prone under-graduate students to $n = 22$ controls on process indices of contempt, fear, shame, anger, and global distress, as well as on their access to underlying need, as participants were working through personalized self-critical content. This was achieved using a single-session enactment from emotion-focused therapy, augmented with a standardized procedure for priming participants to focus on their unmet needs. Findings suggested that this work on self-criticism reduced for both groups distress, fear and shame, as well as increased assertive anger (McNemar tests significant at $p = .05$). More centrally, anger-prone individuals expressed more self-contempt ($t(1, 44) = 3.65$; $p < .05$), and they had more difficulty in accessing their underlying need ($\chi 2 = 5.35$; $p < .05$), when compared to controls. These results have implications for clinical work with anger-prone individuals, and clarify key features in the use of enactment interventions when working towards emotional resolution. The present study also demonstrates the use of personalized stimuli in the context of clinically relevant quasi-experimental research on emotional processes.

Key-Words: Self-Criticism; Anger; Emotion Processing; Experimental; Contempt; Need

The role of maladaptive anger in self-criticism:

A quasi-experimental study on emotional processes

Self-criticism is a self-referential process that is significantly associated with a number of psychological disorders. It refers to the individual applying a "conscious evaluation of oneself that can be healthy and reflexive behavior, but also can have harmful effects and consequences for an individual" (Kannan & Levitt, 2013, p. 166). These harmful effects may involve being harsh and condemning, expressing hatred, contempt and loathing towards oneself. In the context of help seeking individuals, self-criticism is believed to impact the quality of otherwise strong therapeutic relationships (Whelton, Paulson, & Marusiak, 2007), undermining one's interaction with an attending clinician (Shahar, 2004).

Self-criticism has been conceptualized within cognitive models as a specific form of self-referential mode of information-processing that is characterized by its relentlessness, and its hypercritical and punitive nature (Beck, Rush, Shaw & Emery, 1979). Cognitive models have also conceptualized it in terms of negative thoughts and maladaptive schemas (Beck et al., 1979; Schmidt & Joiner, 2004). Research on self-criticism has also explored it as a trait aspect of personality (Mongrain, 1993), as well as a correlate of interpersonal behaviors, such as quarrelsomeness (Kopala-Sibley, Rappaport, Sutton, Moskowitz, & Zuroff, 2013; Sadikaj, Moskowitz, Russell, Zuroff & Paris, 2013; Zuroff, Moskowitz & Côté, 1999). Finally, neuroimaging studies have explored the biological underpinnings of self-criticism lending some support to the cognitive framework (Longe, Maratos, Gilbert, Evans, Volker, Rockliff, et al., 2010; Doerig, Schlumpf, Spinelli, Späti, Brakowski, Quednow et al., 2013): these studies were able to identify specific patterns of neural activation related to self-critical processes.

However, the cognitive or interpersonal perspectives on self-criticism are not sufficient to explain individuals' emotional processes and reactions associated with self-

criticism (Greenberg, 2002; Hooley, Siegle & Gruber, 2012; Whelton & Greenberg, 2005), they tend to lack the detailed description of the emotional or experiential response to the cognitive/interpersonal stimuli. Also, these conceptual frameworks do not enable one to study self-criticism as an unfolding process-state from one moment to the next, which is the closest to how it manifests in a treatment session. Research has suggested that emotional reaction to problematic experience is a multi-step process (e.g., Pascual-Leone & Greenberg, 2007), evolving from undifferentiated affective responses to more meaning-laden, differentiated and idiosyncratic constructions. In order to optimally observe such emotion changes, occurring as individuals work through their self-criticism, the use of imaginal dialogues has been suggested as a paradigm for collecting observational process-data (Whelton & Greenberg, 2005).

The role of maladaptive anger in self-criticism

Problematic (or maladaptive) anger is a common feature of a number of psychological disorders, such as depression, eating disorders, complex trauma, social anxiety and personality disorders (e.g., Beck et al., 1979; Blatt, 2004; Dolhanty & Greenberg, 2009; Meares, Gerull, Stevenson, & Korner, 2011; Ogrodniczuk & Kealy, 2013; Paivio & Pascual-Leone, 2010; Pos & Greenberg, 2012; Shahar, 2004; Shahar, Blatt, Zuroff, & Pilkonis, 2003). Emotion-focused theory offers a useful perspective for understanding maladaptive anger (Greenberg, 1990; Greenberg & Paivio, 1997; Pascual-Leone, Gillis, Singh and Andreescu, 2013; Pascual-Leone and Greenberg, 2007). In this perspective, various forms of "rejecting" anger (one of which is contempt) can become entrenched and maladaptive, and these must be conceptually differentiated from more healthy and adaptive forms of "assertive" anger. A key discriminating feature in describing these sub-types of anger, is that rejecting anger is an aroused and expressive state where the meaning is not clear, whereas assertive anger can be understood as standing up for one's needs and inner convictions (see Pascual-Leone et al.,

2013, for a detailed formulation of this in the context of psychotherapy). When anger is an issue of concern for individuals with psychological problems, it is usually expressed in terms of maladaptive (rejecting) anger, and/or with an undifferentiated state of reactive global distress. These emotional states are understood as secondary emotional reactions to more core primary emotional states (Greenberg & Paivio, 1997). For example, primary (assertive) anger is a freshly experienced, biologically adaptive emotional reaction in the service of an existential need, which usually relates to affirming aspects of one's identity, self-worth, and survival. We assume that such a primary emotional reaction may emerge in particular when individual work productively through their self-criticism, but it remains hidden and unaccessed in less productive processes.

A recent randomized controlled trial on treatment for clients with borderline personality disorder has empirically demonstrated the differentiation of these two categories of anger (Kramer, Pascual-Leone, Berthoud, de Roten, Marquet, Kolly, Despland, & Page, in press). According to a sequential model of how emotion is processed over time (Pascual-Leone & Greenberg, 2007; Pascual-Leone, 2009), secondary emotions, such as maladaptive rejecting anger, are understood as important initial stepping stones in the process of emotional transformation, -- an often intermediate step in the access of primary emotions. For example, an individual may initially react to a situation of failure with secondary (rejecting anger) as part of a problematic reaction, by harshly accusing another person for the failure. Then, by progressively working through the experience, the same individual may access a more vulnerable aspect of the self related to shame, which contains identity related content (e.g., an existential need for being seen or recognized), which may in turn enable the individual to formulate and express assertive anger (i.e., a primary emotion) toward the resolution of emotional distress, which was initially triggered by personal failure.

Using the imaginal dialogue task to study emotion in self-criticism

A promising way to study the moment-by-moment process of working through self-criticism is the use of lively two-chair enactments. Such lively in-session enactments are borrowed from the principles of emotion-focused and Gestalt therapy (Elliott, Watson, Goldman & Greenberg, 2004; Perls, Hefferline, & Goodman, 1951). Along with the liveliness (i.e., activated emotional content) associated with the idiosyncratic material being processed in two-chair dialogues (Shahar, Carlin, Engle, Hedge, Szepsenwol, & Arkowitz, 2012), this procedure helps to separate out two opposing "parts of the self" (sometimes referred to as "voices") in the person involved in self-critical processes: the punishing "self-critic" and the often anxious or depressed "experiencing self" (Greenberg, 2002; Shahar, Carlin, Engle, Hegde, Szepsenwol & Arkowitz, 2012). The enactment of a dialogue is also helpful in studying change from both the perspective of a softening of the self-critical voice, and also from the perspective of deepening and exploring one's emotional experience in reaction to the critic.

Using two-chair enactments of this kind, Greenberg (1979) investigated the change process in decisional conflicts and demonstrated the importance of the separation into two distinct "voices" (i.e., sides of the conflit), the facilitation of the owning of the emotion associated with each voice, the facilitation of awareness of the process, the facilitation of the patient's quality of experiencing and the support of the emotion expression. In particular, the voice quality related to each side of the emotional conflict as it was enacted, was central. For example, the resolution of the conflict was associated with the lessening of the harshness in the patient's voice observed across time. Whelton and Greenberg (2005) focused on self-criticism while investigating the emotional process of dysthymia by recruiting 60 undergraduate students and asking them to engage in an imaginal dialogue that enacted their self-critical process. They found that the individuals with higher levels of dysthymia presented with more non-verbal (e.g., curled lip; Ekman & Friesen, 1976) and verbal (e.g.,

insults) markers of self-contempt, as compared to a group of controls who did not have depressive features. As part of the experiential reaction to self-criticism, dysthymic individuals presented more shame and sadness, as well as an absence of pride, when compared to controls. Furthermore, contrary to what cognitive models would suggest, the groups did not significantly differ on the cognitive *content* of their self-criticisms. These observations led the authors to conclude that individuals who were more vulnerable to dysthymia and depression differed from those who are less vulnerable mostly on the *emotional* process underlying self-criticism (Greenberg, Elliott & Foerster, 1990; Whelton & Greenberg, 2005). While the study of dysthymia was revealing, the question remains open whether individuals suffering from maladaptive anger would differ in their self-critical process from those who are less anger-prone on emotional indices such as self-contempt or depressogenic process (i.e., shame, fear and emotional collapse).

It was shown that the two-chair dialogue produced change in self-criticism and associated indices of emotional change. Shahar and colleagues (2012) conducted a short intervention using two-chair dialogues with nine women with problems related to self-criticism and demonstrated the positive effects. Their results suggested that such enactment interventions may have a lasting impact on depressive symptoms, increasing the women's capacity of self-compassion, and attenuating the intensity of self-criticism.

The resolution of maladaptive anger was also examined using two-chair dialogues. Diamond, Rochman and Amir (2010) studied a sample of 29 women with maladaptive anger by offering a single-session intervention using two-chair dialogues, along with empathy and relational reframes. Findings showed the women experienced a significant increase in sadness and anxiety after the session, which was understood as due to partially resolving anger, making way for other aspects of emerging experience. Such a partial emotion resolution may be underpinned by the driving force of primary adaptive emotions: getting in touch with some

fundamental human need (i.e., for safety, love, competence, affiliation, nurturance, identity; Pascual-Leone & Greenberg, 2007). Therefore, the partial resolution of maladaptive anger, followed by increases in sadness or anxiety is in line with a sequential model of the emotional change process (Pascual-Leone & Greenberg, 2007).

These findings have also been recently replicated by findings using an imaginal empty-chair dialogue for the resolution of attachment injuries with manifest unresolved anger (Narkiss-Guez, Zichor, Guez, & Diamond, 2015). This study demonstrated for 61 participants that over the course of relational reframe and imaginal empty-chair dialogue, self-reported intensity of (unresolved) anger decreased, whereas intensity of (primary adaptive) sadness at the loss and attachment injury increased. Rochman, Diamond and Amir (2008) applied acoustical analyses to the vocal quality associated with emotional change, as participants with maladaptive anger and sadness underwent a single-session enactment intervention. They found greater non-perceptible micro-variations in the pitch of unresolved sadness as compared to unresolved (i.e., maladaptive) anger. The average and variability of vocal pitch changed for anger, depending on the timing when the anger was evoked, either before or after sadness. Taken together, when self-criticism is considered in the context of maladaptive anger, these studies suggest that it is the "how" of the inner critic, its tone of voice, its association with self-contempt that seems central to be explored further.

Moreover, clinical theory suggests that individuals with maladaptive anger experience more distress, more unresolved emotion (i.e., fear and shame) as an immediate reaction to self-criticism than less anger-prone individuals (Greenberg, 2002; Pascual-Leone et al, 2013). Diamond and colleagues (2010) suggested that working through self-criticism implied the individual eventually acknowledge and experience more vulnerable adaptive feelings, such as hurt and also assertive anger. These latter emotions help to articulate fundamental human needs in relation to the personal difficulty. For these reasons, it seems reasonable to

hypothesize that individuals with maladaptive anger would have more difficulty in identifying and articulating their inner needs and then standing up for themselves using healthy expressions of assertive anger.

Current Study

The objective of the present study was to investigate the emotional processes in individuals vulnerable to anger problems, specifically as they work through their self-criticism. In doing so, we hypothesized there are specific markers of the emotional process which differ between vulnerable and non-vulnerable individuals.

Hypotheses

Hypothesis 1 examined the *process of self-hate* (following Whelton & Greenberg, 2005) and states that: Individuals with maladaptive anger use more contempt when expressing self-criticism, compared to controls. Hypothesis 2 described a *depressogenic process*: Individuals with maladaptive anger respond to their criticism with more fear, shame, or global distress, as compared to controls (see Whelton & Greenberg, 2005). Hypothesis 3 conceptualized the *anger process*: Although they may express maladaptive forms of anger, anger-prone individuals are less likely to be assertive even after being prompted for assertiveness (i.e., a specific priming intervention to promote angry assertiveness; see Method section). Hypothesis 4 (based on Diamond et al., 2010, and Pascual-Leone & Greenberg, 2007) assumed *a missing need* in the resolution of self-criticism in vulnerable individuals: Anger-prone individuals are less likely to state an existential need, even after being prompted to identify unmet needs (i.e., a specific priming intervention to focus participants on an unmet need; see Method section). Finally, hypothesis 5, (based on the emotion-focused model, outlined above) assumed that two central emotion variables, fear/shame and contemptuousness predict the intensity of maladaptive anger.

Method

Participants

A total of *N* = 45 undergraduate students at a Northern American University participated in the study. All participants responded to advertisement for the study by indicating they suffered problems related to self-criticism (i.e., reported "yes" to the item: "Do you tend to criticize yourself, to treat yourself harshly, and get down on yourself about your personal short-comings? Yes/No"). Two further screening questions identified those who were suffering additional problems related with anger (when both items were coded "yes") and who were not (when both "no") according to self-report to each of these items: (1) "Are you quick to anger, or do you sometimes "blow up" and get upset easily? Yes/No" and (2) "Has anyone ever suggested you have an anger problem? Yes/No"). These two further screening questions on maladaptive anger were the basis of the differentiation into the two groups (ANGER vs control). Participants received a small course credit for their involvement in the study. The mean age of the total sample was 21 years. The total sample consisted of 37 females (82%), 29 (62%) Caucasian, 27 (60%) single (i.e., unmarried) persons. In addition, 27 (60%) were employed, 18 (40%) had past or present psychotherapy experience, 9 (20%) had past or present psychotropic medication. The first group, with problems of self-criticism (but without anger problems), included *n* = 22 students ("control group"), the second group, with problems related to both self-criticism *and* maladaptive anger, included, *n* = 23 students ("ANGER group"). As shown in Table 1, there were no between-group differences with regard to demographic variables or treatment history (i.e., psychotherapy or medication). The mean scores on the Beck Depression Inventory – II (Beck, Steer & Brown, 1996) did not differ between the groups and the total sample's score (*N* = 45) denoted a moderate level of depression (14.50). As expected, the two groups differed on their score of maladaptive anger on the Anger-Rumination Scale (Sukhodolski, Golub & Cromwell, 2001): as indicated in Table 1, the ANGER group presented with higher scores than the control group. In a manner

consistent with their selection criteria, the two groups respectively scored within 1 *SD* above vs. 1 *SD* below the average scores for healthy individuals reported by Sukhodolsky and colleagues (2001).

Instruments

Symptom and problem inventories.

Beck Depression Inventory (BDI-II). The BDI-II (Beck et al., 1996) is a 21-item version of the self-reported assessment measure of depressive symptoms. The intensity of each symptom is self-reported on a Likert-type scale (0 - 3). A number of studies have demonstrated its validity and reliability (e.g., Beck, Steer, & Garbin, 1988), with high internal consistency (Cronbach alpha = .86; Beck & Steer, 1984) and test-retest reliability varying between .46 and .90 (Beck, et al., 1988). Internal consistency (Cronbach alpha) for the scale based on this sample was .89.

Anger-Rumination Scale (ARS). The ARS (Sukhodolsky et al., 2001) is a 19-item self-report questionnaire is assessing the level of (maladaptive) anger-rumination using a four-point Likert-type scale ranging between "almost never" (1) and "almost always" (4). There is a general score on rumination used in the present study and also four subscales including anger afterthoughts, thoughts of revenge, angry memories, and understanding of causes. Satisfying convergent and discriminative validity were demonstrated by Sukhodolsky et al. (2001) for the entire scale. The current sample presented a Cronbach alpha of .85.

Manipulation checks.

Overall, manipulation checks served the central function of verifying that the quasi-experimental intervention had the expected impact on a participant. As such, not all manipulation check measures were actively used in testing the hypotheses on maladaptive anger and self-criticism, but rather they served as quality measures of the experimental induction of emotional processes.

Visual Analogue Scale (VAS). The VAS (Albersnagel, 1988) is a self-report questionnaire measuring four affect dimensions, which are dysphoria, hostility, anxiety and positive affect, with a total of 16 items. It has proven valid for detecting small changes in affect (Albersnagel, 1988). Each dimension is assessed on four items which are to be appreciated using a visual analogue scale of 80 mm. lines. They function as continuous "barometers" with anchors on both sides, ranging from "not at all" to "extremely." The participant needs to place a vertical line at the point corresponding to his or her current subjective affective state. The VAS was used to measure the impact on specific emotions of the various steps of the quasi-experimental task. A mean score per dimension was computed. Cronbach alpha for the current sample was .77.

State Self-Esteem Scale (SSES). The SSES (Heatherton & Polivy, 1991) is a self-report questionnaire comprising 20 items assessing fluctuations associated with cognitive aspects of self-esteem. A 5-point Likert scale was used. Validity of the scale, as well as its sensitivity to laboratory manipulations, was shown by Heatherton and Polivy (1991), in particular its high internal consistency (Cronbach alpha = .92). The SSES was used to test the impact on self-esteem of the imagination step related to failure. An overall mean was computed. Cronbach alpha for the current sample was .88.

Self-Assessment Manikin (SAM). The SAM (Bradley & Lang, 1994) is a self-assessed instrument using single items to measure the momentary levels of arousal and of dominance, using a 9-point Likert scale, ranging, for arousal, from "not excited at all" (1) to "very excited (9). The SAM was used to measure the impact on arousal and dominance of the various steps of the experimental task. This scale is widely used in emotion research and has proven its validity and reliability (e.g., Bradley, Greenwald, Petry, & Lang, 1992).

Vividness of Visual Imagery (VVIQ). The VVIQ (Marks, 1973) is a 16-item self-report questionnaire assessing the vividness of an actual imagery, using for the assessment a

5-point Likert scale, ranging from "not at all" (1) to "very vivid" (5). The scale presented with acceptable construct and criterion-related validity, as well as internal consistency (.88) and test-retest reliability (.74; McKelvie, 1995). The present study followed the example of Whelton and Greenberg (2005) and only used five items in order to establish an additional manipulation check for vividness of the imagination procedure (described below). An overall mean was computed. Cronbach alpha for this scale was .83.

Relevance questionnaire (RQ). The relevance questionnaire (Kramer & Pascual-Leone, 2013) is a five items-scale aiming at assessing the personal relevance of a specific interactional situation. All items must be rated using a Likert-type scale ranging from "not relevant at all" (1) to "extremely relevant" (5); a mean score is computed. The RQ aims at assessing the link between the contents worked in the session and the person's daily life. It was developed specifically in the context of the present study and no other validity data are available, so far. The items apply to the current experimental situation. Internal consistency in this study was .78.

Process measures of emotion.

Classification of Affective Meaning States (CAMS). The CAMS (Pascual-Leone & Greenberg, 2005) is an observer-based rating system for the process-assessment of distinct affective-meaning states in therapy sessions, based on a synthesis of current emotion-focused theory (i.e., Greenberg and Paivio, 1997) with empirical observations from a series of intensive case studies (Pascual-Leone & Greenberg, 2007). The original CAMS assesses 10 affective-meaning states: global distress, fear/shame, rejecting anger, negative evaluation, need, relief, hurt/grief, assertive anger, self-compassion, and acceptance/agency. Because the present study focused on a specific sub-set of emotions within a quasi-experimental manipulation, we included global distress, fear/shame, rejecting anger, assertive anger, and need. Each emotion – or affective-meaning state – is coded according to 5 criteria: (a)

emotion/action tendency (i.e., what is the action tendency observed in the excerpt?), (b) expression (i.e., how intense is the arousal in this excerpt; which non-verbal behaviors may be observed?); (c) vocal quality (i.e., how can the individual's voice be described in this excerpt?, what is the individual trying to convey using para-verbal aspects?), (d) stance (i.e., what is the overall adaptivity of the emotion in this excerpt?), (e) specificity (i.e., in what sense is the emotional state observed different from another emotional state?). Inter-rater reliability for the 5 CAMS-categories included were assessed using two independent raters on n = 17 randomly chosen cases (38% reliability sample). Inter-rater reliabilities for the Classification of Affective-Meaning States (CAMS) ranged between kappa = 1.00 and = .57 , with an average of .87 (SD = .16).

Degree of Observed Contempt. For the present study, we developed a coding scheme measuring contemptuousness (of the self-criticism). Coding criteria for the scale were based on relevant aspects of work by Ekman and Friesen (1978), Gottman, (1994), Rice and Kerr (1986), Whelton (2000) and Whelton and Greenberg (2005) and represented an independent 3-point Likert-type scale measuring the degree of contempt, ranging from 0 (absent), over 1 (moderately present) to 2 (clearly present). Consistent with the literature, we describe verbal manifestations (e.g., insulting comments) and non- and para-verbal manifestations (e.g., head-shaking, raise of chin, tightness in the eyes, exaggerated sigh; Ekman & Friesen, 1975; Whelton & Greenberg, 2005) of contempt. Reliability for this category was assessed using two independent raters on n = 17 randomly chosen cases (38% reliability sample). Inter-rater reliability of this specific dimension of contemptuousness was ICC (1, 2) = .77.

Interventions and Procedures

Structured therapeutic intervention to address self-criticism.

A formal treatment intervention called the "two-chair task" borrowed from emotion-focused therapy (Elliott et al., 2004; Greenberg, 2002) was modified and standardized for

experimental procedures (see procedures, below steps 2, 3, and 5). Because of a computerized recruitment procedure, the person who facilitated the intervention was blind to the condition each participant was in (ANGER/control).

The research procedure was comprised of five parts, all within a session of approximately 50 minutes in total. The five parts were punctuated by two intermediate manipulation checks, as well as assessments at pre- and post-intervention (see figure 1 for a schematic overview and timeline for all procedures and all assessment points). The entire process was video-recorded, after a written consent was obtained.

(1) Mood induction. After the pre-intervention assessment (Assessment 1; Table 2), the participants were given a mood induction task and asked to imagine a specific situation of failure from their lives; with the following instruction: "Try to remember a specific time in your life when you've failed at something. It may have been because you did something wrong, or maybe you just didn't do something that was needed at that time. Try to remember: What was going on? What was at stake? What were you hoping for? What did it feel like to be you at that moment?" The participants were given time to silently imagine as part of the guided activity. After 5 minutes, manipulation check questionnaires were given (VAS, SSES, SAM, and Vividness Scale; Assessment 2; Table 2).

(2) Self-critical voice. The participants were then asked to change chairs and face the empty chair they had been in for the imagination task. We then gave the following instruction: "Every person has a side of themselves which watches, monitors, and evaluates what they do. What people criticize themselves for is different from person to person, but usually we all have some version of this self-critical voice in our heads. Now I am going to ask you to 'be that voice.' Imagine yourself where you were, sitting in that chair [across from participant], and that from where you sit now you are this critical judging part of yourself. Try saying out loud to him/her whatever the judging voice would say about the failure. Be that judging voice

now and tell [insert name of participant] what you have to say." (adapted from Whelton & Greenberg, 2005, p. 1587). This process was given 5 minutes. The clinical researcher provided empathic support encouraging the process of describing the emotional processes in detail, however, no content-related interventions were made.

(3) Initial reaction. Right after this, we asked the participants to change chairs back again and gave the instruction: "Here you are [insert name of participant]: What is it like to be on the receiving end of this message? You are now facing your critic right over there. How do you respond? What do you want to say in reaction to this criticism?" (adapted from Whelton & Greenberg, 2005, p. 1587). The participant was given 5 minutes to respond, followed by a manipulation check (Assessment 3; Table 2).

(4) Written priming task. Without leaving the context of the self-criticism task, participants were given the sentence completion task for priming emotion. This served as a written micro-intervention (Pascual-Leone, 2010) to facilitate self-assertion in relation to their critical voice. To offer increased standardization and structure of a therapeutic task within our quasi-experimental design, we made use of a strategically timed sentence completion task to prompt healthy (i.e., primary adaptive) emotion. The sentence completion task for priming emotion (Pascual-Leone, 2010) is a two page written exercise specifically designed to help participants do two things: (1) identify an unmet existential need and (2) to prompt assertion Therefore, it is consistent with the sequential model of emotional change (Pascual-Leone & Greenberg, 2007) which posits the facilitation of primary adaptive emotions (e.g., assertive anger) through access to a congruent existential need. This written task aims at putting participants in the mindset for assertive anger and the notion of standing up for oneself and expressing one's need. On the first page (part 1), participants were prompted to: “Consider what you needed most (or still need) in relation to the personal difficulty or failure (see step 1).” The tool then asks participants to choose from a list of possible needs and “briefly explain

or elaborate why you identified the above needs." On the second page (part 2), participants were asked to complete a series of 3-4 sentence stems designed to promote assertive anger in the service of a clearly identified existential need. Participants were explicitly told: "The purpose of these incomplete sentence stems is to help inspire you (if they apply) when you work on responding to your critic" regarding the personal failure you identified. Sentence stems asked participants to complete, in written form, sentences such as: "My anger is constructive because...", "I have the right to be assertive because I...", "I will fight for...". This induction phase lasted less than five minutes. The instrument, which was used as an intervention, rather than an assessment tool, was developed based on clinical examples given in the CAMS measure (Pascual-Leone & Greenberg, 2005) and has received empirical support as a tool for priming emotion in an experimental design with a student sample (Rohde, Stein, Pascual-Leone, & Caspar, in press). Copies of the tool are available by contacting [insert second author's email] or going to [insert website].

(5) Reaction following priming. After this short written task, designed to assist participants in responding adaptively to their critic, participants were asked to re-enter the self-critical dialogue in the same chair as they were in step (3) with the following instruction: "Let's come back to the dialogue. Using the notes you have just written, try again to imagine your critic sitting here confronting you from that chair over there. So like before, you are [insert name of participant] and have been on the receiving end of this message. What do you want to say in reaction to the criticism?" The participant was given 5 minutes to respond followed by a (final) manipulation check (Assessment 4; Table 2).

In the last step (6), participants were debriefed about the objectives and methods of the study. Because such a two-chair dialogue can have a powerful impact on the person's experience of him or herself, the researcher offered time for a supportive debriefing/ discussion and provided all participants with a referral list for psychological services.

Procedures for coding emotion.

As indicated in figure 1, three different moments were coded using two coding schemes. Firstly, the self-critical voice (participant in the critical chair; procedure step #2) was coded only using the contemptuousness criteria (see above). Secondly, the immediate reaction (procedure step #3) was coded using the five selection categories from the CAMS and thirdly, the reaction following priming (procedure step #5) was coded independently using the same categories from the CAMS. Reliability was calculated separately on contemptuousness and on CAMS-codes.

Statistical analyses

In order to assess between-group differences on emotional processing, *t*-tests for all continuous variables and χ^2 for all dichotomous variables were applied; McNemar tests were used to test within-sample (pre-/post-priming) dichotomous variables. All χ^2 at the level of the reaction following priming took into account the initial frequency of the corresponding affective meaning state. Two potential predictors of maladaptive anger (-rumination) were examined, i.e., fear/shame and contemptuousness, using a hierarchical step-wise regression analysis, in order to test the predictive value of each of the core emotion variables. Bonferroni's corrections were applied where necessary, by adjusting the *p*-value for the number of tests.

Results

Manipulation checks

Preliminary analyses showed that all relevant variables were comparable between the two samples at pre-intervention, except for the level of maladaptive anger-rumination, as anticipated by group selection criteria (Table 1). Manipulation checks comparing the three assessment points (times: 2, 3, 4) with the pre-intervention levels (assessment 1) showed satisfactory results for all variables, confirming the desired impact of each shift in process

according as indicated by procedures (Table 2, time effects). Vividness of the imagery was high in both groups, with no between-group differences, which means that the initial mood induction worked well across groups. In addition, there were no between-group differences at any time-point with regard to the affective variables, as measured on the VAS, as well as the cognitive component of self-esteem (SSES). However, all these variables differed between pre-intervention (time 1) and assessment at time 2 (right after the imagination task) and assessment time 3 (right after the initial reaction), in the direction assumed, which means that the imagination task and the two-chair dialogue had the expected emotional impact on the participants.

Ratings on the SAM indicated that firstly, dominance was rated lower by individuals in the group ANGER, compared to controls; low dominance may be interpreted as low confidence or assertiveness; alternatively, low dominance may be related to secondary helplessness. Whereas these between-group differences vanished across the experiment, the levels for both groups increased between assessment times 1 and 4, meaning that participants went from feeling relatively “small, weak, and not in control” to relatively “big, strong, and in control.” This attests to an effect of the clinical-experimental procedures, as predicted. The arousal dimension indicated all participants were moderately aroused and this was maintained over the entire experiment. This indicates what is presumed to be a constant and moderate emotional engagement of the individuals with the task. Related to this, self-reports showed the personal relevance of content participants worked on was systematically rated as "very high" by individuals, and to an equal degree across the two groups.

It should also be noted that no participants refused to engage in the two-chair enactment task.

Emotional Processing associated with self-criticism

Between-group differences testing confirmed that anger-prone individuals expressed higher levels of contemptuousness during their self-criticism (in step 2 of the experiment; see figure 1), when compared to the controls ($t(1, 44) = 3.65$, $p < .05$, see Table 3), with a medium effect ($d = 0.57$). This confirmed the first hypothesis on self-hate, that anger-prone individuals were more self-contemptuous.

A series of Chi-Square tests on the depressogenic (hypothesis 2) and anger (hypothesis 3) processes did not yield any between-group differences, in particular when controlled for the number of tests. This observation was true for the initial reaction, which corresponds to step 3 of the experiment, and for the reaction following priming, which corresponds to step 5 of the experiment (see Table 3; Figure 1). This means that both participants with anger-problems and without processed depressogenic and anger issues in a similar fashion when working through self-criticism.

As part of an additional manipulation check, we observed, as anticipated, that depressogenic emotions (global distress and fear/shame) decreased between the initial reaction and the second reaction after participants were encouraged to focus on their unmet needs, and offered a structured task to prompt assertive anger (McNemar tests significant at $p = .05$). By the same token, the priming task was also followed by corresponding increases in healthy assertive anger (McNemar test significant at $p = .05$). This means that the priming task, as expected, helped all individuals to use assertive anger and to let go of some of the less helpful global distress, fear, and shame. Interestingly, throughout the task, rejecting anger was almost absent, to the same extent in both groups (McNemar test not significant at $p = .05$).

Finally, we tested the missing need-hypothesis and found a between-group difference supporting our assumption. Whereas in the initial reaction (step 3 of the experiment) to self-criticism, no individuals spontaneously expressed any existential need, after the short priming intervention (sentence completion task in step 4), some participants were able to make use of

the intervention (McNemar test significant at $p = .05$). However, anger-prone individuals were less expressive of their existential needs as compared to the controls (χ^2 (1) = 5.35; $p = .02$; see Table 3) in their reaction following that priming (step 5 of the experiment). Figure 2 illustrates key information from Table 3, showing the experience of distress and the articulation of an existential need over time and how it differed between groups.

Process Predictors of Maladaptive Anger

Finally, we explored observable in-session processes as predictors for reported maladaptive anger-rumination and it appeared that two factors were promising: the initial level of contemptuousness associated with self-criticism and the overall presence of fear and/or shame (across both time-points; see Table 4). In a hierarchical step-wise regression analysis, it appeared that the most parsimonious model, using self-contemptuousness as sole predictor, explained 13% of the variance of maladaptive anger-rumination. This means that the intensity of self-contemptuousness predicts significantly the problems related with maladaptive anger-rumination.

Discussion

This quasi-experimental study focused on the process of working with self-criticism by using a short, clinically relevant intervention that draws on the subjective moment-by-moment experiences of individuals who either do or do not have a propensity toward problem anger. The purpose of this study was not to demonstrate the outcome of an intervention task, but rather to examine the process of emotional change as measured by specific observer-rated indices. The results of this study partially supported our hypotheses.

The elusive power of contempt

The presence of assertive anger did not offer an observable difference between groups, on either time points where it may have appeared. This result confirmed the comparability of groups and also the relevance of the priming task aiming at the promotion of assertive anger.

More specifically, the expression of self-critical content was manifested with a different tone of voice and manner among individuals with maladaptive anger as compared to controls: they expressed more self-hate in the form of contemptuousness. This may involve using insults against oneself, but also using more non-verbal and para-verbal indices of contempt (i.e., head-shaking, raise of chin, tightness in the eyes, exaggerated sigh; Ekman & Friesen, 1975; Whelton & Greenberg, 2005). Our results suggested that contempt can be understood as a major way in which anger is expressed toward oneself during the process of self-criticism. In particular, a hierarchical linear regression confirmed the importance of moment-by-moment contemptuousness for predicting maladaptive anger-rumination: the more contemptuous one was when working through one's self-criticism, the more problems one had with anger-rumination. In line with Whelton and Greenberg (2005), we may speculate that it might not be the cognitive-verbal content (i.e., the negative belief) that is most related to problematic/maladaptive anger, but rather the expressed emotion of contempt, and in particular its non-verbal markers. More research is needed specifically on non-verbal aspects of contemptuousness.

Self-contempt and -loathing are often covert emotional processes that are not easily measurable without an individual's minimum affective involvement in some target task, as done in the present study. As example, a study on neural correlates, performed by Longe and colleagues (2010), tried to elicit self-criticism in individuals using cognitive tasks, but was unable to show effects either with regard to self-contempt, or with regard to a biological network generally associated with self-loathing and harsh self-criticism, i.e., the anterior insular-formation (Calder, Lawrence, & Young, 2001; Doerig et al., 2013). This null effect may be attributed to a lack of emotional engagement on behalf of the participants, as suggested by Doerig and colleagues (2013). The two-chair task used in the present study made it possible to study moderately aroused emotion in an optimal way and to disentangle

the emotional stimulus (i.e., the critical voice) from the experiential response (i.e., fear, shame, and in healthy controls, the emergence of an existential need). Therefore, a meaningful direction for future research would be to conduct a more systematic investigation, by using the same emotion-evoking task and process research methods, to study contempt and its relationship with various mental disorders.

The importance of knowing what you need

This study not only investigated the actual quality of self-criticism using observational process indices of contempt, but also individual's dynamic and moment-by-moment felt reactions to that self-criticism. Our methods did not show differences between groups in depressogenic and anger-related processes, as such. However, we showed that individuals with maladaptive anger were less likely to fully access and articulate an existential or interpersonal need, even when they were given prompts to do so. This means that the presence of maladaptive anger might impede on the individual's capacity in accessing the underlying need. The sentence completion task (Pascual-Leone, 2010) was designed to prime access to healthy assertive anger (which was successful per se with most individuals from both groups) and to articulate the idiosyncratic need that underlies that emotional process. These unmet existential needs could be for recognition, acceptance, affiliation, nurturance, support or autonomy, among others (Pascual-Leone, 2010), depending on the specific situation of failure that each individual was encouraged to work on during the quasi-experimental task. According to emotion-focused theory, an unmet need is what orients and drives primary adaptive emotional experience (Greenberg & Paivio, 1997).

Despite the priming intervention, which also aimed to explicitly orient all participants toward articulating their underlying needs, only a small number of individuals with maladaptive anger were able to clearly express their needs as compared to controls. One explanation for why people prone to anger seem to have difficulty symbolizing their needs is

that it may have to do with the inherently undifferentiated nature of problem anger. In a paper dedicated to the conceptualization of various anger problems, Pascual-Leone and colleagues (2013) argue that a key issue characterizing problematic or maladaptive anger is the degree to which it has poorly differentiated and relatively unspecified concerns. Despite sometimes high arousal, problematic anger all too often entails less specificity than more adaptive experiences, such as assertive anger. Hate, disgust, contempt as forms of rejecting anger, tend to be clear expressions of what one does *not* want, but as experiences they offer little direction about what goals or needs to pursue. Otherwise said, "if a client is unclear (in the moment) about what he or she is 'fighting for,' the presenting experience of anger is not likely to be primary and assertive anger" (Pascual-Leone et al., 2013; p. 89). Thus, one could speculate that being able to articulate one's unmet need is antithetical to unresolved or problematic anger. One might argue that people with problematic anger are less differentiated in their emotional experience at large, and particularly when they are angry (or actively self-hating), and this would explain the apparent difficulty they have in identifying and symbolizing core unmet existential needs in relation to a personal problem, as observed in the present study. These results are consistent with conclusions drawn by McMain, Goldman and Greenberg (1996) in the context of emotion-focused therapy for resolving long standing interpersonal difficulties, who reported that expressing an existential need was a better predictor of therapy outcome than narrative changes such as developing a new view of the other.

The emotional awareness that allows one to symbolize what one needs is understood as a core process in psychotherapy, in particular emotion-focused therapy. Without this process clients often fail to make progress in working with their difficulty. This may lead either to emotional collapse, retreat or angry outbursts (Pascual-Leone, 2009; Pascual-Leone & Paivio, 2013). The absence of access to an existential need may potentially have far-

reaching consequences in individuals with maladaptive anger. More research is needed to delineate these consequences, in particular by using longitudinal designs.

Clinical implications for practice

The specific emotional processes related to self-criticism in anger-prone individuals bear several clinical implications. Firstly, the present study underlines the centrality of emotional processing when working through self-criticism. It may not be sufficient to train self-critical people with maladaptive anger to challenge their dysfunctional thinking. In order for these individuals to benefit more generally from a therapeutic intervention, it must take into account the psychological, and mostly affective, determinants of self-criticism. Secondly, it may be useful to train people to develop their self-compassion and self-assertion, as proposed by Gilbert and Procter (2006), among others. Still, in addition to cultivating a generally self-compassionate attitude, it seems that identifying and promoting access to a specific existential need in the service of assertion among other primary adaptive emotions, will be particularly important for people with maladaptive anger. Our results suggest that some kind of process-focused, rather than content-focused, therapeutic intervention seems necessary in order to develop inner strength (i.e., identifying and affirming genuine needs) to effectively soften the harshness of punitive self-criticism (Kannan & Levitt, 2013). Such a process-focused therapy approach would pick up directly verbal and non-verbal aspects of contemptuousness in the process, as well as the lacking process-access to the underlying need. One example of how to do this would be taking into account – and delineating in their emotional implications – the different inner voices related to self-criticism (Greenberg, 2002; Stinckens, Lietaer & Leijssen, 2013).

When using such two-chair dialogues in resolving self-criticism in the context of problematic anger, the clinician should particularly pay attention to the experiential access of the underlying need, and not be satisfied with distant descriptions of the “need”, but help the

client to actively live the situation of a missing need “from within”, experientially. So the clinicians needs here some micro-skills in step-by-step guiding – and following – the client to this core aspect of the resolution of self-criticism (Greenberg, 2002).

Limitations and future research directions

While the present study represents a single session structured intervention to address a clinically relevant concern identified by participants, it was not conducted in a clinical context of help-seeking. In order to extend our conclusions to individuals with clinical problems, further study should be carried out on patient populations. Regarding this, a number of participants (40%) reported prior experience with being in psychotherapy which might have had an impact on the quality of processes observed in-session. One can speculate that participants with the same presenting difficulties, who had been even less familiar with the roles and nature of the therapeutic process, may have shown even less optimal processes. Similarly, 82% of the participants were female which limits the scope of generalizability of the findings to male participants; a future study might investigate the gender effect on the resolution process of self-criticism in the context of anger, aiming at disentangling what might be partially gender-specific in this process (Fernandez & Malley-Morrison, 2013).

There was no formal follow-up data in this study and testing for longer-term effects of the intervention components (i.e., self-critical dialogue, or sentence completion task for priming emotion) was not among the objectives of this study, although it would be useful in subsequent research.

Conclusions

Despite certain limitations, the present study confirmed the pivotal role of self-contempt in the experiential elaboration of self-criticism, in general and in particular in the context of maladaptive anger. In addition, it is feasible to investigate emotional processing in a controlled and valid fashion in a quasi-experimental design using individually-relevant

stimuli to activate emotion. To that end, we have also provided specific empirical support for the clinically relevant impact of a sentence completion task as a tool designed for priming assertive anger and focusing individuals on their unmet needs (Pascual-Leone, 2010). Finally, our main conclusion was that there is a specific emotional processing profile for anger-prone individuals when they are working through their self-criticism. People who reported having anger problems tended to express marked self-contempt and had specific difficulties in accessing or articulating their underlying personal needs, which had important implications for resolving self-criticism.

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Table 1

Characteristics of the Participants in Anger-Prone vs Control Conditions (N = 45)

Variables	Condition			
	ANGER (n = 23)	Control (n = 22)		
	N (%)	N (%)	χ^2	p-value
Gender: Female	17 (74)	20 (91)	2.22	.14
Ethnicity			5.79	.22
Caucasian	13 (57)	16 (73)		
Asian	5 (22)	3 (14)		
Other ethnic groups	5 (22)0 (0)	1 (5)2 (9)		
Marital status			3.38	.19
Single	16 (70)	11 (50)		
Partnered/Married	6 (26)	11 (50)		
Separated/Divorced	1 (4)	0 (0)		
Employment	11(48)	16 (72)	2.91	.09
Past Psychotherapy	12 (52)	6 (27)	2.91	.09
Past Medication	7 (30)	2 (9)	3.20	.08
	M (SD)	M (SD)	t (1, 43)	p-value
Age	21.30 (3.23)	21.63 (3.35)	0.34	.74
BDI	16.35 (7.76)	13.05 (9.54)	-1.28	.21
ARS	39.74 (7.10)	34.64 (8.72)	-2.16	.03

Note. BDI: Beck Depression Inventory - II. ARS: Anger Rumination Scale. ANGER: anger-prone individuals

Table 2

Manipulation checks per group and over time

	Groups		Group - effect ANOVAs		Time - effect	
	ANGER (*n* = 23)	Control (*n* = 22)	*F*	ES	*t*	ES
Assessment 1: Baseline						
VAS - dysphoria	29.75 (23.84)	22.75 (3.45)	1.32	0.41		
VAS - hostility	17.23 (15.66)	17.36 (15.77)	.00	0.01		
VAS - anxiety	33.17 (18.68)	32.27 (21.19)	.02	0.05		
VAS - positive	51.83 (14.41)	56.23 (13.78)	1.10	0.31		
SSES	2.98 (0.64)	2.77 (0.63)	1.22	0.33		
SAM - arousal	4.52 (1.47)	4.68 (1.42)	0.14	0.11		
SAM - dominance	4.57 (1.85)	5.68 (1.46)	5.01*	0.66		
Assessment 2						
VAS - dysphoria	48.52 (23.08)	45.34 (19.79)	0.25	0.15	-8.42**	0.99
VAS - hostility	40.50 (19.97)	33.61 (22.40)	1.19	0.33	-6.61**	1.07
VAS - anxiety	47.57 (18.21)	46.64 (21.65)	0.02	0.05	-5.05**	0.73
VAS - positive	33.75 (15.73)	36.95 (16.84)	0.43	0.20	9.36**	1.23
SSES	3.47 (0.86)	3.12 (0.75)	2.10	0.43	-6.43**	0.57
SAM - arousal	4.52 (1.53)	4.45 (2.04)	0.02	0.04	0.37	0.07
SAM - dominance	3.70 (1.79)	4.50 (1.82)	2.23	0.44	6.03**	0.57
Vividness	3.73 (0.87)	3.95 (0.71)	0.82	0.28	n/a	

cont'd Table 2

Assessment 3						
VAS - dysphoria	51.80 (22.88)	47.81 (23.70)	0.33	0.17	-8.21**	1.08
VAS - hostility	42.37 (20.87)	38.57 (22.89)	0.34	0.17	-7.24**	1.23
VAS - anxiety	57.49 (24.51)	49.00 (19.82)	1.44	0.38	-6.16**	0.99
VAS - positive	33.37 (18.29)	33.47 (17.52)	0.34	0.00	9.27**	1.38
SSES	3.37 (0.86)	3.27 (0.72)	0.18	0.13	-5.87**	0.62
SAM - arousal	5.48 (2.29)	5.00 (2.12)	0.53	0.22	-1.62	0.34
SAM - dominance	3.83 (2.19)	4.32 (2.03)	0.61	0.23	4.56**	0.54
Assessment 4						
VAS - dysphoria	31.70 (14.93)	28.89 (20.92)	0.27	0.16	-1.54	0.21
VAS - hostility	26.41 (17.46)	21.42 (15.71)	1.01	0.30	-2.71**	0.42
VAS - anxiety	36.33 (19.43)	29.67 (20.41)	1.26	0.33	-.10	0.02
VAS - positive	47.24 (16.00)	54.03 (14.00)	2.29	0.45	1.30	0.23
SSES	2.72 (0.65)	2.64 (0.74)	0.14	0.12	2.76**	0.30
SAM - arousal	4.70 (2.20)	4.86 (1.81)	0.08	0.08	-.53	0.34
SAM - dominance	5.39 (2.02)	6.09 (1.85)	1.47	0.36	-3.01**	0.33
Relevance	4.12 (0.74)	4.35 (0.54)	1.35	0.36	n/a	

Note. ANGER: Anger-prone individuals; VAS: Visual Analogue Scale; SSES: State Self-Esteem Scale; SAM: Self-Assessment Manikin. Time effects (for assessment at times 2, 3, 4) in comparison with Baseline assessment at time 1). Other explanations in the text; ** $p < .01$; * $p < .05$.

Table 3

Emotional Processing for each group and step of the experiment (N = 45)

Variables	Group			
	ANGER (n = 23)	Control (n = 22)		
	M (SD)	M (SD)	t (1, 44)	d
Self-Criticism (step 2)				
Contemptuousness	1.09 (0.73)	0.64 (0.85)	3.65*	0.57
	N (%)	N (%)	χ^2	p-value
Initial Reaction (step 3)				
Global Distress	18 (78)	21 (95)	2.88	.09
Fear/Shame	14 (61)	14 (64)	0.04	.85
Rejecting Anger	3 (13)	1 (5)	1.00	.32
Assertive Anger	2 (9)	2 (9)	0.00	.96
Existential Need	0 (0)	0 (0)	n/a	
Reaction post-priming (step 5)				
Global Distress	3 (13)	1 (5)	1.00	.32
Fear/Shame	2 (9)	1 (5)	0.31	.52
Rejecting Anger	1 (4)	2 (9)	0.41	.48
Assertive Anger	20 (87)	18 (68)	0.23	.47
Existential Need	10 (43)	17 (77)	5.35	.02*

Note. For the reaction following priming, all χ^2 analyses took into account the initial frequency of the corresponding affective meaning state at the level of the initial reaction as expected frequency; * $p < .05$. Differences between step 3 and step 5 significant at the p = .05 significance level for Global Distress, Fear/Shame and Assertive Anger (McNemar).

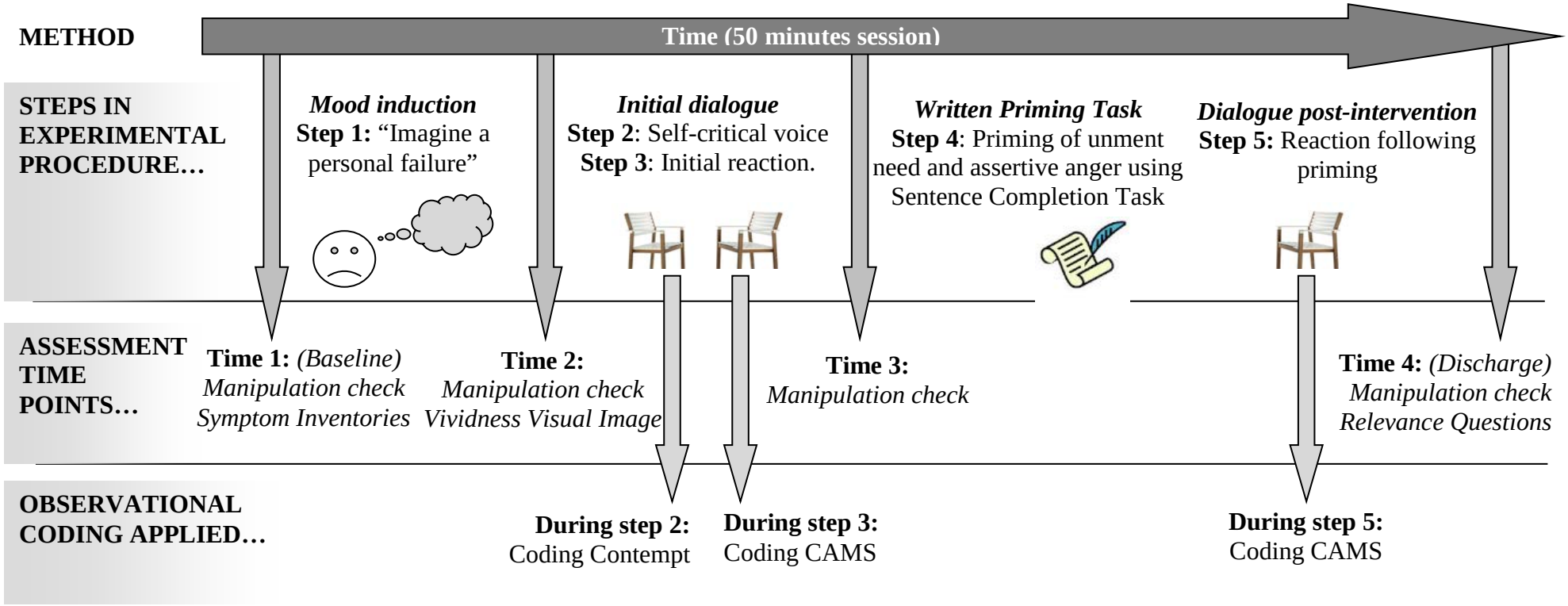
Table 4

Predictors of Maladaptive Anger-Rumination using Hierarchical Regression (N = 45)

Model	R^2	B	SE	β	*t*	*p*
Predicting ARS	.15					
Total Fear/Shame		1.80	2.01	.13	.90	.37
Contemptuousness		3.52	1.51	.34	2.33	.03*
Predicting ARS	.13					
Contemptuousness		3.76	1.48	.36	2.54	.01*

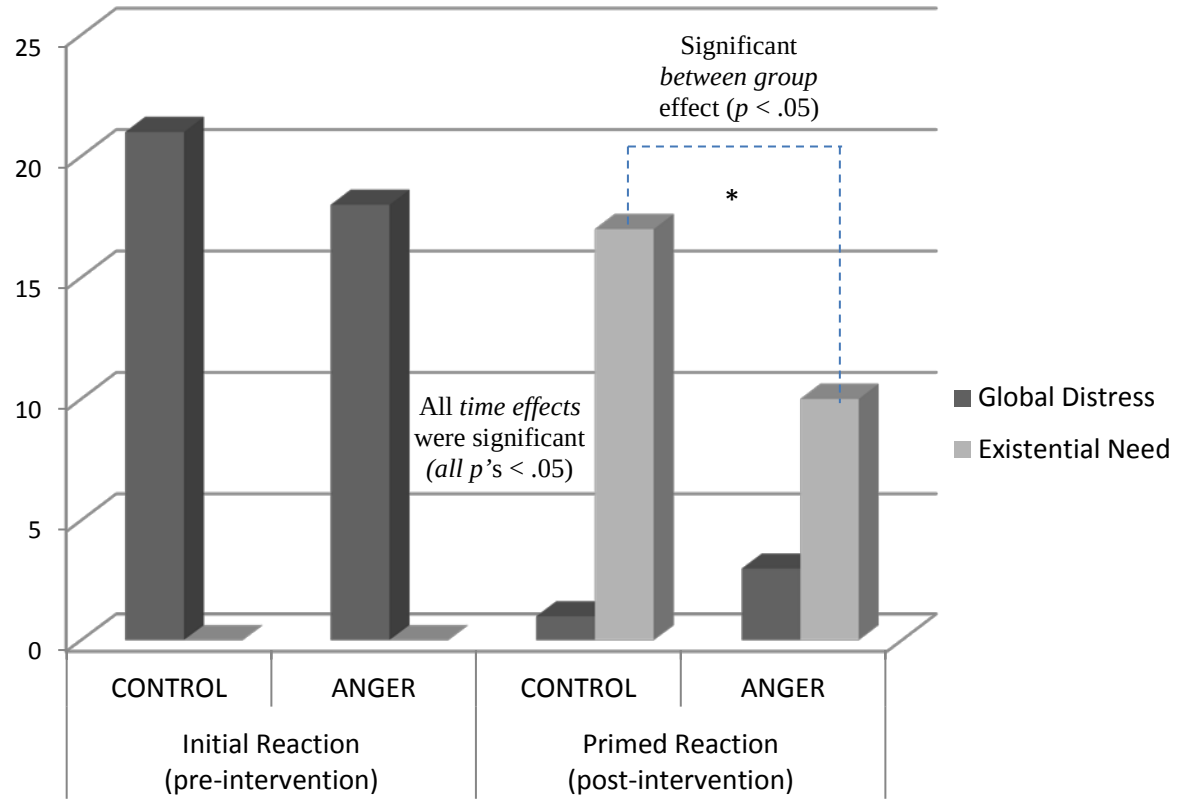
Note: ARS: Anger Rumination Scale; * $p < .05$

Figure 1. Overall Procedures and Assessment schedule of the experiment



Note. "Manipulation checks" given at baseline (1), assessment points 2 and 3 and Discharge (4): at all time points: Visual Analogue Scale; State Self-Esteem Scale; Self-Assessment Manikin. "Symptom Inventories" given only at assessment point 1: Beck Depression Inventory and Anger-Rumination Scale. CAMS: Classification of Affective Meaning States (only 5 categories: global distress, fear/shame, rejecting anger, assertive anger and need).

Figure 2. The experience of distress and the articulation of an existential need



Note. Both variables (frequency of Global Distress and Existential Need, for both groups) were significantly different across time between the Initial Reaction (time 1) and the Reaction after Priming (time 2), all *p*'s < .05; A significant between group effect was found for the expression of existential needs, * = *p* < .05