

## Exploring the Potential of Pennebaker's Writing Paradigm on Betrayal Trauma Sequelae

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### Introduction

#### Pennebaker's Writing Paradigm

- Experimental design in which participants are instructed either to write about emotional events or neutral topics
- Those assigned to emotional writing condition typically display physical and psychological health improvements as compared to those in neutral condition (Pennebaker, 1997; Smyth, 1998)
- Narrative coherence and presence of emotion words may be important for positive outcomes (e.g., Pennebaker, 1993; Pennebaker, 1997)

#### Betrayal Trauma Theory (Freyd, 1996, 2001)

- Distinguishes traumas on the basis of two event dimensions which may elicit different reactions: life-threat (e.g. major car accident; violent rape by a stranger) and social betrayal (e.g., abuse by a close other)
- Trauma high in betrayal is perpetrated by someone who is close to the victim and/or upon whom the victim is dependent
- Associated with impaired memory for trauma, presumably for purpose of preserving victim-perpetrator relationship, and various negative sequelae, including dissociation, depression, anxiety and physical ailments (e.g., Freyd, Klest, & Allard, 2004)

## Rationale

- Up until now, Pennebaker's writing paradigm mostly applied to emotional but not necessarily traumatic events
- Those few studies studying writing about traumatic experiences have only involved one-time non-complex traumas low in betrayal
- Primary objective: to test generalizability of emotional writing to betrayal trauma
- Secondary goal: to investigate mechanism behind writing phenomenon by elucidating essay

## Method

### Participants

- 65 (51 female, 14 male) physically symptomatic undergraduates recruited from psychology
- department Human Subjects Pool, and compensated with choice of partial course credit or \$7
- Demographics (representative of UO undergraduate population):
  - M age = 19.94 years (SD = 3.86) and mostly (94.4%) single
  - 67 (93.1%) Caucasian; 2 (2.8%) each Asian, African American, Hispanic, Pacific Islander; and 1 (1.4%) American Indian

### Assessments

- Trauma assessed at pretest using Brief Betrayal Trauma Survey (Goldberg & Freyd, under review)
- Psychological health assessed at pre and posttest with time-bound\* version of Trauma Symptom Checklist 40 (TSC; Elliott & Briere, 1992)
- Physical illness symptoms assessed at pre and posttest with time-bound\* version of Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker 1982)

\*"time-bound" indicates participants were instructed to report how frequently they had experienced those symptoms during the past 2 weeks

## Procedures

- Random assignment to intervention of 2 x 20-minute writing assignments one week apart
  - Group 1: most distressing interpersonal childhood experience (n = 33)
  - Group 2: how you spent your time yesterday (n = 32)
- Completed posttest one month following second writing session

## Content Analysis of Essays

- Counted number of emotion and coherence related words using Pennebaker's Linguistic Inquiry and Word Count computer program (Pennebaker, Francis & Booth, 2001) – see Table 1 for examples of words counted
- Word counts used as predictor variables in regression analyses predicting physical and psychological symptom scores at posttest

Table 1. Examples of words in LIWC dimensions.

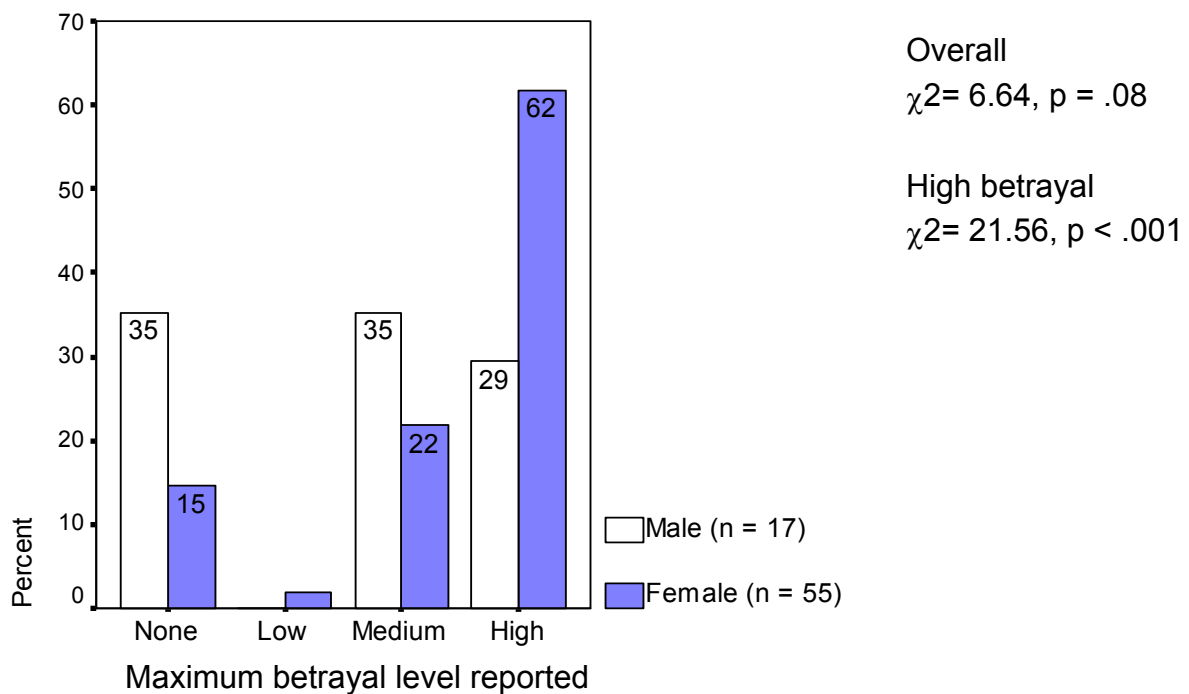
<b>Word Dimension</b>	<b>Examples</b>
<b>Affective or Emotional Processes</b>	happy, ugly, bitter
Positive Emotions	happy, pretty, good
Positive feelings	happy, joy, love
Optimism and energy	certainty, pride, win
Negative Emotions	hate, worthless, enemy
Anxiety or fear	nervous, afraid, tense
Anger	hate, kill, pissed
Sadness or depression	grief, cry, sad
<b>Cognitive Processes</b>	cause, know, ought
Causation	because, effect, hence
Insight	think, know, consider

## Summary of Results

### Descriptives

- Over 50% of all participants reported having experienced at least one betrayal trauma
- Women reported more betrayal trauma than men (see Figure 1)
- Significant correlations between physical and health symptoms and betrayal trauma

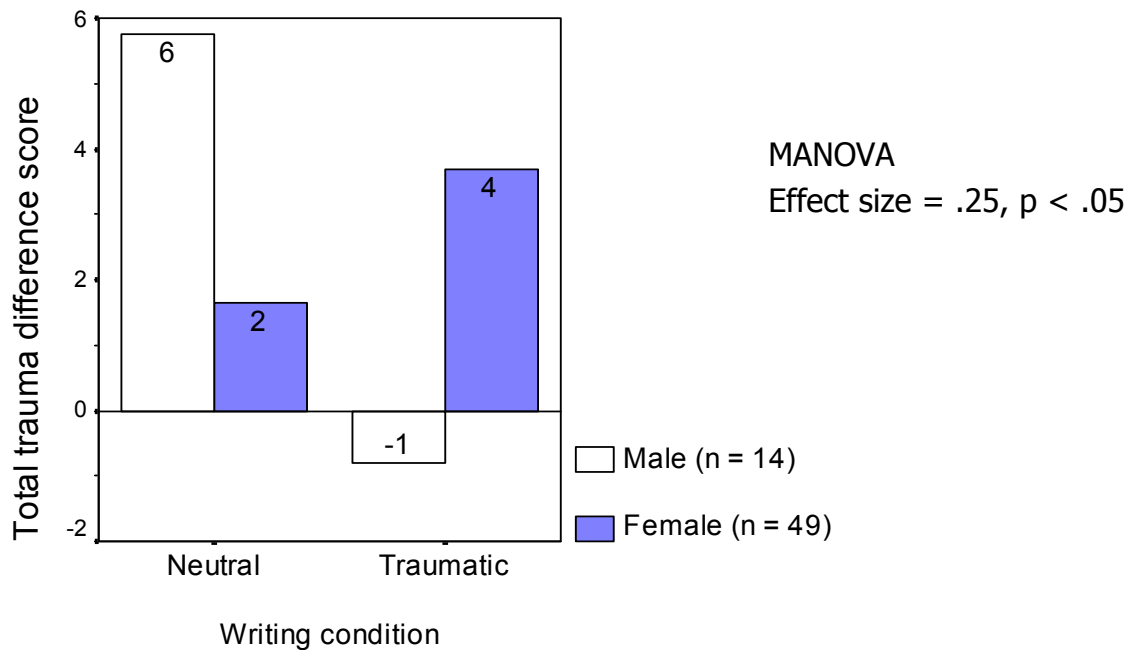
Figure 1. Percentage of male and female participants experiencing traumas in each level of betrayal.



### Intervention Results

- No significant overall main writing or gender effect on symptomatology outcome
- A significant gender by writing condition interaction emerged, which revealed that women in trauma writing condition benefited more than men in terms of psychological health as measured by linear combination of overall TSC measure and its subscales (see Figure 2)

Figure 2. Mean difference scores in total TSC symptoms from pre to posttest by writing condition and gender.



Note: positive difference scores indicate improvements, while negative scores indicate a worsening of symptomatology.

## Content Analysis Results

Generally, greater number of emotion words used in essays significantly predicted decreases in physical and psychological symptoms at posttest for women (see Table 2):

- More total emotion words used predicted decreased sleeping difficulties
- More total emotion words also predicted decreased physical symptoms, particularly positive emotions in form of optimism and energy, and negative emotions in form of anxiety or fear
- More anxiety or fear words predicted decreased overall psychological symptoms (TSC Total) and specifically dissociation
- However, more anxiety or fear words predicted increased sexual problems
- Number of anger and sadness or depression were not found to significantly predict posttest scores

Mixed results for emotion words were found for men:

- More total emotion words used predicted decreases in depression and sexual problems
- However, more positive feeling words predicted increases in post sexual abuse trauma related symptoms, number of days sick, and number of days activities are restricted due to illness
- And, increases in post sexual abuse trauma related symptoms were predicted by use of more anxiety or fear words

Insight words predicted posttest scores for women only:

- More insight words were found to significantly predict decreased physical symptoms as well as number of days activities were restricted by illness
- However, more insight words were found to significantly predict increased sexual problems

Neither the number of total cognitive process nor causation words were found to significantly predict posttest scores for either gender.

Table 2. Significant partial correlations between posttest psychological (TSC) and physical (PILL) symptoms and affective and coherence word counts, controlling for pretest symptom scores and writing condition, by gender.

Pennebaker Variable	Outcome Measure	
	Female Students	Male Students
Total affective or emotional (e.g., happy, ugly, bitter)	TSC Sleep Difficulties $R^2 = .52, R^2\Delta = .04, \text{partial } r(51) = -.28^*$	
Total positive emotion (e.g., happy, pretty, good)	PILL Total $R^2 = .72, \Delta = .05, \text{partial } r(51) = -.39^{**}$	TSC Depression $R^2 = .86, \Delta = .08, \text{partial } r(14) = -.60^*$  TSC Sexual Problems $R^2 = .96, \Delta = .04, \text{partial } r(14) = -.63^*$
Positive feelings (e.g., happy, joy, love)		TSC Post Sexual Abuse Trauma-h $R^2 = .82, \Delta = .07, \text{partial } r(14) = .59^*$  PILL # Days Sick $R^2 = .53, \Delta = .45, \text{partial } r(13) = .70^*$  PILL # Days Activities Restricted $R^2 = .47, \Delta = .46, \text{partial } r(13) = .68^*$
Optimism and energy (e.g., certainty, pride, win)	PILL Total $R^2 = .71, \Delta = .04, \text{partial } r(51) = -.35^*$	
Total negative emotions (e.g., hate, worthless, enemy)	PILL Total $R^2 = .72, \Delta = .05, \text{partial } r(51) = -.38^{**}$	
Anxiety or fear (e.g., nervous, afraid, tense)	TSC Total $R^2 = .57, \Delta = .04, \text{partial } r(51) = -.30^*$  TSC Dissociation $R^2 = .69, \Delta = .06, \text{partial } r(51) = -.40^{**}$  TSC Post Sexual Abuse Trauma-h $R^2 = .64, \Delta = .03, \text{partial } r(51) = -.29^*$  PILL Total $R^2 = .75, \Delta = .07, \text{partial } r(51) = -.47^*$	TSC Post Sexual Abuse Trauma-h $R^2 = .88, \Delta = .09, \text{partial } r(14) = .65^*$
Insight (e.g., think, know, consider)	TSC Sexual Problems $R^2 = .52, \Delta = .05, \text{partial } r(49) = .30^*$  PILL Total $R^2 = .71, \Delta = .04, \text{partial } r(51) = -.33^*$  PILL # Days Activities Restricted $R^2 = .29, \Delta = .10, \text{partial } r(42) = -.35^*$	

\*  $p \leq .05$     \*\*  $p < .01$

## **Discussion**

The large number of participants reporting high betrayal trauma is not surprising given that they were a highly physically symptomatic group, and many chronic pain disorders and chronic health problems have been found to be related to trauma (e.g., Felitti, 2002). That women reported experiencing more high betrayal trauma replicates previous findings (Goldberg & Freyd, under review).

The different types of traumas reported by the women and men of this study, and the differential results of the writing intervention for each gender, suggest it would be fruitful to consider the type of trauma experienced by an individual when considering intervention strategies for trauma.

Directing the writing process to include those components found to be related to better outcomes may enhance the effectiveness of a writing intervention. For example, it appears that positive outcomes are related to the use of emotional words, at least for women. Coherence, on the other hand, as measured through causation and insight words in this study, appears to have little bearing on writing outcome. However, it is debatable whether counting these words is sufficient in judging essay coherence.

Research is currently underway to attempt to assess coherence in a more meaningful way, and to replicate these findings in a larger and more heterogeneous population of community adults participating in a similar intervention study with a longer followup interval.



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