FINAL REPORT
(With Extension of Publications Through Feb 2010)

Sexual Assault & PTSD in Women:
A Comparative Experimental Treatment Outcome Study

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For Experimental Research

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FINAL REPORT

Overview

Before presenting the findings of this study, I would like to sincerely thank the Advisory Board for the Fahs-Beck Fund, and the New York Community Trust. I remember how amazed and deeply grateful I was when I discovered that there was an organization dedicated to funding and promoting experimental research on new psychotherapies (and other treatments & community innovations). This project could not have been completed without such support.

In many ways, this report serves as an abstract for the 18-month randomized controlled trial we completed. The full, detailed report is contained in the accompanying 12 theses that resulted from this comparative experimental treatment outcome study and the conference papers that have been presented (see list on pp. 4-9).

Foa, Keane, & Friedman (2000) described a number of characteristics necessary for Posttraumatic Stress Disorder (PTSD) treatment outcome research to satisfy the "gold standard". Among those characteristics that are included in the present study (and recommended by other authors) are the following:

- Selection & screening of participants with detailed, documented procedures
- Use of established measures for PTSD & other psychological symptoms
- Randomization of participants into treatment & active control groups
- Comparison of new treatments with established psychotherapies
- Manualization of treatments with equalization of dosages
- Use of more than one therapist to deliver therapies
- Implementation of follow up assessments
- Equalization of perceived credibility
- Use of multitraits/multimethods
- Qualitative and quantitative
- Psychophysiological

From results of this study, it can be concluded that both Observed & Experiential Integration (OEI) and a modified form of Cognitive Processing Therapy (CPT-R) are more effective for PTSD symptom relief than a combination of Breathing, Relaxation, Autogenics, Imagery, and grouNding techniques (BRAIN). There is some indication that at the 3-month follow up OEI was superior to both CPT-R and BRAIN. The vast majority of participants reported (during final assessment interviews) that OEI was more effective for relief of PTSD symptoms than either CPT-R or BRAIN. Finally, it appeared that CPT-R was more effective if it followed, rather than preceded, OEI (likely because OEI reduced numbing).
Allard, D., McDonald, M., Bradshaw, R., Domene, J., Warren, M., & Houghton, J. (2007, November). Comparative treatment outcome following exposure to two trauma therapies. In R. Bradshaw (Chair), "Is this sheet clean?: The importance of cross-over designs in trauma treatment outcome research. Symposium presented for presentation at the annual meeting of the International Society for the Study of Trauma and Dissociation, Philadelphia.


Amos, D. M., McDonald, M., Bradshaw, R., & Grice, D. C. (2007, May). Dissociation and recovery in female sexual assault survivors. In M. McDonald (Chair), "It’s gonna get worse before it gets better": Methods issues in research on dissociation in trauma therapy. Symposium conducted at the annual meeting of the Western Psychological Association, Vancouver, B.C., Canada.


Bradshaw, R., McDonald, M., Heinrichs, K., Warren, M., Stewart, B., & Bowden, H. (2007, May). Clinical assessment & treatment of trauma & dissociation in a treatment outcome study. In M. McDonald (Chair), "It's gonna get worse before it gets better": Methods issues in research on dissociation in trauma therapy. Symposium conducted at the annual meeting of the Western Psychological Association, Vancouver, B.C., Canada.


Bradshaw, R. A., Stewart, B., & Lauder, J. (2009, May). Applications to work with adults diagnosed with complex PTSD, DDNOS, and DID. In R. Bradshaw (Chair), OEI for trauma, dissociation, & attachment: Work with adults & children. Symposium conducted at the annual meeting of the Society for Exploration of Psychotherapy Integration, Seattle, WA.


Cook, A., Heinrichs, K., Wilk, D., Wilk, L., & Bradshaw, R. A. (2009, November). Integration of couples therapy with OEI for relational trauma processing. In R. Bradshaw (Chair), Incorporating One Eye Integration (OEI) techniques improves the effectiveness of traditional therapies in cases of complex trauma. Symposium presented at the annual meeting of the Society for the Study of Trauma and Dissociation, Washington, DC.


Grice, D. C., McDonald, M., Bradshaw, R., & Amos, D. M. (2007, May). Dissociation, PTSD, and trauma narratives in women sexual assault survivors. In M. McDonald (Chair), “It’s gonna get worse before it gets better”: Methods issues in research on dissociation in trauma therapy. Symposium conducted at the annual meeting of the Western Psychological Association, Vancouver, B.C., Canada.


Lauder, J., Brhelle, A., Stewart, B., Bradshaw, R. A., Bedford, M., & Tonnisen, L. (2009, May). Body therapies integrated with OEI: Multidisciplinary trauma treatment. In M. McDonald (Chair), Integration of OEI trauma therapy with body therapies, couples counselling, and existential analysis. Symposium conducted at the annual meeting of the Society for Exploration of Psychotherapy Integration, Seattle, WA.

Lauder, J., Bradshaw, R., Stewart, B., Bedford, M., Brhelle, A. & Tonnisen, L. (2009, November). Body therapies integrated with OEI: Multidisciplinary trauma treatment. In R. Bradshaw (Chair), Incorporating One Eye Integration (OEI) techniques improves the effectiveness of traditional therapies in cases of complex trauma. Symposium presented at the annual meeting of the Society for the Study of Trauma and Dissociation, Washington, DC.

McDonald, M., & Bradshaw, R. (2009, May). OEI and existential analysis: Multilevel integration of approaches & techniques. In M. McDonald (Chair), Integration of OEI trauma therapy with body therapies, couples counselling, and existential analysis. Symposium conducted at the annual meeting of the Society for Exploration of Psychotherapy Integration, Seattle, WA.


McDonald, M., Bradshaw, R., Grice, D. C., & Amos, D. M. (2007, November). An 18-month RCT: VAMs, SAMs, and dissociation during trauma assessments. In R. Bradshaw (Chair), Quantitative findings from an 18-month randomized clinical trial for PTSD, complex PTSD and dissociative disorders following sexual assaults: One eye integration (OEI), cognitive therapy (CPT-R) and a relaxation control (B.R.A.I.N.). Symposium presented at the annual meeting of the International Society for the Study of Trauma and Dissociation, Philadelphia.

McDonald, M., Bradshaw, R. A., & Stewart, B. (2009, November). OEI and existential analysis: Multilevel integration of approaches & techniques. In R. Bradshaw (Chair), Incorporating One Eye Integration (OEI) techniques improves the effectiveness of traditional therapies in cases of complex trauma. Symposium presented at the annual meeting of the Society for the Study of Trauma and Dissociation, Washington, DC.


Wilk, D., Wilk, L., & Bradshaw, R. A. (2009, May). Integration of couples therapy with OEI for relational trauma processing. In M. McDonald (Chair), Integration of OEI trauma therapy with body therapies, couples counseling, and existential analysis. Symposium conducted at the annual meeting of the Society for Exploration of Psychotherapy Integration, Seattle, WA.

Williams, K., Bradshaw, R., McDonald, M., & Heinrichs, K. (2007, November). An 18-month RCT: Comparisons between treatment conditions on the CAPS, TRGI, and BDI-II. In R. Bradshaw (Chair), *Quantitative findings from an 18-month randomized clinical trial for PTSD, complex PTSD and dissociative disorders following sexual assaults: One eye integration (OEI), cognitive therapy (CPT-R) and a relaxation control (B.R.A.I.N.)*. Symposium presented at the annual meeting of the International Society for the Study of Trauma and Dissociation, Philadelphia.

Three Project Views

There are several ways to view the findings of the present study, including by:

- **Time of Assessment** (pretreatment, posttreatment, 3-month follow up, 6-month follow up, and final assessment --- see Appendix A for time overview);

- **Type of Data** (qualitative, quantitative, and psychophysiological / qEEG --- see Appendix C for detailed list of measures administered); and

- **Variable Cluster** and Name.

Each of these outlines is provided below, with occasional references to the body of the report. Most of the detailed reviews of related literature, explanations of procedures, descriptions of data analyses, and summaries of findings are contained in 12 theses that extend this report. Only highlights and conclusions are included in this Final Report.

Summary by Time of Assessment

**Pretreatment**

Prior to provision of treatment, a series of correlational analyses were completed. Relationships were assessed between (a) somatic & affective components of trauma memories, (b) organization of trauma narratives, and (c) peritraumatic dissociation. These findings provide support for Chris Brewin’s Dual Processing theory of Posttraumatic Stress Disorder (PTSD; Brewin, Dalgleish, & Joseph, 1996). A series of important domain-specific relationships were discovered, notably between olfactory recollections and peritraumatic dissociation. There were also important discoveries pertaining to inadvertent triggering caused by administration of certain research procedures during the pretreatment assessment sequence, such as the Traumatic Scene Form. These results are summarized in Section I of this report. Reviews of relevant literature, along with detailed explanations of procedures, data analyses, and findings are provided in the accompanying thesis by David Grice.

A series of quantitative Electroencephalographic (qEEG) analyses were completed during pretreatment, posttreatment, 6-month follow up, and final assessments. Comprehensive reviews of related literature and detailed procedural descriptions are provided in theses by Steivan Pinoesch and Karen Williams, who analyzed data from the pretreatment and posttreatment assessments. Many of the qEEG patterns associated with PTSD and depression were found among results for *individuals*, but no *group* differences were found.

During each application of script-driven symptom provocation, the Traumatic Memory Inventory – Post-Script version (TMI-PS) was administered. There were no group differences across pretreatment, posttreatment, 3-month follow up, 6-month follow up, and final assessments. Details are in Maren Heldberg’s thesis.
Additional measures employed in the pretreatment assessment included the Adult Attachment Interview (AAI) and a series of short qualitative interviews pertaining to coping with trauma and PTSD following sexual assaults (which were further clarified during the posttreatment assessment. Detailed procedures, reviews of related literature, quotations from interviews, and a series of important findings from that study, are provided in a thesis by Becky Stewart. General themes associated with coping are summarized. She also found that those with insecure attachments tended to use relationships as distractions rather than as deeper, closer connections with others, and also used substances a good deal in addition to psychological dissociation to alleviate intense symptoms. Those with secure attachments also used substances to deal with posttraumatic symptoms, but it seemed that those individuals required external substances more because they had not formed dissociative psychological barriers to the same extent as those with insecure attachments. A number of interesting clinical implications arise from these results, and the entire thesis is fascinating to read.

Posttreatment

A series of PTSD measures were administered at pretreatment, posttreatment, 3-month follow up, 6-month follow up, and final assessments. Detailed procedures and results for the Impact of Event Scale-Revised (IES-R) and the Clinician-Administered PTSD Scale (CAPS) for the first three of these assessments are provided in theses by Kiloko Nduna and Karen Williams. Highlights are provided in Section II of this report. Results show clear superiority of One Eye Integration (OEI) for reduction of PTSD symptoms, and these findings are corroborated by qualitative interview findings from the 3-month follow up assessment (thesis by Jessica Houghton).

Additional measures included in the posttreatment assessment were the Beck Depression Inventory (BDI-II), the Trauma-Related Guilt Inventory (TRGI), and the Social Avoidance & Distress Scale (SADS). Results for the first two of these measures are included in the thesis by Karen Williams and for the third of these measures (mixed- and cross-gender versions of the SADS) in the thesis by Kiloko Nduna. Reliability estimates for each of these instruments are provided in these two theses (internal consistency, test-retest, and interrater reliability).

Myers-Briggs Type Indicator (MBTI) was also administered at the time of the posttreatment assessment, and again, almost 12 months later, during the final assessment. Test-retest reliability estimates for each of the four bipolar scales were higher than those provided in the MBTI manual, indicating that the MBTI findings are dependable. Orientation toward the Intuiting pole of the Sensing-Intuiting continuum was found to be associated with lower PTSD symptom scores across the total sample at posttest and 3-month follow up. Detailed procedures, data analyses, and reviews of related literature are provided in the thesis by Jennifer McInnes.
3-Month Follow up

In addition to the quantitative measures mentioned in earlier assessments, there was a series of qualitative interviews included in the 3-month follow up assessments. These interviews were analyzed differently by two researchers: One (see thesis by Jessica Houghton) used the Listening Guide (a purely qualitative method) and involved interviews with a subsample of participants who had received each of the therapist-delivered treatments (CPT-R and OEI). She found that OEI was superior in relieving PTSD symptoms, while CPT-R was valued more for improvement of self-esteem and provision of coping strategies. Relationship with the therapist was mentioned more in relation to CPT-R likely because, in its manualized form, OEI is a less verbal therapy than CPT-R. The other evaluation of these interviews (see thesis by Jacob Khym) involved content analysis, a hybrid method in which qualitative data are analyzed in a quantitative manner (counting occurrences of key concepts, phrases and words as they occur in the interviews). Results of this set of analyses provided considerable support for a common finding in comparative treatment research: Extra-therapeutic factors (client characteristics, environmental factors, and facets of research participation) explain far more variance in treatment outcome than the treatments themselves. Both OEI and CPT-R were found to be more effective than the control condition (BRAIN).

6-Month Follow up

This was the last controlled experimental assessment in the study. Although there was a Final Assessment after the second round of treatment, the control group was given delayed treatment in that last phase, rendering it inoperable as an experimental control. When results of the PTSD measures were analyzed between groups at the time of this assessment, no significant group differences were found. The most reasonable explanation for the change in findings from the 3-month follow up (in which OEI was clearly superior) and the 6-month follow up (equality of groups) is that traumas and abuse incidents which had not been addressed in the 3 individual sessions from the first round of treatment began to replace the index traumas that were targeted in the study (i.e., those traumas that were included in script-driven symptom provocation used in this project) with the extended passage of time. This phenomenon is particularly likely to have occurred for the women in the study who evidenced signs of Complex PTSD and Dissociative Disorders, such as lack of alpha responses in qEEG results over central (Fz, Cz) and Occipital (O1, O2) regions, vague physical complaints (fibromyalgia and chronic myofascial pain, etc.), and high scores on the Dissociative Experiences Scale (DES). Lindsay Faas' thesis explores these subgroups in more detail over 18 months. Between now and the end of 2010 we will be continuing analyses of these subgroups to see if there are correlational response patterns consistent with other PTSD subgroups reported in the literature.
Final Assessment

It should first be noted that the Final Assessment followed the second round of treatment (see Appendix A for an overview of the assessment and treatment sequence). Treatment cross-over had occurred, whereby those who had received OEI now received CPT-R, and participants who had received CPT-R during the first round now received OEI. In this way, it was possible to obtain comparisons of treatment responses to the therapies within participants. When the women were asked which of the two therapies was most effective in alleviating their PTSD symptoms during these qualitative interviews, 23 of the 25 participants indicated that OEI had been most effective. One of the most interesting findings in the study was that when these same participants were asked (later during the same interviews) which therapy they would choose if they were offered 6 more free sessions, those who were higher on the Feeling pole of the MBTI consistently chose OEI, whereas those who were higher on the Thinking pole much more often chose CPT-R (even though they had just reported that OEI was more effective for alleviating their PTSD symptoms). When asked why they had made this choice, they gave reasons such as “It made sense”, “It was logical”, and “I could understand how it worked”. This finding has two important clinical implications: (a) Treatment-to-client matching of therapies is relevant, and (b) explanation of treatment to clients (in terms they can comprehend & embrace) is therapeutically salient.

Summary by Type of Data

Quantitative

Quantitative measures included paper-and-pencil tests such as the Traumatic Memory Inventory – Post-Script version (TMI-PS), and the 7-item Current Dissociation Scale created in this study (CDS-7), IES-R, SADS, BDI-II, TRGI, MBTI, Peritraumatic Dissociative Experiences Questionnaire (PDEQ), DES, and TAQ. Additional quantitative measures included structured interviews, such as the CAPS and AAI.

As mentioned earlier, results of the main PTSD symptom measures (IES-R and CAPS) indicated the clear superiority of OEI at the time of the 3-month follow up assessment (see Section II of this report, and theses by Kiloko Ndunda and Karen Williams, respectively). This finding was further corroborated by qualitative interview results from the 3-month follow up assessment (see thesis by Jessica Houghton).

Peritraumatic Dissociation (PD) was negatively correlated with PTSD symptom intensity (see thesis by Dorothy Marie Amos) and with trauma narrative organization (see thesis by David Grice, and highlights of results in Section I of
this report). PD was positively associated with a whole collection of TMI-PS measures including somatic domains (tactile, auditory, olfactory, and visual); and affective domains (sadness, fear, shame & anger). Neither mixed gender nor cross-gender versions of the SADS were found to change differently over time by group (see thesis by Kiloko Ndunda) and the same was found for depression (BDI-II) and guilt (TRGI), with the exception of the Global Guilt Scale at the 3-month follow up --- (see Section II of this report and thesis by Karen Williams).

**Qualitative**

Qualitative interviews were completed during the posttreatment assessment, the 3-month follow up assessment, and the final assessment. A good number of differences were found between attachment style groups in terms of the trauma coping methods they used, and meanings they ascribed to the sexual assaults and their sequelae. Detailed analyses of these findings are provided, along with extensive quotations from participants, in the thesis by Becky Stewart.

Interviews during the 3-month follow up were analyzed by Jessica Houghton and Jacob Khym (see their respective theses for descriptions of these structured interviews, and extensive quotations from participant responses). Jacob Khym’s analyses focused on the identification of extra-therapeutic influences on treatment outcomes, while Jessica Houghton’s qualitative analyses focused on differences in treatment responses and benefits reported by participants in the therapist-delivered therapy groups (OEI and CPT-R). She found that OEI was clearly superior to CPT-R in terms of PTSD symptom reduction, while the major reported benefit of CPT-R was better “coping skills”. Both therapies resulted in considerable improvements in the women’s relationships, but for different reasons and via different methods (see extensive quotations in Jessica Houghton’s thesis).

Interview results from the Final assessment included many interesting and informative findings pertaining to treatment processes and outcomes. To start with, after experiencing more than one of the treatments, 18 of the 25 women stated that OEI was most effective in reducing their PTSD symptoms. Almost all of the women were surprised at how well the OEI worked, and somewhat mystified at the mechanisms of integration (healing) of this treatment. This is likely why, when asked later in these interviews, those who were Thinkers on the MBTI indicated they would prefer CPT-R if given 6 more free sessions while those who were Feelers indicated they would prefer OEI. The Thinkers reported that, because they could not understand how OEI worked, they would be more comfortable with CPT-R (even though they had stated earlier in the same interviews that OEI was more effective for alleviating their PTSD symptoms).
Psychophysiological

In this study all psychophysiological measures were obtained via qEEG. They included amplitudes, and ratios of amplitudes across frequency ranges (delta, theta, alpha, low beta, beta, hi beta, and gamma), at several regions on the scalp (frontal – F3, F4; central – Fz, Cz; Parietal – P3, P4; and Occipital – O1, O2). These measures were completed during 3 conditions (baseline, trauma script, and trauma memory) at four assessment times (pretreatment, posttreatment, 6-month follow up, and final). The total data file includes well over 4800 variables. Analyses of alpha asymmetries in frontal and parietal regions from pretreatment to posttreatment assessments are described and reported in detail in the thesis by Karen Williams. Analyses of gamma-to-high beta ratios over the anterior cingulate and theta-to-beta ratios in the occiput from pretreatment to posttreatment are described and reported in the thesis by Steivan Pinoesch.

While both researchers found characteristic PTSD and depression signatures in the qEEG results for many of the women in the study, there were no group differences (i.e., intra-group differences exceeded inter-group differences). Analyses of this huge data file will likely continue well past December 2010.

Summary by Variable Cluster

Independent Variables:

Treatment: CPT-R, OEI, and BRAIN (Breathing, Relaxation, Autogenics, Imagery, and grouNdng — the control condition applied to all groups).

Time: 5 Assessment periods over 18 months (Pretreatment, Posttreatment, 3-Month Follow up, 6-Month Follow up, and Final).

Personality: MBTI – 4 bipolar scales (Extraversion vs Introversion, Sensing vs Intuition, Thinking vs Feeling, and Judging vs Perceiving).

Attachment Style: AAI – 3 styles (Secure, Preoccupied, and Dismissive).

Dissociation: PDEQ, DES, CDS-7

Dependent Variables:

PTSD Symptoms: IES-R (3 subscales of Intrusion, Avoidance/Numbing & Hyperarousal), CAPS, TMI-PS (intensity & reliving in somatic (visual, auditory, kinesthetic & olfactory) and affective (fear & anger) domains). Also qEEG trauma signatures, including frontal asymmetries (beta, theta), parietal asymmetries (alpha, beta, theta), alpha suppression (EO-EC-EO), excessive gamma-to-high beta ratios over the anterior cingulate (Fz, Cz), and inadequate theta-to-beta ratios in the occiput (O1, O2).
**Depression:** BDI-II and also qEEG measures, including frontal asymmetries (alpha). TMI-PS - intensity & reliving in affective domain (sadness).

**Guilt:** TRGI, including all its associated scales and subscales. TMI-PS - intensity & reliving in affective domain (shame).

**Procedural Review**

Data collection was completed on June 27th, 2006. An overview of the full study is provided in Appendix A, indicating the major assessment and treatment blocks. Following that is a summary of assessment procedures & instruments by time of assessment (Appendix B), and a list of recruitment activities (Appendix C).

In total, it took 18 months to recruit participants. Initially 137 women were recruited, and through telephone screening procedures, this sample was reduced to 60 women after preliminary study criteria were applied. Those women participated in the final screen, requiring (a) a Clinician-Administered PTSD Scale (CAPS) structured interview score > 45, (b) a Dissociative Experiences Scale (DES) score < 40, and Traumatic Antecedent Questionnaire (TAQ) scores meeting screening cuts. Of the 60 who completed those three screening assessments, 36 met all criteria. Of those, 4 were unable to complete the full pretest battery and 3 relocated to Alberta. A total of 29 women completed the full pre-treatment assessment (including qEEG measures), 27 completed the immediate posttreatment assessment, and 25 women continued through the 3- and 6-month follow ups to the Final assessment.

Great procedural detail is provided in the 12 theses that extend this report. It will take additional time to analyze the brainwave data and complete the content analysis of the final interviews (the brainwave file alone contains over 4800 variables).

**Section I**

**VAMs, SAMs and Peritraumatic Dissociation**

Britain's Dr. Chris Brewin (Brewin, Dalgleish, & Joseph, 1996) proposed a dual process model of PTSD, whereby those suffering from this disorder experienced two parallel memory processes: Verbally Accessed Memories (VAMs), which are conscious, voluntary, narrative and autobiographical; and Situationally Accessed Memories (SAMs), which are intense, fragmented, involuntary and somatically experienced. Peritraumatic Dissociation (i.e., dissociation at the time of a trauma) has been predictive of later development and severity of PTSD. It likely occurred during the trauma as a previously learned response. In other words, history of prior trauma likely caused the involuntary and automatic learning of a rapid dissociative response to trauma. Brewin noted that those with PTSD had (a) greater difficulty exhibiting or expressing VAMs, and (b) more commonly and intensely experienced SAMs.
In this study, the associations between Peritraumatic Dissociation (PD) and VAMs were explored through analyses of the trauma narratives the women completed prior to treatment, using the GREAT Coding scheme developed by Jennifer Freyd and her associates at the University of Oregon (Klest & Freyd, in press; 2004). “Organization” is the characteristic chosen for analysis, which is further subdivided into “Cohesion” and “Coherence”. It was expected that higher PD would be negatively correlated with Coherence and Cohesion scores, and that was the pattern of results discovered, using one version of the Peritraumatic Dissociative Experiences Questionnaire (PDEQ).

The intensity of SAMs was assessed using the Traumatic Memory Inventory – Post-Script version (TMI-PS), immediately following script-driven symptom provocation. Peritraumatic Dissociation was associated with SAMs intensity and re-experiencing. See Figure 1 for a summary of statistically significant (p < .05) correlations for VAMs, SAMs, PD, State Dependent Peritraumatic Dissociation (SDPD), and a current dissociation measure created in this study (CDS-7).

Another methodological innovation was the addition of subcategories in the affective domain of the TMI-PS. In the previous treatment outcome study of One Eye Integration (OEI), there were participants who rated the intensity of both their pretreatment and posttreatment affective (emotional) states as “10” out of 10. When queried, however, they specified that the pretreatment affective state had been “terror” whereas the posttreatment state had been “anger” (at the perpetrator). For this reason, in the current study we established four subdivisions of affective state at the outset: Fear/Terror/Anxiety, Despair/Sadness/Hurt, Shame/Guilt, and Anger/Rage (with intensity and reliving measures for each). As seen in Figure 1, this was extremely important, since certain emotions were associated quite discretely with particular dissociation measures.

Methodologically it was discovered that, depending upon which instruments or activities preceded completion of the PDEQ, different correlational patterns were observed with various VAMs and SAMs measures. This “state dependence” of dissociative measures has been neglected in the literature on psychological trauma. These findings are depicted in Figure 2. The full explanation of these findings is provided in the accompanying thesis by David Grice.

At the 3-month follow up, another interesting finding appeared involving PD: Severity of PTSD symptoms, as measured by the Impact of Event Scale – Revised (IES-R), was highly negatively correlated with PD. In other words, PD was a mitigating or moderating variable in terms of PTSD symptoms. At first glance, this might seem to be a desirable thing, until this finding is combined with the PD findings noted above: Higher PD was associated with more intense and re-experienced sensory and affective symptoms in response to triggering. This is very common in clinical work: Clients appear “cured”, when often they have merely dissociated the affective and somatic intensities of their posttraumatic symptoms. The intensity and abreactions then occur in response to cues in their environments.
(as they did in response to script-driven symptom provocation in this study). Details of hierarchical multiple regressions associated with these findings are in the thesis by Dorothy Marie Amos.

**Figure 1.** Visual Summary of Significant Correlations Among Dissociation Measures, Provoked Trauma Memories and Trauma Narratives. PDEQ = Peritraumatic Dissociative Experiences Questionnaire, SDPD = State Dependent Peritraumatic Dissociation, CDS-7 = Current Dissociation Scale – 7 items, TMI-PS = Traumatic Memory Inventory – Post-Script Version.
Figure 2. Diagram of the sequence of triggering events influencing responses on the PDEQ, the SDPD, and the CDS-7. PDEQ = Peritraumatic Dissociative Experiences Questionnaire; SDPD = State Dependent Peritraumatic Dissociation; CDS-7 = Current Dissociation Scale – 7 items; TMI-PS = Traumatic Memory Inventory – Post-Script Version; TSF = Trauma Scene Form.
Section II

PTSD Comparative Outcome Measures

Two theses were focused on evaluating the comparative effectiveness of the 3 therapies, in terms of PTSD symptoms. One included the Clinician-Administered PTSD Scale (CAPS) – a structured interview (thesis by Karen Williams), and the other involved the Impact of Event Scale – Revised (IES-R; thesis by Kiloko Ndunda). The latter instrument includes 3 subscales: Intrusion, Avoidance & Numbing, and Hyperarousal.

The findings from both of these outcome measures demonstrated the superiority of One Eye Integration (OEI) for reducing PTSD symptoms (see Figures 3 and 4). All 3 groups showed equal reductions in PTSD symptoms from pre-treatment to immediate posttreatment assessments; however, from the posttreatment assessment to the 3-month follow-up, only the OEI group continued reductions in PTSD symptoms. See Table 1 for a summary of significant IES-R findings across time periods for group differences. It is hypothesized that common factors contributed to the apparent equality of the 3 treatments in reducing PTSD symptoms from pretreatment to posttreatment assessments. These would include equal exposure to psychoeducation regarding PTSD, equal training in relaxation & grounding techniques, equal amounts of empathy & validation from therapists & team members, and equal exposure to individualized trauma scripts.

Additional comparative outcome measures: Depression, posttraumatic guilt and social avoidance & distress

In addition to PTSD outcome measures, other variables included the Beck Depression Inventory (BDI –II), the Trauma-Related Guilt Inventory (TRGI), and the Social Avoidance & Distress Scale (SADS; mixed and cross gender forms). From pretreatment to immediate posttreatment assessment to 3-month follow-up, all 3 groups showed equal reductions on all of these measures, with the exception of the Global Guilt Scale on the TRGI. One Eye Integration was found to be superior to the other 2 groups in reducing Global Guilt (see Figure 5). This is somewhat unexpected, since the Cognitive Therapy (CPT-R) ostensibly addressed guilt much more directly. The finding was not surprising, however, since the use of OEI for guilt and grief reactions has consistently been demonstrated in clinical work, showing rapid relief from both.

Qualitative measures & structured interviews

In addition to the above quantitative psychometric measures, several portions of the study involved semi-structured interviews, which were either coded for content, or analyzed qualitatively. Extra-therapeutic factors contributing to therapeutic changes or delays were not found to differ significantly between groups. In contrast when the two active therapies (OEI and CPT-R) were compared for influences on relationships and general quality of life, OEI was
Figure 3. Clinician-Administered PTSD Scale Scores across 3 time periods, by Group (Control, CPT-R and OEI).

**Time:** $F(2,21) = 49.62, p = .04, \eta^2 = .83$

**Time*Group:** $F(4,42) = 2.96, p = .03, \eta^2 = .22$

**Group:** $F(2,22) = 1.32, p = .29, \eta^2 = .11$
Figure 4. Avoidance (IES-R) scores at Pretreatment, Posttreatment and at 3-Month Follow-up for the three treatment groups (Control, Cognitive Processing Therapy-Revised and One Eye Integration). Time by Group Interaction is significant (p < .05)
Table 1

Summary of Significant \((p < .05)\) ANOVA F-Values for Impact of Event Scale–Revised

Average Item Scores by Assessment Time

<table>
<thead>
<tr>
<th>Scale &amp; Subscale</th>
<th>Pretreatment to Posttreatment</th>
<th>Pretreatment to 3-Month Follow up</th>
<th>Pretreatment to Posttreatment to 3-Month Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>IES-R (T)</td>
<td>Time Group (-113)</td>
<td>Time Group</td>
<td>Time Group (-113)</td>
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<tr>
<td>Intrusion</td>
<td>Time</td>
<td>Time</td>
<td>Time</td>
</tr>
<tr>
<td>Avoidance</td>
<td>Time Group (-113)</td>
<td>Time</td>
<td>Time x Group</td>
</tr>
<tr>
<td>Hyperarousal</td>
<td>Time</td>
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*Note.* In all instances where Group differences were found, Observed & Experiential Integration (OEI) was associated with lower Posttraumatic Stress symptoms than either Cognitive Processing Therapy-Revised (CPT-R) or the control condition (BRAIN).

Group \(-113\) = Case number 113 was found to be a bivariate outlier, so was excluded from the analysis.
Figure 5. Trauma-Related Guilt Inventory (TRGI) Global Guilt Subscale Score Across 3 Time Periods, by Group (Control, CPT-R, OEI).

**Time:** $F(2,21) = 6.25$, $p = .01$, $n^2 = .37$

**Time*Group:** $F(4,42) = 3.34$, $p = .02$, $n^2 = .24$

**Group:** $F(2,22) = 2.34$, $p = .12$, $n^2 = .18$
found to relieve PTSD symptoms in much more pronounced ways, while CPT-R was valued as a set of tools to improve “coping” with those symptoms (see thesis by Jessica Houghton). In addition, participants in the CPT-R group expressed more appreciation for the relational elements of the therapy than those in the OEI group. This is not to say that relationship interaction didn’t occur in the OEI condition, but merely that the manualized protocols were much more restrictive around verbal communication for the OEI group than for the CPT-R group. In real counselling settings, such rigid protocols would not be applied, so OEI therapists would be more free to interact verbally with their clients than they were in this study.

One of the theses (Becky Stewart) involved the administration and scoring of the Adult Attachment Interview (AAI). Secure differed from Insecure forms of attachment in terms of ways of coping with PTSD symptoms following sexual assault.

The final assessment interviews proved to be among the most interesting. Although the full content analysis will not be completed and written up until November this year, patterns have emerged. This interview protocol addressed the relative efficacy of, and preferences for, the therapies. This has not generally been done before. All participants had at least 2 treatments, and 2 groups were exposed to 3 different treatments. All except 2 of the 25 women found that OEI was more effective than the other 2 therapies in reducing PTSD symptoms but, interestingly, patterns for treatment preference differed from answers to questions about treatment outcome and effectiveness. Participants were asked to indicate which therapy they would choose if they were offered 6 more free sessions. Almost unanimously, participants who were “Thinkers” on the MBTI expressed preferences for either the Cognitive Therapy, or equal combinations of the OEI and Cognitive Therapies. When asked why they made those choices, even though they had clearly indicated that OEI had been more effective for them, they replied “Because I can understand it”, or some variation (“It’s ‘rational’, ‘logical’, and ‘makes sense’”). In contrast, participants who were “Feelers” on the MBTI showed more consistency between their evaluations of treatment effectiveness and their treatment preferences. When they chose OEI as “most effective”, they would unanimously choose 6 more sessions of OEI “Because it works” (regardless of how “mysterious” or illogical it seemed).

Psychophysiological measures have shown no group differences, although there are very interesting subgroup patterns that should prove instructive for clinicians and researchers, in terms of how participants responded to therapies and assessments. So far, alpha asymmetries in frontal & parietal lobes, l-r theta-to-beta ratios in O1 & O2, and gamma-to-high beta ratios over Fz and Cz have been examined for pretreatment to posttreatment assessments. Over the next 6 months, we will be examining additional qEEG measures, including: alpha suppression at Cz and O1, beta and theta asymmetries in frontal & parietal
lobes, along with l-r theta-to-beta ratios in O1 & O2, and gamma-to-high beta ratios over Fz and Cz at 6-month posttreatment and final assessments.

Additional future analyses will include correlations between all psychometric & physiological measures. Finally, there will be a number of multiple case analyses of subgroup patterns across all measures and time periods. These will be important for understanding individual differences in responses to treatments, including intrapersonal, interpersonal and psychophysiological measures.

Analyses and preparation of journal articles will occur over the next two years, along with preparation for conference presentations in November of this year.
References


Klest, B. K., & Freyd, J. J. (in press). Global ratings of essays about trauma: Development of the GREAT code, and correlations with physical and mental health outcomes. *Journal of Psychological Trauma*.


NOTE

*Hundreds of references pertaining to this study are relevant to, and provided in, the theses that extend this report. These few references happen to be specifically cited in this Report.*
APPENDICES
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Appendix A

A Comparative Experimental Study of Treatment Approaches

Sexual Assault and PTSD in Women: Cognitive Behavioral Therapy (CBT) vs. Cognitive Behavioral Therapy + Prolonged Exposure (PE) vs. Prolonged Exposure (PE) alone.
# Appendix B

**Research Assessment Protocols**

## Screening and Pre-Testing

1. Clinician-Administered PTSD Scale (CAPS)
2. Dissociative Experiences Scale II (DES-II)
3. Traumatic Antecedents Questionnaire (TAQ)
4. Informed Consent
5. Traumatic Scene Form (TSF)
6. Beck Depression Inventory II (BDI-II)
7. Peritraumatic Dissociative Experience Questionnaire (PDEQ)

## Pre-treatment Assessment #1

### Part A

1. Adult Attachment Interview
2. PTSD Coping Interview (four qualitative questions)
3. Trauma-Related Guilt Inventory (TRGI)
4. Impact of Event Scale-Revised (IES-R)
5. Social Avoidance and Distress Scale (SADS)
   (Mixed Gender-MG and Cross Gender-CG versions)
6. Dissociative Experiences Scale II (DES-II)
7. Beck Depression Inventory II (BDI-II)
8. Peritraumatic Dissociative Experience Questionnaire (PDEQ)

### Part B

1. Trauma-Related Guilt Inventory (TRGI)
2. Impact of Event Scale-Revised (IES-R)
3. Social Avoidance and Distress Scale (SADS)
   (Mixed Gender-MG and Cross Gender-CG versions)
4. Quantitative Electroencephalograms (qEEG) and Traumatic Memory Inventory – Post Script Version (TMI-PS)

## 1st psycho-education

1. Breathing, Relaxation, Autogenics, Imagery & Grounding (B.R.A.I.N.)
2. Credibility of Treatment Questionnaires (CoTQs)
2nd psycho-education

1. B.R.A.I.N. (control group)
2. CPT (treatment group)
3. OEI (treatment group)
4. Credibility of Treatment Questionnaires (CoTQs)

Post-Treatment Assessment #1

1. Clinician-Administered PTSD Scale (CAPS)
2. Trauma-Related Guilt Inventory (TRGI)
3. Dissociative Experiences Scale II (DES-II)
4. Impact of Event Scale-Revised (IES-R)
5. Social Avoidance and Distress Scale (SADS)
   (Mixed Gender-MG and Cross Gender-CG versions)
6. Beck Depression Inventory II (BDI-II)
7. Myers-Briggs Type Indicator (MBTI)
8. Qualitative Interview of Therapeutic Effects
9. PTSD Coping Interview (four qualitative questions)
10. Quantitative Electroencephalograms (qEEG) and Traumatic
    Memory Inventory – Post Script Version (TMI-PS)

3-month Follow-up Assessment

1. Clinician-Administered PTSD Scale (CAPS)
2. Peritraumatic Dissociative Experiences Questionnaire (PDEQ)
3. Trauma-Related Guilt Inventory (TRGI)
4. Dissociative Experiences Scale II (DES-II)
5. Impact of Event Scale-Revised (IES-R)
6. Social Avoidance and Distress Scale (SADS)
   (Mixed Gender-MG and Cross Gender-CG versions)
7. Beck Depression Inventory II (BDI-II)
8. Qualitative Interview - Therapy Change, Extra-Therapeutic Factors and Quality of Life
6-month follow-up/Pre-Treatment Assessment #2

1. Clinician-Administered PTSD Scale (CAPS)
2. Peritraumatic Dissociative Experiences Questionnaire (PDEQ)
3. Trauma-Related Guilt Inventory (TRGI)
4. Dissociative Experiences Scale II (DES-II)
5. Impact of Event Scale-Revised (IES-R)
6. Social Avoidance and Distress Scale (SADS) (Mixed Gender-MG and Cross Gender-CG versions)
7. Beck Depression Inventory II (BDI-II)
8. Credibility of Treatment Questionnaires (CoTQs) – 6-Month
9. Quantitative Electroencephalograms (qEEG) and Traumatic Memory Inventory – Post Script Version (TMI-PS)

Post-Treatment Assessment #2

1. Credibility of Treatment Questionnaires (CoTQs) – Final
2. Clinician-Administered PTSD Scale (CAPS)
3. Trauma-Related Guilt Inventory (TRGI)
4. Dissociative Experiences Scale II (DES-II)
5. Impact of Event Scale-Revised (IES-R)
6. Social Avoidance and Distress Scale (SADS) (Mixed Gender-MG and Cross Gender-CG versions)
7. Beck Depression Inventory II (BDI-II)
8. Myers-Briggs Type Indicator (MBTI) (12-Month Reliability Check)
9. Quantitative Electroencephalograms (qEEG) and Traumatic Memory Inventory – Post Script Version (TMI-PS)
10. Final Interviews – Relative Effectiveness Comparison
APPENDIX C

Sexual Assault and PTSD in Women: A Comparative Experimental Study of Treatment Approaches

Listing of Recruitment Efforts

1) Lists of Agencies & Women’s Shelters
2) NowTV (multiple TV shows)
3) Newspaper Articles & Ads
4) Classroom Presentations
   a. Trinity Western University
   b. Kwantlen College
5) Advertisements on Praise 106.5 (radio station)
6) Mars Hill (TWU Student Newspaper)
7) Women’s Health Fair
8) S.A.N.E. (Sexual Assault Nurse Examiner) Surrey Memorial Hospital
9) Fort Langley Natural Clinic
10) Wellness Center at Trinity Western University
11) S.A.N.E. (Sexual Assault Nurse Examiner) Program in Chilliwack
12) Victim Services (RCMP program)
13) UVic Sexual Assault Program
14) Tear off posters at:
   a. Trinity Western University
      i. Dorms & Student Life
      ii. Wellness Centre
   b. Kwantlen College
   c. Simon Fraser University
   d. UCFV – Mission, Abbotsford, Chilliwack
15) Spoke to the RA’s about the study
16) Women’s Resource Centers at SFU & UBC
17) Gay, Lesbian, Bisexual Center at SFU
18) Doctor’s Office in Guilford
19) Passed out over web to Mary Kay representative/friends
20) Jesus is Lord Church
21) Union Gospel Mission
22) Naturopath & Chiropractor Offices in Fort Langley
23) Physician offices: Whalley, Burnaby
24) Libraries: Langley, Burnaby
25) Women’s Hospital: Sexual Assault Program
26) Salvation Army Family Services
27) University of Victoria – Sexual Assault & Domestic Violence Prev.
28) Womens’ Health (incl. Mental Health) Trade Fair in Abbotsford
29) Ministry for Child & Family Development – Abbotsford, Chilliwack
30) Lighthouse Therapeutic Services (Counselling Group for Abuse)
Final Acknowledgements

Before concluding this report, it seems important to gratefully acknowledge, and thank, the many individuals who contributed to this research project. Obviously, the names of the participants can not be listed here, but I want to express my gratitude for their courage and persistence with the study. For some, the time from initial response to recruitment to completion of data collection lasted over three years.

Secondly, I wanted to mention that throughout the study there were groups of three to five nursing students from Kwantlen College who entered questionnaire data from anonymized hard copies into electronic data shells for later analysis. All of those women are not listed, but their help was sincerely appreciated.

Thirdly, during the year in which we developed and tested the protocols for qEEG assessment there were a number of undergraduate psychology students from TWU who volunteered to provide their scalps for Electro-Cap abrasion, so the graduate researchers could receive training and practice with those procedures.

Finally, I have listed below the clinicians, faculty members, and graduate students who served as researchers, schedulers and consultants on this project:

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