

EFFECTS OF REPEATED ACCOUNT-MAKING OF SEXUAL ASSAULT EXPERIENCES: AN INTERDISCIPLINARY FEMINIST METHODOLOGY

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Abstract: Recent research indicates that survivors of sexual assault and sexual abuse benefit from making repeated accounts of their sexual assault experiences and from exposure to their own accounts. To evaluate the effects of a procedure combining repeated account-making and an exposure treatment, testing for this study involved (1) gathering baseline measures and information about the trauma followed by audiotaping the pre-treatment narrative and (2) audiotaping the post-treatment narrative after participants listened three times to the taped account (treatment exposure). Participants' narratives and responses are assessed in pre-, post-, and follow-up testing for acoustic, linguistic, and psychological evidence of levels of trauma symptomatology.

Keywords: sexual assault, sexual abuse, emotional trauma, account-making, self-disclosure, emotion expression, exposure treatment, interdisciplinary, feminist

INTRODUCTION

Recent psychological research indicates that making repeated written or spoken accounts of stressful and traumatic experiences leads to improved health (e.g., Pennebaker, 1997), and that survivors of sexual assault benefit from making repeated accounts of their sexual assault experience and from being exposed to their own recorded accounts (Foa, *et al.* 1991, 1995). Acoustic phoneticians and other speech researchers have examined the vocal expression of emotion by measuring the production (e.g., Lieberman, 1961; Scherer, 1986) and perception (e.g., Protopapas and Lieberman, 1995) of such acoustic parameters as fundamental frequency and its various aspects. Linguists have continued to study affect in narrative, conversation, and therapeutic discourse since the seminal work of Labov and his colleagues

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(e.g., Labov, 1972; Labov and Fanshel, 1977; Labov and Waletzky, 1967). More recently, researchers have applied linguistic approaches to analyzing accounts of sexual assault (e.g., Tannen, 1993; Wood and Rennie, 1994).

The present research draws upon the insights and methodologies of the disciplines mentioned above. Focusing here on the psychological and acoustic issues, we detail an interdisciplinary feminist approach for conducting research on sexual assault/abuse trauma and present preliminary results from an ongoing study of the effects of repeated account-making and an exposure treatment on coping with such trauma. Through this research, we hope to further evaluate these two methods for working with the trauma of sexual assault/abuse and to provide an accesible way for survivors of sexual assault to better cope with their traumatic experiences.

Psychology Background

The psychological literature indicates that survivors of sexual assault are the largest group of sufferers of PTSD (posttraumatic stress disorder). PTSD is identified by a set of three characteristic symptoms: intrusive memories/reexperiencing, hyperarousal, and avoidance/numbing (American Psychiatric Association, 1994). Corcoran's work in rape crisis advocacy brings her into contact with survivors of sexual assault who show evidence of PTSD symptoms and often report a compelling need to talk about what happened to them. Unfortunately, one of the most difficult aspects of recovery for clients assessing the support system is their isolation and lack of a confidante.

Harvey, *et al.* (1991) define account-making as "story-like constructions involving explanations, reported memories, description, and emotional expression." Why would account-making or repeated account-making be expected to facilitate recovery from sexual assault and reduce trauma symptoms? Several lines of psychological research converge here. Janoff-Bulman (1992) discusses the benefits of disclosure for the trauma sufferer. Beginning with the disruption of the sufferer's assumptive world in which the individual understood the world to be benevolent and meaningful, and the self worthy, Janoff-Bulman claims that the task for the recovering survivor is to develop a viable assumptive world out of these shattered assumptions combined with the disruptive data from the assault. The survivor's reexperiencing of the trauma, even through unpleasant intrusive thoughts and images, is primarily in service of this crucial cognitive reconstruction process (Janoff-Bulman, 1992).

Janoff-Bulman suggests that in the process of integrating trauma, repetitive re-experiencing of the event changes from intrusive visual imagery to a persistent need to discuss the trauma. She considers the need to talk to be a manifestation of the mind's motivation to confront, reconsider, and integrate the experience. Symptoms of intrusion and avoidance cease only when old schemas are updated to account for the traumatic experience. Thus, translating the experience into language can be a vehicle for the sexual assault survivor to take greater control over the trauma through a process of accommodation and assimilation. That is, at some point words rather than images provide the mental medium for processing powerful data.

The work of Harvey, *et al.* (1990, 1991) and Pennebaker and Beall (1986) provides further theoretical foundation for research on the value of account-making for those who have experienced trauma or other stressors. Through cognitive reappraisal and creating a narrative, the storyteller transforms her state with regard to the trauma from one of passivity to activity, imposing order and form on the unpredictable and uncontrollable experience, developing a sense of meaning and control. As Harvey and colleagues note, the value of account-making activity is in expressing emotions about the assault; in cognitively clarifying aspects of the assault; in resolving the resultant anger, fear, and paralysis of action; and in constructively moving on in one's life.

Focusing on the physiological and cognitive benefits of disclosure, research by Pennebaker and his colleagues (1986, 1989, 1990) suggests that disclosure may reduce the work of active inhibition, which is associated with short-term autonomic activity and long-term stress-

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related disease. Pennebaker and Beall (1986) found that the process of reframing and assimilating the stressful experience resulted in benefits to the immune system and fewer visits to health care providers. Participants who wrote on four consecutive days about stressful events were found to initially experience heightened arousal and negative affect after the written disclosure exercises, but at follow-up these participants were found to experience long-term health benefits. Those participants writing without emotion about a trivial experience did not show comparable health benefits at follow-up. We note Pennebaker's recent observation that, while inhibition does appear to be a factor in long-term health problems, the role of disclosure in reducing inhibition and thereby producing health benefits remains unproven (1997).

Examining the effects of repeated account-making in survivors of sexual assault and sexual abuse, Van Puymbroeck, *et al.* (1996) found that writing about the traumatic event over a four-day period resulted in decreased defensive avoidance in survivors of sexual assault and sexual abuse compared with controls. Symptoms of tension reduction behavior, depression, dissociation, intrusive experiences, and impaired self-reference decreased significantly for both the experimental and control groups. The researchers discuss possible factors that might contribute to this result, e.g., both groups received the same level of social support and both were selective in that participants were ready at the time of the study to make accounts of their experiences.

To understand how writing or talking can facilitate coping, we turn to the work of Foa and her colleagues who developed a model of rape aftereffects. The central feature of the research model described in Foa and Kozak (1986) is that of the fear structure, which is created through learning at the time of victimization. The fear structure is a network in long-term memory that contains three kinds of information: (1) information about the characteristics of the feared situation; (2) programs for verbal, physiological, and overt behavioral responses that occur when the fear structure is activated; and (3) cognitions about the meaning of the elements in the fear structure. The researchers posit that rape-induced fear structures, compared with structures induced by other fears or traumas, are larger and have a wider range of stimuli capable of activating the structure, resulting in more intense verbal and physiological responses when activated. That is, there is a lower threshold for activation than for other fears. As well, the greater accessibility of this fear structure results in frequent replays of sensations associated with victimization, such as intrusion and arousal. The uncomfortable symptoms trigger attempts to avoid these stimuli. Thus, in attempting to limit discomforting stimuli to manageable levels, the trauma sufferer may try to avoid her own symptoms, possibly producing the emotional numbing and withdrawal characteristic of PTSD.

According to this reasoning, emotional processing therefore entails changes in the memory network among the elements in the fear structure so that (1) the stimuli are no longer linked with strong emotional responses, and (2) the meanings previously ascribed to the stimulus-response have been reformulated.

How can the sexual assault-/sexual abuse-induced fear structures be broken down? First, the fear memory must be activated through exposure. New information must be provided to introduce elements that are incompatible with some elements already existing in the fear structure; in this way, a new memory can be formed. This new cognitive and affective information has to be integrated for the desired emotional change to occur. Thus, a systematic exposure to the traumatic memory in a safe environment serves to alter the fear structure such that fear cues are reevaluated and habituated.

In the current study, we pose the following questions: (1) Can repeated oral account-making using a tape recorder accomplish the goal of reducing trauma symptomatology? (2) Will exposure to one's own account accomplish this same goal?

Two recent studies reporting on therapeutic effectiveness suggest that the answer is yes. Foa, *et al.* (1991) compared groups of clients in four treatment conditions: those given prolonged

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exposure (PE), stress innoculation training (SIT), supportive counseling (SC), and wait-list control (WL). In the PE, participants were asked to repeatedly recount their assault experience imaginally without relaxation, relive it by imagining as vividly as possible, describe it aloud into a tape recorder using the present tense, and then listen to their tape once a day as homework. They were also expected to confront feared situations *in vivo*. There was no overlap of procedures among the four conditions. The nine treatment sessions occurred twice weekly over four and a half weeks. Carrying out pre-, post-, and follow-up with these rape survivors, the researchers found that all conditions improved. The SIT group, which learned anxiety management strategies, showed more improvement on PTSD symptoms at post-treatment. At follow-up, the PE group showed a superior outcome on PTSD. To account for the reversal between PE and SIT, the researchers offer two possible explanations: first, that some SIT participants might not continue to practice stress innoculation behaviors after treatment, and second, that the PE produces temporarily high levels of arousal that with repeated confrontation lead to a permanent change in the rape memory structure. That the PE group experienced an initial increase in arousal and negative affect, but subsequent long-term health benefits is similar to the findings of Pennebaker and colleagues (1986, 1990).

The second line of work is the cognitive processing therapy (CPT) developed by Resick and Schnicke (1992) to treat PTSD in rape survivors. Here, the exposure treatment consists of twelve weekly sessions. Participants write an account of the rape including sensory details, their emotions and thoughts, read their accounts silently, and later discuss them. The cognitive aspect is that the work is done in a group, allowing for greater exposure to alternative points of view, social comparison, and confrontation of psychological obstacles. Identifying and challenging maladaptive beliefs is central to CPT. The treatment group experienced improvements in PTSD and depressive symptomatology, as well as self-reported social functioning, and was superior to the wait-list control group, which did not improve.

To summarize, it appears that fairly short-term writing and talking interventions can facilitate coping with sexual trauma. An understanding of the precise mechanisms linking language and disclosure with psychological and physical health will require further research. To disentangle the roles of self-disclosure, self-understanding, and social comparison -- that is, the cognitive component of this treatment -- and the effects of social support, will again require more research. Other questions revolve around the level of arousal, the exposure treatment, and the emotional component in such programs: What are the optimal conditions for the exposure treatment? As arousal and negative affect are expected to intensify immediately following exposure, can the exposure treatment prove harmful to some participants, for example, by triggering a relapse of chemical dependency or suicidal impulses? Can we pinpoint which aspect or aspects of writing, talking, or storytelling are beneficial, such as the linking of affective and cognitive elements or the reduction in behavioral inhibition? Is there a point, or at what point, in the recovery process would such an intervention be most beneficial?

Acoustics Background

To provide a further source of measurement of participants' psychological stress levels during first and second instances of account-making, excerpted portions of their taped speech will be analyzed acoustically and submitted to perceptual tests.

Among the acoustic attributes reported to convey affect and emotional stress in speech are the following: fundamental frequency of phonation (F0) and its mean, range, variability, glottal source characteristics, and contour; changes in formant frequencies, rate of speech, vowel length, and length of intervals of constriction for consonants; amplitude, erratic voicing, segmentation of speech, breathing patterns, and mean length of utterance (see Scherer (1986) and Murray and Arnott (1993) for excellent reviews of the literature on the vocal expression of affect).

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Speech production measurements often involve analyses of synthetic speech, natural speech in which speakers simulate emotion, and natural speech recorded during situations of duress. For example, examining speech of actors and of the radio announcer of the Hindenburg disaster, Williams and Stevens (1972) noted that the pitch contour over time seems the best index of affect in a spoken utterance. By measuring the average F0 and range of F0 for several seconds of speech, they could categorize the speaker's emotional state for such emotions as sorrow and anger/fear.

Jitter, the perturbations in F0 from period to period, is present in all human speech (Lieberman, 1961). Hecker, *et al.* (1968) found that F0 change was one indication of stress for subjects completing a task involving adding numbers under varying time constraints, but for some F0 rose and for others it fell. While higher levels of jitter characterize increased stress in some individuals, Kagan, *et al.* (1988) reported that higher levels of stress in inhibited children, compared with uninhibited children, resulted in significantly lower jitter measurements.

Analyzing tape-recorded phone conversations of a Con Edison system operator and his supervisor, the chief system operator, preceding the total blackout of Manhattan and Westchester County in 1977, Streeter, *et al.* (1983) found that increasing stress by itself does not produce a particular acoustic pattern, and that no one individual cue on its own can reliably signal emotional stress.

Greater stability has been found in the perception of emotional stress in human speech. Streeter, *et al.* (1983) reported more regular results in their perceptual tests than in acoustic analyses, although listeners relied upon different sets of acoustic cues for the two speakers. The researchers proposed that listeners might rely primarily upon acoustic parameters that show the greatest variability in a particular individual's voice. Furthermore, they suggested that listeners employ a stereotype that equates higher F0 and amplitude, as well as higher variability of F0 and amplitude, with psychological stress. These findings are comparable with those of Lieberman and Michaels (1962), who, using natural and smoothed F0 tracks generated by a fixed-vowel synthesizer, found that amplitude and F0, as well as fine temporal structure (e.g., jitter) enabled listeners to identify different emotional modes in speech. The latter study also noted variation in the way that different emotional modes were correlated with various acoustic features.

Protopapas and Lieberman (1995) conducted a perceptual study manipulating natural speech from two conditions: routine communications of a male helicopter pilot with his control tower and communications from the same man as his helicopter was crashing.

Varying the F0 tracks of fixed-vowels, the researchers measured short-term changes in F0 (e.g., jitter) as well as F0 characteristics such as peak values, intonational patterns, and range. In contrast to the findings of Lieberman and Michaels (1962), Protopapas and Lieberman (1995) found that jitter did not convey emotional stress to the listeners in their experiment. They offer these possible explanations: jitter might not be a consistent correlate of extreme stress but could indicate differences in stress level in conditions less intense than terror, or perhaps the jitter information in the pilot's last communications was masked by the extreme F0 excursions in his speech. The investigators suggest that the considerable individual differences involved with affect in speech, and specifically with jitter, may make that parameter an inadequate indicator for stress level unless the speaker's "normal" voice is known well enough to be distinguishable from that same person's voice encoding emotional stress. The researchers found that neither measure of variability -- jitter or range of F0 -- was an effective parameter for conveying emotional stress.

Employing low-pass filtering, random splicing, or reversed speech, Scherer, *et al.* (1984) observed that voice quality and F0 level can convey affective information independently of verbal context. Protopapas and Lieberman (1995) confirmed the finding of Scherer, *et al.* (1984) that F0 cues affect regardless of the verbal context, extending the claim to include the absence of any verbal content. Mean and maximum F0 showed strong correlations with

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perception of stress, maximum F0 being the most successful indicator of emotional stress in the male voices analyzed by Protopapas and Lieberman (1995). The researchers point out that maximum F0 by itself does not indicate vocal stress, confirming the importance of source spectrum and articulatory characteristics as discussed in Scherer (1986). Thus, at present, it is fair to claim that the complexity and variability of acoustic parameters for emotional stress in speech preclude relying on any one acoustic parameter to assess affect or emotional stress for all speakers.

METHODS AND PROCEDURES

In view of the body of work described above, and specifically the studies of Pennebaker and his colleagues showing that disclosure of a stressful event leads to improved long-term health following initial increases in duress, and the findings of Foa and her colleagues that account-making combined with an exposure treatment for sexual assault survivors produces initial heightening of some trauma symptoms with long-term reductions in trauma symptomatology, we predict that anxious arousal and intrusive experiences will increase at post-treatment and decrease at follow-up for participants in the exposure condition in this study.

Participants

Participants were recruited in several ways: flyers posted on the college campus and at community social service organizations centering on women, announcements in the college and local city newspaper, and a mailing to a local women's political organization. Announcements began with the statement, "If you have ever had sexual contact against your will, you may be eligible to participate in an empirical study on sexual assault and sexual abuse." A faculty researcher also recruited at the second meeting of a newly-formed support group for adult survivors of child sexual abuse. Participants, ranging in age from 18-53, were paid $15 upon their completion of the tasks, and sent a letter of thanks accompanied by a blank journal. Data have been analyzed for ten participants, one Filipino-American and nine Euro-American women.

All members of the research team were trained as sexual assault advocates at a rape crisis center. A team member following a routine procedure contacted each woman who expressed interest in the study to briefly discuss the goals of the study and the caller's assault history, ascertain her interest in the project, and generally describe what participation would entail. This contact enabled the researcher to determine whether callers met the legal definitions for sexual assault and sexual abuse and whether participation in this study would be appropriate for them. If respondents appeared to need more extensive support than we would offer in the course of the study or if they were already in a state of crisis, we assumed the role of advocate and recommended they contact the local rape crisis center rather than participating in the study at this point. Those callers who met the criteria of the study were scheduled for an initial interview session and assigned to one of three experimental conditions: the Narrative-Exposure treatment (NE) or one of two control groups: Narrative-Only (NO) and Questionnaire-Only (QO).

Studies by Clark and Taraban (1991) and others have demonstrated that people express emotion less readily in exchange relationships (unfamiliar acquaintances) than in communal relationships (familiar acquaintances). Alcoff and Gray (1993) point out that when victims of sexual assault decide to tell their stories, the societal response may cause them tensions we need to be aware of. As feminists acknowledging the range of cultural and political factors that confront survivors of sexual assault and abuse, our attempt was to develop procedures to reduce potentially alienating aspects of participating in the study and to offer certain types of support, discussed below, to all participants in the study.

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Procedure

Interviews were recorded using a SONY TCD-D8 DAT recorder and a SONY ECM-909 microphone, as well as an ONKYO Stereo Cassette Tape Recorder Deck RI. The second set of tapes provided one analog cassette tape for the participant to listen to during the exposure treatment and another for a transcriber's use. DAT tapes were supplemented with Maxell Communicator Series 120-minute analog cassette tapes.

Testing involved two laboratory sessions and a follow-up measure to accomplish the following: (1) gathering baseline measures and information about the trauma followed by audiotaping the pre-treatment narrative; (2) audiotaping the post-treatment narrative after participants listened three times to the taped account (treatment exposure); (3) participants' self-administering a follow-up questionnaire two weeks following the second session.

Participants were greeted initially by one team member and then seated at a table across from the interviewer in a college laboratory. Each participant was told that observers were in an adjacent room but she could not see them due to a one-way mirrored window. At the beginning of each laboratory session, the interviewer asked the participant to complete a set of psychological inventories in the following order: a demographic history questionnaire, the Stressful Life Events Screening Questionnaire (Goodman, *et al.*, in press), Davidson's PTSD scale (Zlotnick, *et al.*, 1996), and the Trauma Symptom Inventory (Briere, *et al.*, 1995). The TSI was used to evaluate PTSD symptomatology on ten clinical scales at pre- and post-treatment and at the two-week follow-up. Participants in the QO condition completed these inventories and did not participate in account-making sessions.

To gather speech samples for later analysis, participants were asked to read aloud twice into a microphone a series of three sentences constructed to provide a range of vowels and consonant-vowel combinations in sentence-length contexts. With this initial verbal practice completed, each participant was then asked to read and repeat the Peterson and Barney hid-hud-who'd combinations (Peterson and Barney, 1952) two times.

At this point, the interviewer asked the participant to recall memories of sexual assault or abuse as vividly as possible, including any actions that took place, and thoughts or feelings she had during or after the experience. When necessary, the interviewer used back-channeling and a set of minimal probes to encourage a participant to continue to develop her account. At the completion of the first interview session, participants in the NE condition were lent the cassette recording of their account and a tape recorder, if needed, to undertake the exposure treatment of listening to their narrative three times in the subsequent week. Participants who continued the study returned one week after the initial session for the second session. Acknowledging the unusualness of the task, the interviewer asked each participant in the NE and NO groups to tell the account of her experience again, as if the participant had not previously told her story to the researcher, and to relate any new thoughts or ideas she wanted to include.

Following each session, a team member joined the participant and interviewer for debriefing to assess and support the well-being of the participant; to express our thanks for her participating in the study, to assure her again and emphasize the importance of confidentiality, and to give her resource materials related to sexual assault and abuse. As the participant's well-being was most important to us, we explicitly expressed this to each participant and suggested that she was welcome to discontinue participation in the study if she wished to. An observer in the control room documented the debriefing.

As our research draws upon studies showing that writing and talking about difficult or traumatic circumstances can be beneficial for psychological and physiological health, we instituted a five-minute, private freewriting exercise for the research team, undertaken following the departure of each participant. Freewriting was followed with generally brief, open-ended discussion and summary of upcoming research responsibilities.

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Preliminary Results and Discussion

Participants' responses to the three psychological surveys were assessed in pre-, post-, and follow-up testing for psychological evidence of levels of trauma symptomatology. Preliminary results of the Trauma Symptom Inventory indicate that trauma symptomatology decreased significantly on all but one of the ten subscales following the exposure treatment; anxious arousal, anger/irritability, defensive avoidance, depression, dissociation, dysfunctional sexual behavior, intrusive experiences, impaired self-reference, and sexual concerns all decreased significantly, while tension reduction behavior did not decrease. A one-way repeated measures analysis of variance indicated that anxious arousal and intrusive experiences decreased both at post-treatment and at two-week follow-up, counter to our prediction that these subscales would initially increase before decreasing.

Norms for the TSI showed that participants' means preceding the exposure treatment were comparable to those of the population of women with a history of sexual victimization. At post-treatment, the means were similar to those of women who had no history of sexual victimization.

Thus, there is preliminary evidence that these procedures are helpful in reducing trauma symptomatology for the participants in the study. We view these preliminary results as highly tentative as data collection is still underway. Psychological assessments have been completed for ten women who have completed all stages of the study, and we are continuing to develop adequate representation of all three participant groups. Future stages of the research include completion of the psychological measures, linguistic and acoustic analyses, and perceptual tests of speech excerpted from our participants' first and second accounts.

We want to end by focusing on the writing and speaking process as a creative process, one in which the survivor takes on the innovative and transformative work of integrating her trauma into her basic schemas. To quote Ronnie Janoff-Bulman (1992, p. 114):

What is involved here is no less than a creative process, though a particularly difficult and painful one. The ability to transform the experience, to reinterpret the powerful data, is ultimately related to survivors' success in resolving their intense crisis.

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