Investigating the Impact of a New Therapeutic Technique for Working with Ruminative and Intrusive Thought Loops: A Case Series

A thesis submitted to the University of Manchester for the degree of Professional Doctorate in Counselling Psychology in the Faculty of Humanities

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VTDT - Thought Disruption Technique
RATs - Ruminative and Intrusive Thoughts
MCQ - 30 Meta-cognitive questionnaire-30
TCQ – Thought Control Questionnaire
GHQ – General Health Questionnaire
TS – Thought suppression
SUDs - Subjective Units of Distress
ACT - Acceptance and Commitment Therapy
CBT - Cognitive Behaviour Therapy
NICE - National Institute for Health and Clinical Excellence
EMDR - Eye Movement Desensitization Reprocessing
ERP - Exposure Response Prevention
RFT - Relational Frame Theory
Abstract

Background: The aim of this thesis was to provide a systematic examination of the potential of a Verbal Thought Disruption Technique (VTDT) in reducing ruminative and intrusive thoughts (RATs). Thought Suppression (TS) is a commonly used tactic to deal with RATs. In contrast, very little is known about VTDT as a specific cognitive defusion technique in particular, or as a cognitive behavioural technique in general.

Methodology: A mixed methods case series design was used for this project. 10 individuals were involved over a 12-week period. An ABACAB design was utilised in which each individual received no intervention (A), a VTDT intervention (B) and a TS intervention (C) over the course of the study. Change was monitored quantitatively utilising the Meta-Cognitive Questionnaire-30 (MCQ-30), Thought Control Questionnaire (TCQ) and the General Health Questionnaire (GHQ). Additionally the measures were also completed at a one-month follow-up alongside the completion of Client Change Interview Protocol. The quantitative data was analysed by calculating the effect sizes of the reported change and the qualitative data analysed by thematic analysis.

Results: Use of VTDT appeared to have a positive impact on RATs five MCQ-30 submeasures (Cognitive Confidence, Need for Control, Cognitive Self-Consciousness, Positive and Negative Beliefs). VTDT use showed a positive impact as measured by the TCQ in four areas Distraction, Punishment Re-appraisal and Worry. The GHQ showed positive effects for VTDT use in the areas of Anxiety and Insomnia, and Social Dysfunction. TS had a negative impact on all measures. VTDT decreased numbers of RATs and severity of Subjective Units of Distress (SUDs) and TS increasing them, indicating a beneficial effect for VTDT and a detrimental effect for TS. The size of this effect was greater on SUDs than on RATs.

Qualitative analysis at follow up identified factors that supported the use of VTDT and of the lack of utility of TS protocols to deal with RATs. Moderating factors for the first technique were found in the lack of willingness of some participants to use it in the future. A new working model of RATs was proposed.

Conclusions: Conclusions reached are that VTDT may be a useful addition to an already wide range of cognitive defusion techniques already used in Acceptance and Commitment Therapy (ACT), and that it deserves further systematic research. TS, as previously found, appeared not to be a useful technique in dealing with RATs on most of the measures used.
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The author, Nadim Siddiqui, graduated from Manchester Polytechnic (now Manchester Metropolitan University) in 1981 with a Bachelor of Arts (class II division I degree in Psychology. He was awarded a Master of Science degree in Cognitive and Behavioural Psychotherapies in 2009 from University of Liverpool. He was elected an Associate Fellow of the British Psychological Society in 2011. He currently works as a cognitive behavioural psychotherapist part time with NHS patients, and part time in private practice, whilst concluding his professional Doctorate in Counselling Psychology at the University of Manchester. Other relevant training is listed below.


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1. INTRODUCTION

1.1 Background to the techniques

In therapeutic practice as a cognitive behavioural psychotherapist in the NHS and private practice, and as a trainee-counselling psychologist, the author (Nadim Siddiqui, subsequently referred to as “the author”), came across a technique that seemed to have a very positive effect on reducing negative thought loops and associated negative emotional states. The positive effects appeared to endure if the technique was regularly used. This technique is generally known as gibberish, and it involves uttering of nonsense phrases to instil a feeling of ease. Over a period of time during therapeutic practice, and under professional supervision, the technique evolved and was developed into a formalised protocol called Verbal Thought Disruption Technique (VTDT). This therapeutic experience built up a body of anecdotal evidence that the practice of VTDT appears to have a consistent and lasting effect on negative thought loops. The current purpose was to investigate the use of VTDT in a more structured, formal fashion, in order to ascertain if there is any basis to justify further research into its utility and application. Another aim was to see if it is justified to use the protocol as a therapeutic tool with a wider audience. I shall introduce the technique and put it into context below.

The authors’ therapeutic practice is broadly based on Cognitive Behaviour Therapy (CBT), which uses a variety of techniques to control or cope with thoughts, emotions behaviours and bodily responses. The basic processes are as described by Westbrook, Kennerley and Kirk (2011) and form the norms of practice in standard CBT. According to the National Institute for Health and Clinical Excellence (NICE, 2010), the approach works well enough and has sufficient empirical basis to warrant government approval, finance and investment. Despite this plaudit and the apparent comfort of concise manualisation (e.g. Crufad, 2013), the author has on frequent occasions, encountered difficulty in tackling thought loops using existing standard so called “second-wave” cognitive behavioural techniques.
Hayes (2004) proposed that there are three successive waves, or “dominant assumptions, methods, and goals” of (cognitive) behaviour therapy that have surfaced thus far (p. 640). Each has been conceptualized as evolving out of the previous “wave,” therefore resulting in many shared features between them. The focus of the first-wave was on observing, predicting and modifying behaviour in an effort to promote mental health (Skinner, 1953). This first-wave of therapy shifted when researchers re-examined a link between dysfunctional cognitions and maladaptive behaviours and sought to help individuals reappraise distorted thinking patterns, using strategies like guided discovery and direct refutation. This spawned the second-wave therapies such as Cognitive Therapy (Beck, 1967) and Rational Emotive Behaviour Therapy (Ellis, 1957). However, critics of second-wave therapies argue that research generally has not demonstrated the benefit of adding cognitive change strategies to traditional behaviour therapy (e.g. Longmore and Worrell, 2007). This prompted the rise of a new crop of therapies promoting novel methods for dealing with problematic internal experiences. The third-wave of (cognitive) behaviour therapies represents a diverse collection of interventions that includes Dialectical Behavior Therapy (Linehan, 1993), Mindfulness-Based Cognitive Therapy (Segal, Williams and Teasdale, 2002), and Acceptance and Commitment Therapy (ACT, Hayes, Stroshal and Wilson, 1999). These therapies encourage mindfulness of internal experiences and emphasize acceptance instead of change of negative internal sensations and thoughts (Herbert and Foreman, 2010). ACT sees a technique called cognitive defusion as major distinguishing component and feature that separates it and the so-called second-wave cognitive behavioural therapies (Flaxman, Blackledge, and Bond 2011). It relies on the modification of cognitive events in their function, rather than content and frequency. Therefore the second-wave CBT protocol of altering content of thoughts (i.e. cognitive restructuring) does not need to take place in order to achieve therapeutic effects. ACT promulgates that altering one’s relationship to thoughts (defusion) is a critical factor.

An important component of CBT in general is the use of a wide variety of relaxation protocols. Some examples are progressive muscle relaxation (Benson, 2000), breath control techniques (Clark, 1989), and the therapeutic
use of meditation (Kabat-Zinn & Hanh 2013). In a search for client relaxation material to use, the author came across what initially appears to be a somewhat bizarre meditative relaxation technique (Chandra, 1989a).

1.2 The gibberish technique

Chandra is more widely known as Bhagwan Shree Rajneesh or by the nickname “Osho”. He was a professor of philosophy who went on to establish an ashram in the United States that emphasised the importance of meditation, awareness, love, celebration, courage, creativity and humour. One of the many techniques of meditation (and humour) was gibberish. The technique involves the repeated utterance of nonsense words in a deliberate but unorganised fashion. Its use was intended to have a cathartic effect. The author personally trialled the technique, and found that it did appear to have a relaxing effect that seemed to work quite quickly. In order to achieve “silence” of the mind, the length of nonsense utterance suggested by Osho was under two minutes. The author found that relaxation, and significant settling took place between two to ten minutes. This finding appeared to have practical value as most clients appeared to struggle with finding time to conduct more widely used meditative practice, such Williams, Teasdale, Segal and Kabat-Zinn (2007). They suggest the use of compact disc based procedures such as the body scan, mindful standing yoga, mindfulness of breath, mindfulness of sounds, and the three-minute breathing space. Apart from the last one, they take between 10-30 minutes. They suggest using more than one exercise. It is recommended allocating at least 20-30 minutes twice per day (Williams & Penman, 2011). Pre-Chandra Gibberish (sometimes known as Jibberish or Gobbledygook) is said to be talking that sounds like speech is being uttered, but the speech deliberately has no meaning. This lack of any literal sense can be described as the presence of nonsense, or the absence of sense or meaning. The Oxford English Dictionary lists the origin of gibberish as perhaps coming from gibber “...speak rapidly and unintelligibly, typically through fear or shock” with the addition of the suffix -ish to denote a language (e.g. Spanish, Swedish). Gibberish is not literary nonsense as expressed in poems such as
“Jabberwocky” by Lewis Carroll. It involves the absence of meaning. The first formulation as a technique is attributable to Chandra (1989a). He states: -
“you are allowed to speak any language that you don’t know. Just avoid the language that you do know, because the language that you do know will not bring your nonsense out, it will be very grammatical. Meaning is not at all the requirement. Just for two minutes give an opportunity to your existence to be meaningless. And you will be immensely shocked to know that just within two minutes you become so light, so ready to enter into silence.”
The author found the technique helpful personally and with clients, as an aid to relaxation. Its use to reduce intrusive and ruminative thought loops was a matter of serendipity. A client in 2005 reported that the use of gibberish helped him “interrupt his flow of negative, automatic thoughts” as well as being helpful as a relaxation method. This utilitarian result was discussed in the course of the therapy, and it was collaboratively agreed between client and therapist to use the technique deliberately, as a means of switching off unwanted and disturbing ruminative cognitions, the negative automatic thoughts. Following on from this, the author further developed the use of gibberish as a pragmatic, more formalised technique to switch off ruminative thoughts with other clients. The formalised technique was eventually named Verbal Thought Disruption Technique (VTDT), partly as an attempt to more accurately encapsulate the process, and partly to overcome potential scepticism possibly aroused by the somewhat unorthodox nature of the process. It seemed to be very useful in circumstances where negative cognitions (negative automatic thoughts) had been previously vigorously and repeatedly challenged in the traditional second-wave cognitive behavioural protocol of thought re-structuring, but the clients still reported ruminative recurrence of negative thought loops. Cognitive re-structuring therapeutic impasses often encountered in second-wave CBT (Longmore & Worrell 2007) appeared to be resolved quite quickly. The pathway to the structured VTDT, gibberish based technique/protocol is briefly described below.
1.3 Development of the technique into a therapeutic protocol

The author is a qualified and trained Eye Movement Desensitisation Reprocessing (EMDR, Shapiro 2001) therapist. This treatment uses a clearly defined eight-stage protocol to operationalize the treatment of post-traumatic stress disorder and other psychological issues. This ordered but flexible model inspired the author to evolve a clearly defined protocol for the use of the gibberish technique. In an attempt to give the protocol structure, a ten step systematic application of the gibberish technique was established with the specific purpose of targeting ruminative, intrusive thoughts. The VTDT protocol is contained in Appendix 1 (the thought suppression protocol in Appendix 2). The author refined and developed the VTDT protocol over three years, modelling it on some aspects of standard treatment routines used during EMDR. Another factor to facilitate the use of VTDT in psychotherapy was when other established third-wave CBT procedures such as Attention Training Technique (Wells, 1990) were found to be quite difficult to use by clients, both in and out of the therapy room. The procedure starts by explaining the rationale behind VTDT, using the format contained in Appendix 3 as a tool for informed consent. Deliberately targeting (or experiencing) ruminative cognitions is the next stage. To aid this, a list of negative cognitions (Appendix 4, as used during eye movement therapy) is used to help elicit the idiosyncratic nature of the participant's meta-cognitions. The flow of ruminations is then broken by the use of gibberish. During the process of development, automatically occurring negative ruminative and intrusive thoughts were termed RATs for convenience and ease of identification of these cognitive patterns. By their nature, the RATs had individual salience, meaning and relevance and severity. RATs could be internally experienced, often negative self-referential statements like “I am going to mess this up,” or statements like “stupid!” The frequency, severity and emotional effect of the cognitions are what determine if it is a RAT or not. VTDT involves deliberately accessing RATs and introducing intermittent shifts of attention that aim to turn down these targeted thoughts. The VTDT process involves using externally, or more usually silently expressed nonsense phrases to interrupt the flow of the intrusive material. The frequency, intensity and
duration of the RATs appear to vary with the level of subjective units of distress (SUDs, 0-10 scale; Wolpe, 1969) associated with the target thoughts. These thoughts can be re-accessed deliberately (deliberate exposure), or VTDT can be used when they occur spontaneously. VTDT introduces executive attentional control (Gunter & Bodner 2008). As attention is the basis of consciousness and learning, attentional control can enable a person to shape the version of reality inhabited. VTDT may suspend worry, rumination (negative automatic thoughts, meta-cognitions), and threat monitoring. The technique is not about suppressing thought content or as a purely coping protocol; its aim is to interrupt and introduce control over particular processes, and to facilitate desensitization and reprocessing of them (similar to EMDR). It enables being able to relate to these processes without having to engage in prolonged calculative activity or aberrant goal directed coping strategies. Controlling cognitions and meta-cognitions during exposure to them maximises the efficiency of new learning (similar to Exposure Response Prevention, Twohig, Whittal, Cox, & Gunter, 2010).

Re-directing attention during exposure to threatening or anxiety provoking situations, enables the increase into awareness of new and adaptive information - adaptive information processing (Fisher & Wells, 2010). Therefore VTDT is possibly similar to Attention Training. Anecdotally, when people clear their heads of frustration or anger using an utterance like arrghhh or swear, it appears to clear emotional and cognitive channels. Similarly when people have reported cognitive loops, like a song stuck in their heads, VTDT successfully removes the loop. The technique is not just distraction, because in VTDT the RATs are sequentially re-visited and the level of SUDs is elicited before and after the VTDT.

1.4 Rationale for introduction of new skills into therapeutic practice

A three-part information-processing model of therapist skill acquisition was proposed by Bennett-Levy (2006), and developed by Harrhoff, Gibson and Flett (2011). One aim of this was to improve the quality of CBT case conceptualisation. The name given to this was the Declarative-Procedural-Reflective model. The first part of the model, the declarative system, involves
learning factual information about therapy related matters, for example details of a different therapy style. The second part, the procedural system, concerns knowing when and how to apply this acquired factual information, between “self-schema” and “self-as-therapist” schema. In other words, how does use of this new information impact on the therapist as an individual and practitioner? The third reflective system integrates the preceding declarative and procedural learning by actions such as “curiosity, a mismatch of expectations or therapeutic rupture” (Bennett-Levy, Mc Manus, Westling, & Fennel, 2009, p. 582). From 2010 onwards, as part of a process of following the above model, of continuing professional development and participation on a professional doctorate in counselling psychology, the author became familiar with the theory, techniques and practice of Acceptance and Commitment Therapy (ACT, Hayes, Strosahl & Wilson 2003). Case-conceptualisation (e.g. Kuyken, Padesky & Dudley, 2009) and the Declarative-Procedural-Reflective models involve the use of self-practice and self-reflection as a framework to develop skills. Self-practice is where a therapist utilises interventions and techniques on themselves. Having a well-developed reflective system also helps a practitioner reflect on information that they have about a client from a number of different perspectives. Epstein (1994) outlines a reflective component to therapy practice that draws both on rational and experiential knowledge. This results in a meta-cognitive process that Bennett-Levy (2006) describes as a deeper sense of “knowing.” On-going case conceptualisation and a growing body of anecdotal evidence, led the author to the conclusion that VTDT could in fact be described as a cognitive defusion technique. Unlike second-wave CBT cognitive re-structuring, defusion techniques in ACT do not attempt to change the way people think about experiences. Defusion techniques aim to disrupt verbal processes. Cognitive fusion is where the function of a verbal process has negative consequences. People become entrapped (sometimes debilitating so), by negative self-evaluations and overly rigid verbal rules. Cognitive defusion refers to contexts where these verbal rules “are at least temporarily disrupted” (Blackledge 2007, p. 557). It appears that the author has come across a new technique that has anecdotal therapeutic value. The purpose of the current research was to investigate if VTDT does have demonstrable effect on RATs by contrasting it
with the widely and frequently used cognitive technique of thought suppression. This is more specifically outlined in 1.5 below.

1.5 The purpose of the study

My professional motivation for undertaking the research fits into the core tenets of the scientist-practitioner model (Benjamin and Baker, 2000). These core tenets are deemed essential to counselling psychology. Having come across an apparently useful intervention, I felt a strong inclination that I needed to apply some scientifically based assessment protocols in order to clarify its usefulness. I felt I needed to assess and integrate what previous and current findings could inform decisions regarding continuing and expanding use of the protocol in relation to the well being and healthcare of my clients, as well as feeding my own professional curiosity. Anecdotal evidence that I had amassed regarding the VTDT technique was not of sufficient quality or depth for me professionally. Better quality evidence would require the setting up specifically relevant hypotheses in a quantitative and qualitative structure. Structuring the research within a multidisciplinary (counselling and educational psychology) university setting provided a means of conducting an investigation with the guidance of other professionals within the field of applied psychology. This informed my choice of second research supervisor being from the field of educational psychology.

The purpose of the study was to provide initial empirical data in a structured fashion, on a technique developed in therapeutic practice. It is designed in a dismantling framework, where other potentially confounding elements of second-wave Cognitive Behaviour Therapy, Meta-cognitive Therapy, ACT or EMDR are not utilised. Focus is on comparison of VTDT with a formalised, contrasting 'treatment as usual' comparison condition of TS. The research questions are:

The research questions are formulated in the form of 6 hypotheses and two general questions: -
The hypotheses, as indicated in the Introduction were:

1. Using VTDT has a positive influence (i.e. a reduction) on levels of meta-cognitions as measured by 3 standardised psychometric measures.
2. Using TS has a negative influence (i.e. an increase) on levels of meta-cognitions as measured by 3 standardised psychometric measures.
3. Using VTDT has a positive influence (i.e. a reduction) in meta-cognitions as measured by RATs.
4. Using TS has a negative influence (i.e. an increase) on meta-cognitions as measured by numbers of RATs.
5. Using VTDT has a positive influence (i.e. a reduction) on the severity of SUDs associated with RATs.
6. Using TS has a negative influence (i.e. an increase) on the severity of SUDs associated with RATs.

Two general research questions asked were:

A. Do the qualitative findings from the use of semi-structured interviews, support the use of the VTDT intervention?
B. Do the qualitative findings from the use of semi-structured interviews, support the view that the use of TS is undesirable?

The overarching research question was “Is the VTDT a technique a useful addition to existing cognitive defusion techniques, and therefore worthy of further systematic research?”

The above questions are addressed in a small pilot sample (n = 10) of screened non-clinical volunteers who report ruminative and intrusive meta-cognitions. The format of this investigation was to review relevant literature in an attempt to place the VTDT technique within the field. Then the research design, type of participants recruited, measures and analyses used are discussed. The results are presented in some detail in order to do justice to the broad range of measures used. The emphasis is on quantitative data with triangulation from
semi-structured interviews. The results are then discussed in the context of the research questions and hypotheses. Some general observations and conclusions are presented before a working model of RATs is formulated and proposed in the light of the research findings.
2. LITERATURE REVIEW

The review will briefly look at research that influenced the development of the current project. It will place the use of VTDT in cognitive behaviour therapy in general, then look at some background of the gibberish technique, and then look at the role of meta-cognitions, ruminations and tactics to alter them. Finally there will be brief reviews of aspects of Eye Movement Desensitisation Reprocessing (EMDR), Exposure Response Prevention, (ERP) and Relational Frame Theory (RFT) and ACT with special reference to cognitive defusion. The relevant literature in these areas will be considered in the context of VTDT.

For the literature review two search strategies, electronic and manual were used. The automated search strategy was on research papers that were identified by carrying out searches on the University of Manchester University Library system, and on the databases Psychinfo, Google Scholar, Medline, and the Association for Contextual Behavioural Science (ACBS), the professional body for ACT. It was considered important to include broad terms in order to include as wide a net as practically possible in an to attempt to capture studies that might not have be caught by western mainstream academic recording methodology, or be on the outskirts of ACT and second-wave CBT.

Following University of Manchester systematic and literature review guidelines (University of Manchester, n.d.), search parameters used for systematic and literature reviews are similar in many ways, and involve the use keywords search terms. The choice of these terms was based on the theoretical lens that the study was situated in, as suggested by Philips and Burbules (2000). Specifically, the lens is that of third-wave CBT of ACT, and its attendant language and terminology. This enabled generation and crystallisation of the below terms. Key words used were; gibberish, jibberish, cognitive defusion, exposure response prevention, Eye Movement Desensitisation Reprocessing, meta-cognitions, ruminative and intrusive thoughts, thought suppression. The addition of EMDR was entirely due to the researchers own experience as an EMDR therapist. It is believed that this inclusion is the first time that the two approaches of ACT and EMDR have been linked in a theoretical fashion.
relating to possible common underlying mechanisms. This is discussed in more detail in the Literature Review in section 2.

Inclusion criteria used were that studies needed to primary research, i.e. that the studies directly collected and analysed primary data sources from participants. Purely theoretical overviews of research were considered, where they signposted to locating work that did contain data that was more directly qualitative or quantitative in nature. The participants in the research had to be adults, and have been experiencing self-reported (or researcher identified) ruminative and intrusive thoughts, or potentially associated emotional and physiological correlates. The cognitions identified in participants in the studies, were to have been at a level to cause some disturbance in emotion, function or believability (but not necessarily at a “clinical” level). This helped distinguish rumination from reflection.

Exclusion criteria used were eliminating only theoretical overviews of research, therapy instructional manuals, book chapters, papers not available in English language versions, and also multi-component (i.e. non-dismantling) studies. Filtering was applied that identified and excluded work that considered therapeutic efficacy using acceptance and commitment therapy (in the whole or more than a cognitive defusion element) as one of the independent variables, or studies or elements of studies that did not isolate rumination as a variable. Specifically excluded where situations were more than one of the ACT hexaflex components, over and above cognitive defusion/rumination were targeted as part of the therapeutic mix in a treatment condition. The numbers were reduced further using Boolean operators “AND” and “OR” “NOT” with the search terms cognitive defusion, ruminative and intrusive thoughts, gibberish, jibberish, thought suppression, exposure response prevention, Eye Movement Desensitisation Reprocessing and meta-cognitions. Using the above tactics eliminated a large number of studies with potentially confounding variables in relation to the aims of this project. This brought the numbers from in excess of 485,000 to a 1416. With Google Scholar alone, using the search parameter “gibberish” produced the large number of 40,300 results. As a matter of pragmatism, the first 30 pages of results were examined and screened using
the exclusion criteria. Also, as with the electronic search, the numbers were reduced using Boolean operators AND” and “OR” “NOT” with the search terms referred to above. These procedures brought the numbers to a more manageable number of 234. A manual search of 21 leading ACT textbooks was conducted using an index search for the key search terms above. These texts appear on the ACBS Professional Bookstore and were accessed in September 2013. Latest available issues were consulted. The data stream was cross-referenced with the electronic searches and duplicates eliminated.

A narrative summary of the filtered citations abstract searches was conducted, as a quantitative analysis was not the focus of, and beyond the scope of this review. Data was summarised using a standardised and structured Cochrane Data Extraction Sheet (n.d.), applying the above inclusion and exclusion criteria. As there were time and resource limits for the project, the format used was one of simple tabular text based word-processing. The data was entered onto the forms, and to facilitate data extraction the sheet contained the following headings, study title; research question; participants; data analysis; conclusions. This was used in conjunction with the above inclusion and exclusion criteria. As this work was not a systematic review, the large amount of detail encountered in this filtering operation is not attached. The Cochrane Data Extraction Form format brought the numbers of the combined searches down to 127 that are referred to in the literature review. A relevance filter checklist was applied to these 127 studies. This checklist was a 0-10 rating on the factors of relevance to the ACT and Relational Frame Theory theoretical lens, and also a similarity of function and application filter to the contents of Gifford Hayes and Stroshal (2008) list of cognitive defusion techniques contained in Table 1. This relevance filter checklist resulted in the exploration of 9 of these papers in more detail than the other 118 that have been referred to.
2.1 Placing of VTDT in Cognitive Behaviour Therapy

The basic cognitive principle of CBT moves from the widely held “common sense” assumption of negative events in life causing emotions, to one of cognitions influencing emotions. This is illustrated in Figure 1 below.

![Figure 1. Basic cognitive principle](image)

A more elaborated form that underlies CBT is the inclusion of behaviours and physiology, and the interdependent influence of cognitions, behaviours, physiology and emotions. This interactive “hot cross bun” or interactive model of CBT is well known (e.g. Padesky & Mooney, 1990) and is represented in Figure 2 below.

The use of this elaborated model facilitates a functional analysis, to describe problems with more clarity and detail. It also enables directionality to be determined in application of specific techniques. For a technique or therapy to be described as CBT, it needs to consider the interactive relationship between four elements cognitions, behaviour, emotions and bodily responses/physiological correlates. Each can have an influence on the other, in a multi-directional, interactive-fashion.
A functional analysis of obsessive-compulsive disorder might attribute an increase in the emotion of anxiety (for whatever reason), to an increase in ruminative negative thoughts, which feeds back to increased anxiety, with consequential fight or flight cortisol responses (physiology), which feeds into a need to exercise control by doing something, e.g. behaviour (checking, cleaning). Breaking these feed back cycles is the object of CBT (see Royal College of Psychiatrists, n.d. for more examples). Some of these interactive elements occur without conscious pre-meditation or planning. Deliberately manipulating one or more of the four constituent elements demonstrably has such an effect that it influences commissioning of mental health services (NICE 2008).

In standard CBT practice, most emphasis is put on changing (challenging) thoughts, in a collaborative, therapist assisted logico-deductive fashion. This standard application of CBT became known as second-wave CBT. A more recent form is the development of third-wave CBT, with emphasis on acceptance and mindfulness-based practices (Hayes, 2004). In the third-wave, emphasis is on deliberately (mindfully and non-judgementally) accepting aspects of negative occurrences (such as thoughts), without challenging them, without necessarily trying to control them.

Whilst no formal scientific investigations into the use of gibberish/VTDT appear to exist, it is helpful to briefly look at some examples from the literature that might bear a connection with the process under investigation. Anecdotally,
when people clear their heads of frustration or anger using an utterance like arrghh! or swear, it appears to clear emotional and cognitive channels and has reported positive effects on pain, when used in moderation (Stephens, Atkins & Kingston, 2009, Stephens & Umland, 2011). In the context of pain, the use of swearing appears to serve as a simple form of emotional self-management. In the first study, student volunteers were asked to hold their hands in freezing water for as long as they could. They were given the choice of chanting a neutral word, or repeating a swear word. Those that chose to swear reported less subjective pain and could endure cold immersion for about 40 seconds longer. In the second study, it was found that if swear words were used very frequently, then the pain reduction effect declined due to a loss of associated emotionality. Decline in emotionality resulted in decreased production of pain reducing chemicals. As applied to swearing and pain reduction, the functional analysis model is that the behaviour of uttering swear words elicits and magnifies the physiological fight or flight syndrome which causes the direct reduction of pain through the production of encephalin and endorphins. The use of neutral words as a response to pain did not have a significant effect on the pain, and over-use of swear words decreased emotionality and consequential physiological effects on pain (probably due to habituation, Bouton, 2007). It might therefore be possible that other techniques might have an influence on cognitive systems, specifically the use of behavioural repetition (gibberish), in close proximity to intrusive thought loops, aiming to reduce negative effects associated with the occurrence of those thought loops (i.e. RATs).

As discussed above, there has been the development of third-wave CBT. This generally arose from problems with the application of second-wave CBT. Siddiqui (2012) examined intuitive and personal understandings of the author reached whilst reviewing a routine piece of CBT therapeutic work. The context of that work lay in professional development in an individual's counselling practice that was embedded in traditional second-wave cognitive behavioural practice. This development involved a transition towards a more third-wave acceptance and mindfulness based framework. The therapy was found to be a competent piece of second-wave CBT, as assessed by a condensed cognitive therapy rating scale (Siddiqui 2006). A process of focusing self-reflection on the
work resulted in 16 blocks of uncomfortable felt-senses. The strongest felt-senses were found not to be linked to the actual conduct of standard second-wave CBT, but to the emergent knowledge that alternative methodological approaches to a presenting problem may be applicable. The thrust of the work was about how a counsellor knows when to introduce new therapeutic practices to the counselling process, and how change in practice and techniques is managed. The conclusion was that transitions in therapeutic practice are desirable to reduce ruptures and impasses in therapy. A thematic review of a recorded session revealed a need to consciously facilitate a transition from the use of second-wave to third-wave CBT (Siddiqui 2014, in press). The therapist was trained in, and worked for over ten years in a predominantly second-wave CBT way. A major part of this has been helping clients to re-structure thought processes by means of identifying and challenging negative automatic thoughts and dysfunctional assumptions. On reviewing 2010/2011 practice notes, Siddiqui found that in quite a large number of clients (about 30%), significant difficulty was encountered by them in challenging and re-structuring thoughts. This was either due to the volume of negative automatic thoughts and dysfunctional assumptions encountered, or simply lack of success in altering emotional, behavioural and physiological sequelae, after challenging. This led to increased use of mindfulness and acceptance techniques and was a factor in the development of the use of VTDT. The process of VTDT does not challenge the actual content of RATs, but seeks to bring in and accept the occurrence of them in a deliberate fashion. This theme is picked up later in the review in the section on ACT.

2.2 Gibberish

The origins of gibberish have been traced back to the early 16th century (Chantrell 2002). It has been suggested (Seaborg, 1980) that the origin may be derived from the name of the famous 8th-century Islamic alchemist Jābir ibn Hayyā, the Jābir being Latinised as Geber, and this in turn becoming anglicised to gibber. Jābir apparently often used incomprehensible technical language with respect to the practice of alchemy. However it is more likely that the actual process of
gibberish arose from a Sufi sect of Islam's use of meditative practice or Muraqaba. This originates from verse 4:1 of the Qur'an, which states “He is to collect all of his bodily senses in concentration, and to cut himself off from all preoccupation and notions that inflict themselves upon the heart.” The aim is to attend to God more fully by attending to "Essence without likeness." The actual process is not specified in detail, and the process of uttering word sounds without meaning was a subsequent modification/addition by the Sufi sect, though the development or process or is not well documented. This Sufi practice was further picked up and adapted by Chandra (Bhagwan Shree Rajneesh, nickname “Osho”) in 1989. The most widespread use of gibberish currently, is by adherents of the Osho Foundation, where it is used as a form or technique of active meditation (Chandra, n.d.). It is currently used as part of Osho Evening Meeting introduction program where “gibberish and let go” is used as the first part of a three-stage event at public evening meetings. The eyes are closed and nonsense sounds are said out loud. The sound needs to be in themselves devoid of meaning, unlike like the literary nonsense of Edward Lear and Lewis Carroll where actual words are used to deliberately construct absurd, whimsical, foolish, amusing word play with little or no real meaning. More recent example of this word play are the amusing way that words with individual meaning are strung together in an incoherent and meaningless (apart from humour) way. Two examples are a comedy sketch on Rutland Weekend Television – Gibberish, (YouTube a, n.d.) and “Professor” Stanley Unwin’s use of “Unwinese” (YouTube b n.d.). Humour does have a relaxing effect and facilitates coping with physical discomfort according to Zillmann, Rockwell, Schweitzer and Sundar (1993).

There are some instructions, for example “How to speak gibberish in five easy steps” contained on YouTube c (n.d.). These can be accessed simply by searching YouTube for the word gibberish as a search term. Whilst containing formulae as to how to speak gibberish words, they do not form the basis for gibberish as used here. The origin of these “rules” is difficult to determine. The language used in gibberish with Osho, and in this study, has the appearance of words, but they are not formally known or individually recognisable words. They may at some stage resemble real words with emotionality attached to them,
however if the meaning is decipherable, it is not gibberish. Parts of the Osho instructions are reproduced below.

“While sitting, close your eyes and begin to say nonsense sounds – any sounds or words, so long as they make no sense. Just speak any language that you don’t know! Allow yourself to express whatever needs to be expressed within you. Throw everything out. The mind thinks, always, in terms of words. Gibberish helps to break up this pattern of continual verbalization. Without suppressing your thoughts, you can throw them out.” One is allowed to express oneself, in whatever needs to be expressed within the person. The instruction purports to describe how the mind always thinks, in terms of words. The gibberish helps to break up this pattern of continual internally experienced verbalization. “Without suppressing your thoughts, you can throw them out. Let your body likewise be expressive.”

The gibberish ceases (after about two minutes) with a drumbeat, and the process is then followed up with the second stage, a period of deep silence, stillness and relaxation. This apparently allows for a passage inwards “deeper and deeper, just like an arrow. Penetrate all the layers and hit the center of your existence.” The final stage, following a drumbeat again, is to let oneself fall down "like a bag of rice," so that one is lying still and relaxed in silent stillness.

The aim of the gibberish is further specified later: -

“Remember, the first step of the meditation is Gibberish. Gibberish simply means throwing out your craziness, which is already there in the mind, piled up for centuries. As you throw it out you will find yourself becoming light, becoming more alive, just within two minutes.”

Gibberish Training is currently being offered in the United States. There is the prospect of become a certified gibberish coach with the Laughter Yoga Institute (n.d.). This “institute” offers the opportunity to “learn the science and art of fully expressing yourself through speaking via words which don’t make sense to your Critical Mind. Discover how to fluently share this mind-expanding work with others of all ages.” Clearly such offers of training may present problems of face validity for any serious clinical application of the technique. Osho became controversial in his later life due to a series of complicated allegations and counter-allegations of criminality. These allegedly involved various sexual
practices, tax evasion and the acquisition of a fleet of Rolls Royce cars. He eventually fled the USA and was denied entry into twenty-one countries. The Osho foundation survives him and is active today.

Gibberish is also different to word salad that appears in some cases of psychosis and schizophrenia. Word salad is a manifestation of language where confused, and often repetitious, language, with little or no apparent meaning or relationship is attached to them. This is known as schizophasia (Berrios, 1999), and it is regarded as a thought disorder, which is evidenced by disorganized speech. Other examples are derailment, poverty of speech, tangentially, illogicality, perseveration, neologism, and thought blocking (but not thought suppression). People exhibiting schizophrenic or other psychotic language behaviours are less likely to demonstrate awareness or concern about the disordered thinking than those who do not (Jefferson & Moore, 2004). With gibberish, there is a conscious and deliberate decision to engage in the language/thought protocol.

Scat singing is vocal improvisation with wordless vocables, nonsense syllables and sounds. It is an improvised form of vocal expression where melodic lines are variations on scales and arpeggios, riffs and stock musical patterns (Pressing 1988). Famous exponents were Ella Fitzgerald and Louis Armstrong. A psychological element is alluded to by Pressing. Drawing on the Jungian model of the collective unconscious, vocal improvisation can apparently allow for revelations from the soul's depths. There seems to be no empirical evidence offered to support this conjecture. A more contemporary version of scat singing is known as beat boxing. This is a method of vocal percussion using voice, mouth, lips, tongue for the production of musical sounds, and drum beats and rhythms. Both scat and beat boxing can be said to have similarities to gibberish. Some claims have been laid to the positive effect of beat boxing as an aide to creative composition. Michael Jackson recorded himself beat boxing on a dictation tape recorder as a demo. On a video (YouTube d, n.d.) he explains how this process helped him compose a number of well-known songs such as including “Bille Jean” and “The Girl is Mine.”
2.3 Ruminative and intrusive thought loops

A frequently occurring problem encountered in counselling is one of thoughts that have a negative effect, coming into awareness, without a person consciously wanting them to be there. People struggle to get these out of their minds, usually with little success. This phenomenon is known as ruminative and intrusive thought loops (Smith, & Alloy, 2008 for a review), though the occurrences did not become identified with an acronym as in this work. These thought loops are present in a wide variety of conditions like obsessive-compulsive disorder, anxiety, depression, and post-traumatic stress disorder. They also occur frequently in the general (non-clinical) population, and these cyclical negative thoughts can form thought traps that are hard to escape from (Moritz & Hauschildt 2012). An operational definition of intrusive thoughts is “repetitive, upsetting, unwanted thoughts, images or impulses of internal origin that suddenly appear in consciousness and are considered irrational, unrealistic, foreign to one’s character, and difficult to control” (Purdon & Clark 1993, p.715). Intrusive thoughts have been the subject of investigation for a considerable time. Rachman (1981, p. 89) provides an early definition “repetitive thoughts, images or impulses that are unacceptable and/or unwanted. They are generally accompanied by subjective discomfort”. He identifies three criteria that are necessary and sufficient to define a thought as intrusive:

1. Subjective reports that the thought interrupts on-going activity.
2. The thought, image or impulse is attributed to an internal origin.
3. The thought is difficult to control.

According to Nolen-Hoeksema (1991) rumination is a response to distress in which people focus on their feelings and the causes and consequences of them, without engaging in active problem solving. A long standing standard diagnostic manual DSM-IV (American Psychiatric Association, 2000) flags
rumination as a frequent response to negative moods, and a significant cognitive feature of major depressive disorder. The occurrence of ruminative and intrusive thoughts is widespread, and not just restricted to diagnosable psychological problems; they are frequently present in 80 to 99% of all people (Fisher & Wells, 2010). In non-clinical populations, Purdon and Clark (1993) and Belloch, Morillo, Lucero, Cabedo, and Carrió (2004) found that 99% of their samples (N = 293, N = 336 respectively) reported experiencing at least one of the obsession-like intrusive thought listed in the in Obsessive Intrusions Inventory.

According to Siegle, Moore and Thase (2004, p. 645) rumination may “construed loosely as experiencing repetitive, intrusive, negative cognitions, has been associated with elevated and prolonged sad mood (e.g. Nolen-Hoeksema, Morrow, & Fredrickson, 1993), vulnerability to and maintenance of depression (Just & Alloy, 1997), and meta-cognitive aspects of depression (Papageorgiou & Wells, 1999), as well as negative health outcomes such as delayed recovery from coronary incidents (Fritz, 1999). They point out that many definitions of rumination have been offered (e.g., Alloy, Abramson, Metalsky, & Hartlage, 1988; Ingram, 1984; Martin & Tesser, 1989; Nolen-Hoeksema, Morrow, & Fredrickson 1993; Philippot & Rime, 1998; Teasdale & Barnard, 1993; Wells & Matthews, 1994). Siegle, Moore and Thase say that these definitions may refer to a single construct, hence the decision here to name them collectively as RATs. Measures reflecting differing definitions of rumination, as might be expected, differ considerably in their form and structure. Nominally they assess varieties of thought, but there is probably some utility in using a variety of measures when exploring rumination. Siegle, Moore and Thase's conclusion comes from their own work. This looked at convergence and divergence amongst self-report measures of rumination in 349 non-clinical undergraduates, 59 depressed adults and 15 adults with the medical condition Systemic Lupus Erythematosis. The results suggest that there are indeed separate constructs that can be labelled rumination, and these had different relationships to depression. However, aggregate measures appeared to index a central construct. Individuals with depression ruminated more across measures than individuals with the medical condition, who ruminated more than “healthy
individuals”. The factor that mediated this was dysphoria, a tendency towards depression.

A fundamental criterion of Generalised Anxiety Disorder is worry (American Psychiatric Association, 2000). Worry is postulated to contribute to anxiety due to its verbal, abstract and arousal reducing way of trying to deal with the outcome of unknown future events, and potential threats. As cognitive process, rumination and worry are often elaborated into repetitive chains of thoughts, often in the form of loops. The link between depression (dysphoria) and rumination is possibly stronger than its link with anxiety. Rumination is significantly associated with vulnerability to depressed mood as well as symptoms and trait markers of depression. This association marks onsets of episodes of major depression or more severity in depression (Nolen-Hoeksema, 2010; Spasojevic, Alloy, Abramson, MacCoon, & Robinson, 2004). The evidence for the relationship between rumination, worry, intolerance of uncertainty and meta-cognitive beliefs is reviewed extensively by de Jong-Meyer, Beck, and Riede (2009). The conclusions they reach are that meta-cognitions, ruminations and worry are potentially indicators and components of anxiety and depression. Longitudinal studies, (for example by Just & Alloy 1997; Nolen-Hoeksema et al. 1993, 1994; Nolen-Hoeksema 2000; Nolen-Hoeksema, Wisco & Lyubomirsky 2008; Schwartz and Koenig 1996; Spasojevic & Alloy 2002;) show rumination is consistently associated increased risk of developing depression. A large-scale (N>1100) study by Nolen-Hoeksema, (2000) found that rumination predicts depression severity in clinically depressed participants. Participants with high ruminative responses (as measured by the Ruminative Responses Scale, Nolen-Hoeksema, 1991) predicted depression severity one year later (as measured by the Beck Depression Inventory BDI, Beck et al., 1961). With non-depressed participants, ruminative response scores predicted level of depression.

When participants were induced to ruminate in laboratory conditions, participants with dysphoria experienced worsening or maintenance of negative mood, impairment of problem solving, inhibited behaviours, and increase in frequency, intensity and duration of negative thinking, and increased recall of negative memories. Non-dysphoric participants did not show these negative
features when induced to ruminate. This difference was reflected in similar differences between clinically depressed versus non–depressed participants (Donaldson, Lam & Mathews 2007, Lavender & Watkins 2004, Watkins & Teasdale, 2001). A conclusion from the above findings is that underlying depressed mood is a stable underlying mechanism of rumination. Further, that intervention should target changing ruminative thinking processes over and above targeting dysfunctional attitudes and schemas in the prevention and treatment of dysphoria, anxiety and depression.

Ruminative thinking styles (RATs) are stable trait like tendencies or mechanisms with respect to the development of dysfunctional attitudes due to sustained negative mood states, negative attentional biases and increased vulnerability to depression. This stable nature means that as a response mechanism, it extends beyond depressogenic episodes. Self-focused repetitive automatic thoughts about the causes, origin, and possible consequences of depressive states and stressful life events are the marker of a ruminative thinking style. These conclusions about the state like nature of rumination are summarised in a review by Smith and Alloy (2009). Such conclusions highlight the potential desirability of specifically targeting a reduction in rumination as a preventive measure to promote well being, as well as a treatment to reduce maintaining factors of depression. Clark and Rhyno (2005) and Papageorgiou and Wells, (2003) are forthright in their views that three decades of empirical research make it abundantly clear that non-clinical individuals experience similar unwanted mental intrusions that are similar in form and content to the problematic intrusions that manifest themselves in clinical states. A direct comparison of non-clinical and obsessive compulsive patients was conducted by Morillo, Belloch, and García-Soriano (2007). They found that the obsessive group reported significantly higher incidence of intrusive thoughts (RATs). Further analysis showed that this was due to re-experiencing intrusions rather than being subjected to a greater variety of them. This conclusion flags the importance looking at both the regularity of RATs, the subjective experience of them, and the frequent involvement of RATs in a continuum of severity.

The average duration for specific thought content was determined to be 5 seconds by Klinger (1978, 2009). In the course of a 16-hour day, and individual
might experience about 4,000 distinct thoughts. From this volume of thoughts, it is unsurprising that a proportion of thoughts will be unwanted ones that disrupt performance and commandeer attention. Participants carried a recording device throughout the day during the experimental period in an attempt to measure thoughts. Each thought occurrence was rated on 23 different dimensions. In the first study the participants (undergraduate students, n = 12) produced 285 thought samples over a 24 day sampling process. The second, larger study (undergraduate students, n = 29) an average 1,425 thoughts were produced over a 7-day period. Klinger's thought measures were closely related to the concept of RATs described above. In the first study, 27% of thoughts (outside the laboratory) were respondent, and in the second they reported that 31% of the thoughts were mostly or entirely undirected. A further finding was that 22% of the thoughts were classified by the participants as distorted or somewhat strange. Klinger and Cox (1987–1988) also later found 13% of thoughts that were ‘out of character,’ in gross disregard of others’ expectations, or downright shocking” (p.124). In nature, these unwanted intrusive thoughts were very similar to the obsession relevant thoughts that Rachman (2003) and colleagues identified in non-clinical sampling whilst also looking at treatment for obsessive-compulsive thoughts in clinical samples. As previously mentioned, in order to try and capture the essence of ruminative and intrusive thoughts, the author started to use the newly devised term RATs. The description had utility with clients in that rumination patterns have been frequently described (by more than 27) of the authors’ clients. The clients either directly referred to, or acknowledged during therapy, that experiencing these repetitive cognitions was like being a rat/mouse/hamster/gerbil in an exercise wheel that could not be escaped from. This anecdotal data came from supervision-based reviews of client notes over the last 5 years.

2.4 Meta-cognitions, ruminations and some tactics to alter them

Meta-cognitions be defined as “stable knowledge or beliefs about one’s own cognitive system, and knowledge about factors that effect the functioning of the system; the regulation and awareness of the current state of cognition, and appraisal of the significance of thought and memories” (Wells, 1995, p. 302).
Meta-cognition is a term that describes higher level thinking that performs elevated levels of control, monitoring and appraisal. Meta-cognitions act on the products and processes of conscious awareness. Papageorgiou & Wells, (2001) state that “Meta-cognitions refer to beliefs and appraisals about one’s thinking and the ability to monitor and regulate cognition” (p. 160). Work mainly around meta-cognitions built into a system of therapy, Metacognitive Therapy (Wells & Mathews 1994) with its own techniques and eventually establishment of a Metacognitive Therapy Institute.

Meta-cognitions are inextricably linked to RATs, and may be part of a system of cognitions in general. The central theme to meta-cognitive theory is that dysfunctional beliefs about cognitions are implicated in psychological disorders; they form the basis for development and maintenance of problems addressed in therapy. The theoretical basis is that if one develops beliefs about sustained thinking and the uncontrollable nature and danger of thoughts, that this process leads to patterns of thinking over-permeated by rumination, counterproductive attempts at control, worry and fixation (Wells, 2008; Wells & Matthews, 1994). Therefore RATs/meta-cognitions could be pre-cursors to the development of anxiety-based disorders.

Two typologies of meta-cognition are described by Brown (1987): - knowledge about cognitions and regulation of cognitions (evaluation, monitoring and regulation of cognitions). This study examines both aspects of meta-cognitions, and does not differentiate between them, opting to use the term RATs. Ordinary cognitions can be likened to an orchestra with many players and a variety of instruments, a meta-cognition is akin to the conductor and score behind thinking (Scragg, 2010). The term RATs covers the players, the score and conductor, as they are all relevant to the “music,” which in this case is unpleasant in nature. Clients in therapy appeared to find the terms meta-cognition and ruminative and intrusive thoughts difficult to utilise effectively; as previously discussed, the author developed the easily memorable acronym RATs to encompass the wider selection. A hierarchical system of negative automatic thoughts, dysfunctional assumptions and core beliefs is well established in CBT in general, (e.g. Beck, Rush, Shaw, & Emery, 1979), and the utility of attacking them individually or sequentially has been put into question (Longmore and Worrell, 2007). The
above factors aided the decision to use the term RATs to cover all three classes of cognitive process. There is no published research that examines the role of individual differences in meta-cognition moderating relationships between measures of negative emotion and perceived stress.

Linked to Papageorgiou and Wells 2001 findings that meta-cognitions refer to beliefs and appraisals about one’s thinking and the ability to monitor and regulate cognition, was work that looked at control tactics such as suppression. Meta-cognitions are often developed when people fail in attempts to control thoughts (Kelly & Kahn, 1994; Wegner & Pennebaker, 1993). Thought suppression is a tactic where there are deliberate attempts not to think about specific thoughts by diverting attention to another area (Wells & Davies 1994). The common and widespread nature of unwanted thoughts has been discussed previously. Structured and formal investigations into its effects started in the late 1980's. Mainly laboratory experiments where participants where requested to suppress cognitions, even those about trivial non-disturbing topics like a white bear, resulted in a surge of cognitions related to the suppressed topic (reviewed by Wegner, 2011). These investigations came to be quite widely known in psychological circles as the white bear experiments. Perhaps the most important point to emerge from this work is that suppression caused increases in negative personally salient cognitions. The surges occurred after participants were asked to think freely after the suppression. Thought suppression was a spontaneous tactic widely used by participants, and forms part of the basis for the inclusion of the thought suppression condition in the current research. The experience of this rebounding effect caused the appearance of sets of negative meta-cognitions about participant’s ability to control thoughts. This rebound effect was followed by increases in reports of feeling out of control and being distressed by one’s thoughts (e.g. Mitchell et al. 2007, Wegner, 2011, Wegner & Schneider 2003).

Thought replacement (replacing an obsessional or RAT thought with a neutral one) and distraction (distract from them by thinking of something positive) had been thought to be beneficial when compared to controls (e.g. Conway, Howell and Giannopolous, 1991; Wegner, Schneider, Carter & White, 1987; Wenzlaff, Wegner & Roper, 1988). Thought replacement was believed to be effective due
to directly limiting the number of stimuli available for use in replacing a thought (Wegner et al., 1987). Distraction with thoughts of opposite valence (positive thinking) was believed to help thought control, because thoughts relevant to the target thought were less likely to be cued (Conway et al., 1991; Wenzlaff et al., 1988). The previously believed effects were however short-lived, as there was no opportunity for new learning, so the patterns of rumination are readily repeated and the strategies do not lead to stable shifts in attention (Watson & Purdon 2007). Watson and Purdon did not however, identify that distraction might be successful in the long term due to habituation effects (Bouton, 2007) feeding the need to seek ever new distractions, and a reduction in neural responding to thought replacement, as a function of the time and number of uses progressed. Despite this oversight, Watson and Purdon hypothesised that Attention Training Technique (ATT), a specific technique of Metacognitive Therapy, would be superior to thought replacement and distraction. The 12-minute, three-phased ATT technique involves actively listening and focusing attention to simultaneous sounds offered at different loudness and spatial locations. Phase one involves focusing on individual sounds and locations (selective attention). Attention is rapidly switched in the second phase between sounds and spatial locations (switching of attention). The brief third phase involves attempting to attend simultaneously to as many sounds and locations as possible (dividing attention). The first two phases are similar to the VTDT protocol in switching attention between gibberish and another activity of deliberately targeting RATs. The crucial difference is that in ATT the metacognition (RAT) is not specifically targeted. In ATT it was hypothesised that disruption of a mechanism of cognitive attention (cognitive attentional syndrome) by ATT decreases meta-cognitions (RATs) in measures of their numbers, and aversion to them. They did find this to be the case and Watson and Purdon further hypothesised that the beneficial results were attributable to new learning that occurred through the use of ATT. Such benefits do not accrue, they say, from the use of thought replacement or distraction. The mechanism of the new learning apparently initiated by the ATT is not specified beyond reference to a largely theoretical construct, the cognitive attentional syndrome.
2.5 Eye Movement Desensitisation Reprocessing

This initially unlikely sounding treatment involves a client bilaterally tracking a visual target across their field of view, whilst re-visiting traumatic material. The tracked target is often the fingers of the therapist, or a dot on a computer screen. Alternating horizontal left and right (again bilateral) auditory or tactile (sensory) targets can also be used. The traumatic or disturbing material may be in the form of thoughts (especially RATs), visual images, sensory or body based memories. The therapy was developed in 1987 by Shapiro, and is summarised in a widely used standard text (Shapiro, 2001). The use of eye movements as a treatment for Post-Traumatic Stress Disorder is now so well established, that it receives endorsement from NICE (2005), though it works for other conditions (e.g. stuttering, Siddiqui, 2009). The EMDR treatment process has eight phases, that are to be adhered to strictly. This adherence is closely monitored in supervision. Phase 1 is history taking, phase 2 is teaching of emotional containment techniques, phase 3 to 6 are targeting a specific problem (e.g. traumatic memory or intrusive cognitions) and desensitisation occurs through the use of bilateral stimulation. This phase alternates between accessing the target and conducting bilateral stimulation. This is similar to the phased structure of the VTDT protocol. Body scans are conducted to sense somatic manifestations of the target material, and to monitor progress of the desensitisation). Phase 7 is closure and log keeping instructions with a review of phase 2 techniques, and phase 8 is examination of the process so far and targeting new related or apparently unrelated material for further work.

Gunter and Bodner (2008) investigated three possible explanations to account for the working of EMDR. These were the investigatory-reflex, the increased inter-hemispheric communication and the working memory account. Theirs first experiment was into an investigatory-reflex account where the eye movements activated an innate reflex that inhibited fear and promoted relaxation. Comparison of arousal levels between participants staring straight ahead and using bilateral eye movements showed that arousal was higher in
the bilateral condition, if this explanation of EMDR was correct, it should have been lower. The second experiment looked the effect of horizontal and vertical eye movements on the vividness and emotionality of participant’s memories. The inter-hemispheric communication hypothesis postulates that horizontal eye movements help the more rational left hemisphere process traumatic materials. However both vertical and horizontal eye movements reduced the vividness and emotionality of memories; if the hypothesis was correct, only the horizontal movements should work due to brain lateralisation. The third investigation compared horizontal eye movements with a simple hearing task. The working memory account hypothesised that the eye movements work by taxing the visuo-spatial scratch pad of working memory that is part of the executive central control of working memory. Taxing the visual part through eye movements facilitates processing emotional memories by reducing resources available to the emotional content. Both sounds and eye movements worked to reduce vividness, so it is not the eye movements per se that worked, rather the taxing of the central executive function which facilitates new adaptive information processing routines. Holding something traumatic or problematic in mind is made more palatable by attentional resources being taxed. So conducting a concurrent or near concurrent task, eye movements or another distraction (sounds with Gunter & Bodner) whilst holding something unpleasant in close proximity, allows more and better exposure to the troublesome target. This occurs without resources (working memory) being swamped and initiating avoidance behaviours, because some of the memory resources are being used on the task. This process facilitates exposure, which increases coping over time by new adaptive information processing. This might provide a possible explanation for the mechanism of VTDT, with the gibberish taking up working memory resources, whilst alternating, in close proximity, exposure to RATs. Though it has not been explicitly postulated, EMDR, VTDT and Metacognitive Therapy may have a common underlying mechanism, specifically that of desensitization via habituation of responding (see Exposure Response Prevention below).
2.6 Exposure Response Prevention

This technique is used to desensitise clients to things that cause them fear, e.g. spiders, open places, traumatic thoughts and images. If a person stays with a stressful stimulus for a period of time (exposure), resisting the temptation to move away or negate (neutralise) the stimuli, the negative effect of the stimuli will subside. It is recognised by NICE (2006) as preferred treatment for obsessive-compulsive disorder, a condition where RATs are central. The procedure is systematic, and is coupled with anxiety reduction techniques, e.g. controlled breathing. Associative and consequential conditioning responses are manipulated to the benefit of the client (Twohig, Whittal, Cox & Gunter, 2010).

Classical "Pavlovian" Conditioning is the type of learning made famous by Pavlov's experiments with dogs. Pavlov (1927/1960) presented dogs with food, and measured their salivary response (how much they drooled). Then he began ringing a bell just before presenting the food. At first, the dogs did not begin salivating until the food was presented. After a while, however, the dogs began to salivate when the sound of the bell was presented. They learned to associate the sound of the bell with the presentation of the food. As far as their immediate physiological responses were concerned, the sound of the bell became equivalent to the presentation of the food. It is a learned association, and can happen in real life circumstances, for example something bad, or perceived as bad, occurring in a supermarket. An unconditioned stimulus such as crushing (or impingement of personal space or abrupt physical contact) gives an unconditioned response of anxiety and increase in heart rate. An actual physical presence in a supermarket can become a conditioned stimulus on repeated (conditioning trials) of a presence in the supermarket, plus crushing crowds, or (false) perception of danger. The mere presence in the supermarket is learned by association to initiate anxiety. Absence of crowds will lead to extinction, and return to normal functioning, unless negative cognitions reinforce the maladaptive behaviour (Miltenberger, 2012, Myers & Davis 2007). Language or sounds can become conditioned stimuli, as anyone who owns a dog and calls out "walkies" can attest. Operant (consequential) conditioning is the type of
learning that occurs where behavioural changes results as a consequence of something that happens (possibly an earlier learned associated conditioning. Operant conditioning forms an association between behaviour and a consequence. (It is also called response-stimulus or RS conditioning because it forms an association between the person’s response behaviour and the stimulus that follows i.e. the consequence). In operant conditioning, a behaviour (e.g. removing yourself from a supermarket) “operates” on the environment, and a result is produced e.g. a reduction in anxiety. This reduction in anxiety acts as reinforcement, and therefore increases the likelihood of this type of behaviour (e.g. avoiding other supermarkets and similar situations) occurring again.

Extinction of the operant avoidance behaviour can only occur by new learning via exposure (preferably in vivo), staying in the situation until discomfort subsides (Myers & Davis, 2007). This operation of the above type of scenario is described as the approach response versus avoidance response (Dymond & Roche, 2009), and it is particularly applicable to cases of anxiety.

As briefly outlined earlier, the process of extinction underlies the treatment of phobias and obsessive-compulsive disorder; the process is known as exposure response prevention (ERP). After a period of psycho-education, a client would be invited to take part in a behavioural experiment. The client would deliberately expose themselves to unpleasant or feared stimuli, for example a spider, a place, a memory or a thought. They would stay in the presence of the stimuli until the negative response subsided to more acceptable levels. Sometimes gradually by a process of hierarchical graded exposure, the level of tolerance is built up (Huppert & Roth 2003), but exposure may be sudden also (flooding). This process has been used for obsessive thoughts (a severe form of RATs) by extinction (Clark & Rhyno 2005). However exposure to obsessive thoughts hierarchically is often not practical. In this study, exposure to RATs (of a non-clinical nature) is frequent, but not hierarchical. The process of ERP could potentially be a lowest common denominator for EMDR, Metacognitive Therapy and VTDT, Relational Frame Theory (RFT) and an ACT component called cognitive defusion. The latter two items are reviewed below, as they are relevant to the VTDT process.
2.7 Relational Frame Theory

The central assumption of RFT is that humans learn to relate stimuli that do not share formal properties, that we can relate stimuli under arbitrary contextual control. The operating mechanism of this is higher level, verbally based operant or consequential conditioning, learnt through repeated learning trials. The mechanics of this are briefly described above in the context of exposure response prevention. The main underlying theoretical framework of ACT became RFT (Hayes, Barnes-Holmes, & Roche, 2001). A dog can be trained to get excited by a word and exhibit a physiological response e.g. salivation. Saying a previously neutral word such as “biscuit” consistently for a time, prior to giving a dog food, causes the dog to be excited by the word. This is Pavlovian associative conditioning. What happens over several learning trials, if we give the dog food and, say the word “biscuit” after it has finished eating? Does the dog get excited and salivate when it hears the word “biscuit?” It does not. Animals easily learn about stimuli (events) that precede (predict) the onset of something that is psychologically important. If a child is given a biscuit, and after it has been consumed, the word “biscuit” is said, and this is repeated? What happens if sometime later we shouted the word “biscuit” from a next-door room? There is a high probability that the child would come running in from the other room, anticipating a treat. The difference between this and the dog example above is that humans that are verbally capable. Neutral events (such as words) that follow important events (such as food), are not learned (Hall, 1996) unless language is capable of being utilised. In humans there is a bi-directional relation between the stimuli. The physical biscuit and the word “biscuit” can equally stand for each other. This type of relationship makes it the one the most important defining features of human cognition and language. This feature enables humans to evolve complex networks of related events. If the child in the above example is told that another word for “biscuit” is “cookie,” when they hear the word “cookie” they will probably or potentially think of the word “biscuit” as well as an actual physical biscuit. This is despite the fact that there has been no actual direct association between a real biscuit and the word
“cookie”. This is a relational network, and complex ones can be taught to quite young children (Egan & Barnes-Holmes, 2011). There is an equivalence relation between a real biscuit, the word “biscuit” and the word “cookie”. This equivalence is extended to include contextual cues, not directly related to the formal properties of an object (e.g. the actual biscuit) or a state (e.g. anxiety). This relational frame can have negative consequential results. The language and cognition differences between animals and humans shows that RFT does not accord with the continuity hypothesis of Skinner and Watson (see Lenneberg, 1967 for a review of the biological bases of language) that learning principles in animals were presumed to hold for humans as well. All humans’ use derived relational responding. An example may make this clearer. If a child goes on a “boat” and experiences an awful bout of seasickness, the word “boat” can become aversive due to Pavlovian conditioning. The child may subsequently learn at school that “car ferry” is a type of boat. If the child hears that they are going on a trip on a car ferry, the child may show signs of anxiety despite having had no direct experience of car ferries. The child does not need to experience potentially aversive consequences of travelling in rough sea conditions on a car ferry in order to experience signs of anticipatory anxiety. The RFT account of language forms the basis of the six constituent elements of Acceptance and Commitment Therapy hexaflex, cognitive defusion, acceptance, contact with the present moment, observing self/self as context, valued goals and committed action towards those goals. These are discussed more fully later. The vagaries of language could be implicated particularly in cognitive fusion through negatively valenced relational frames, manifested as RATs. Therefore RATs and thought suppression could be examples of the negative, potentially iatrogenic effects of language. This is reviewed below in the context the overarching framework of Acceptance and Commitment Therapy, particularly with respect to cognitive defusion.

2.8 Acceptance and Commitment Therapy (ACT) and cognitive defusion

ACT is a third-wave cognitive behaviour therapy, developed by Hayes, Strosahl, and Wilson, (1999). The ethos behind ACT is Accept your reactions and be present, Choose a valued direction, and Take action. The target of ACT is
psychological flexibility, which is cultivated by means of developing contact with the present moment whatever that might be (negative or positive) and continuing with behaviours that are in accordance with personal values. ACT was developed as a radical alternative to mainstream psychotherapy approaches i.e. traditional forms of CBT as exemplified by Beck, Rush, Shaw and Emery, (1979) and Ellis (1962/1994). It was a deliberate break from the philosophy of mechanism that underscored these traditional approaches. Mechanistic models of psychotherapy view the mind almost as if it were a machine made up of separate parts. Thoughts, feelings and behaviours that were problematic were conceptualised as faulty parts or structures to be “cognitively re-structured” from irrational to rational. There are pathological categorisations of “dysfunctional” and “maladaptive” thoughts, feelings, urges, memories, or schemas. The direct reduction, replacement of content, or removal of these is the object of these mainstream therapies and according to the National Institute for Health and Clinical Excellence (NICE, 2010); they do appear to work if one accepts the findings of NICE. With ACT, the aim is to help alter the relationship to thoughts and feelings so they are no longer contextualised as “symptoms”. This reduces the often-disastrous struggles with symptoms. Conceptually this is a fundamentally different starting point from preceding CBTs. Suffering will always occur as part of living, and the primary purpose of ACT is to embrace necessary suffering in order to increase the ability to participate in valued living (Hayes, Strosahl & Wilson, 2011), this has the effect of increasing psychological flexibility. ACT is conceptualised by use of a classification called the hexaflex. This comprises of cognitive defusion, acceptance, contact with the present moment, observing the self, values, and committed action.

1. Cognitive defusion is learning to perceive thoughts, images, emotions, and memories as what they are, not what they appear to be. Looking at your thoughts rather than from your thoughts. Most people are fused with all of their thoughts, which causes psychological inflexibility.

2. Acceptance: Allowing thoughts, feelings, bodily sensations to come and go without struggling with them. Trying too hard to control how we feel and think is counterproductive to psychological flexibility.
3. Contact with the present moment: Awareness of the here and now, experienced with openness, interest, and receptiveness.

4. Observing the self: Accessing a transcendent sense of self, a continuity of consciousness, which is unchanging. A way of achieving this is through developing detached mindfulness, thereby putting “self” into context.

5. Values: Discovering what is most important to one's true self. Man's search for meaning.

6. Committed action: Setting goals according to values and carrying them out responsibly. When you have set goals, what tasks can be set and methods used to achieve them? SMART goals (specific, measurable, achievable, realistic, time limited).

ACT sees the technique of cognitive defusion as a major distinguishing component and feature that separates it and the so-called second-wave cognitive behavioural therapies (Hayes, 2004, Flaxman, Blackledge & Bond 2011). It relies on the modification of cognitive events in their function, rather than content and frequency. Therefore the second-wave CBT protocol of altering content of thoughts (i.e. cognitive restructuring) does not need to take place in order to achieve therapeutic effects. The whole basis of cognitive defusion lies in the previously considered RFT. However its origin lies in critiques and reinterpretations of the cognitive therapy approaches of Beck (Beck, Rush, Shaw, & Emery, 1979) and Ellis (1962/1994) made by Zettle & Hayes, (1982). Beck in particular pointed to the need for clients to “distance” themselves from certain beliefs, but in practice this was done by content alteration by means of a logical-deductive disputing process, involving tactics like examining the evidence in support of a thought. Zettle and Hayes reintroduced the distancing aspect of treatment by allowing verbal rules and statements (embedded in RFT) to be viewed as behaviours in an organism. They state “distancing allows self-rules to be viewed as behaviour of an organism – not as literal reality or as the organism itself” (p. 107). This extension and expansion of distancing was given centrality by calling the technique “comprehensive distancing.” This was a conceptual and practical break from the second-wave CBT’s, and re-introduced a behavioural emphasis,
as previously indicated by Skinner’s (1957) and Sundberg and Michael’s (2001), treatment of verbal behaviour. Thinking is regarded as a behaviour that is not excluded from a controlling behaviour-to-behaviour relationship with other actions. Zettle (2005, p. 78) states, “Thinking, believing, and related cognitive phenomena were regarded as mere behaviour that was not accorded any causal status because of its private nature.” Therefore certain cognitions were accessible to prediction and control, as is the case postulated by VTDT.

Several factors differentiate comprehensive distancing from cognitive defusion. The main ones are the incorporation of enhancing a transcendent sense of self (Hayes, 1984) appear in a paper entitled, “Making Sense of Spirituality,” also clarification and identification of client values (Zettle, 2007). The addition of these two factors is a pre-cursor to the development further of four other individually identifiable hexaflex components (as described above), making the up the six in total. These factors are seen important in extending ACT psychotherapy beyond a potentially bland mechanistic collection of techniques, towards an integrated, coherent approach that can readily exist within a humanistic practice framework. This is one of the reasons that the one word defusion work of Titchener (1910) and Masuda (2004, 2009, 2010) may be flawed due to oversimplification and potential lack of relevance /salience.

Cognitive fusion is the process through which verbal events exert strong stimulus control over responding, to the exclusion of other contextual variables, leaving direct experiences to play out diminished roles (Hayes, Strosahl & Wilson, 2011). Cognitive fusion is not helpful where a person becomes enmeshed and entrapped by cognitions that are negatively self-referential, or non-functional, such as “I am not clever enough to understand this,” or “what if I attacked my partner uncontrollably?” Taking these thoughts as literal, and/or where behavioural regulation (e.g. avoidance or procrastination) leads to increases in personal distress and does not aid in moving towards valued goals, is a problem area. Cognitive fusion of this negative type also makes self-acceptance difficult, makes contact with the present moment harder, and as Kabat-Zinn and Hanh (2013) point out, the present is only moment we have. A transcendent sense of self (detached mindfulness) that would insulate from negative life events is harder to achieve with negative cognitive fusion.
Cognitive defusion as an element of ACT was the first component of the hexaflex to be elaborated.

A very widely used manual to carry out ACT cognitive defusion techniques is provided by Harris (2009). In it he describes cognitive defusion techniques in an accessible manner. However, a much more comprehensive list is provided by Gifford, Hayes and Stroshal (2008) and it appears in Table 1 below. The common factor in all these techniques is the distancing and desensitisation to the effects of cognitions targeted. The use of gibberish is not listed, but the technique could involve distancing and desensitisation, so it might be added to the list at some point in the future. The list puts into context that the VTDT technique might not be quite as outlandish as might initially appear to be the case, when compared to established forms of defusion such as saying the thought in a silly voice (e.g. a cartoon character), singing the thought out loud or taking your mind for a walk.
<table>
<thead>
<tr>
<th></th>
<th>Cognitive defusion techniques from Gifford, Hayes and Stroshal (2008)</th>
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<tbody>
<tr>
<td>1.</td>
<td>‘The Mind’</td>
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<tr>
<td>2.</td>
<td>Mental appreciation</td>
</tr>
<tr>
<td>3.</td>
<td>Cubbyholing</td>
</tr>
<tr>
<td>4.</td>
<td>“I’m having the thought that …”</td>
</tr>
<tr>
<td>5.</td>
<td>Commitment to openness</td>
</tr>
<tr>
<td>6.</td>
<td>Just noticing</td>
</tr>
<tr>
<td>7.</td>
<td>“Buying” thoughts</td>
</tr>
<tr>
<td>8.</td>
<td>Titchener’s repetition</td>
</tr>
<tr>
<td>9.</td>
<td>Physicalizing</td>
</tr>
<tr>
<td>10.</td>
<td>Put them out there</td>
</tr>
<tr>
<td>11.</td>
<td>Open mindfulness</td>
</tr>
<tr>
<td>12.</td>
<td>Focused mindfulness</td>
</tr>
<tr>
<td>13.</td>
<td>Sound it out</td>
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<tr>
<td>14.</td>
<td>Sing it out</td>
</tr>
<tr>
<td>15.</td>
<td>Silly voices</td>
</tr>
<tr>
<td>16.</td>
<td>Experiential seeking</td>
</tr>
<tr>
<td>17.</td>
<td>Polarities</td>
</tr>
<tr>
<td>18.</td>
<td>Arrogance of word</td>
</tr>
<tr>
<td>19.</td>
<td>Think the opposite</td>
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<tr>
<td>20.</td>
<td>Your mind is not your friend</td>
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<tr>
<td>21.</td>
<td>Who would be made wrong by that?</td>
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<tr>
<td>22.</td>
<td>Strange loops</td>
</tr>
<tr>
<td>23.</td>
<td>Thoughts are not causes</td>
</tr>
<tr>
<td>24.</td>
<td>Choose being right or choose being alive</td>
</tr>
<tr>
<td>25.</td>
<td>There are four people in here</td>
</tr>
<tr>
<td>26.</td>
<td>Monsters on the bus</td>
</tr>
<tr>
<td>27. Feed the tiger</td>
<td>Like feeding a tiger, you strengthen the impact of thoughts but dealing with them</td>
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<td>-------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>28. Who is in charge here?</td>
<td>Treat thoughts as bullies; use colorful language</td>
</tr>
<tr>
<td>29. Carrying around a dead person</td>
<td>Treat conceptualized history as rotting meat</td>
</tr>
<tr>
<td>30. Take your mind for a walk</td>
<td>Walk behind the client chattering mind talk while they choose where to walk</td>
</tr>
<tr>
<td>31. How old is this? Is this just like you?</td>
<td>Step out of content and ask these questions</td>
</tr>
<tr>
<td>32. And what is that in the service of?</td>
<td>Step out of content and ask this question</td>
</tr>
<tr>
<td>33. OK, you are right. Now what?</td>
<td>Take “right” as a given and focus on action</td>
</tr>
<tr>
<td>34. Mary had a little …</td>
<td>Say a common phrase and leave out the last word; link to automaticity of thoughts the client is struggling with</td>
</tr>
<tr>
<td>35. Get off your buts</td>
<td>Replace virtually all self-referential uses of “but” with “and”</td>
</tr>
<tr>
<td>36. What are the numbers?</td>
<td>Teach a simple sequence of numbers and then harass the client regarding the arbitrariness and yet permanence of this mental event</td>
</tr>
<tr>
<td>37. Why, why, why?</td>
<td>Show the shallowness of causal explanations by repeatedly asking “why”</td>
</tr>
<tr>
<td>38. Create a new story</td>
<td>Write down the normal story, then repeatedly integrate those facts into other stories</td>
</tr>
<tr>
<td>39. Find a free thought</td>
<td>Ask client to find a free thought, unconnected to anything</td>
</tr>
<tr>
<td>40. Do not think “x”</td>
<td>Specify a thought not to think and notice that you do</td>
</tr>
<tr>
<td>41. Find something that can’t be evaluated</td>
<td>Look around the room and notice that every single thing can be evaluated negatively</td>
</tr>
<tr>
<td>42. Flip cards</td>
<td>Write difficult thoughts on 3 x 5 cards; flip them on the client’s lap vs. keep them off</td>
</tr>
<tr>
<td>43. Carry cards</td>
<td>Write difficult thoughts on 3 x 5 cards and carry them with you</td>
</tr>
<tr>
<td>44. Carry your keys</td>
<td>Assign difficult thoughts and experiences to the client’s keys. Ask the client to think the thought as a thought each time the keys are handled, and then carry them from there</td>
</tr>
</tbody>
</table>

The eighth on the list in Table 1 is a word repetition technique described over a hundred years ago by Titchener (1910). He asked participants to repeat the word “milk” for a short period of time. The word begins to lose its meaning and becomes de-literalised; just a sound. It resembles VTDT in that there is focus on the word, even though the word in this case was not originally emotionally laden. The focus in VTDT is interspersed with the gibberish. Masuda et al.
(2004) found that this repetition technique worked when a negative self-referential thought (e.g. “My life is pointless” was given a one word representation “pointless.” These thoughts and their one word representation are in fact RATs. With non-clinical undergraduates this technique reduces impact of the thought after 30 seconds of repetition. This cognitive defusion technique was compared to what turned out to be a much less effective distraction-based control condition (reading an article on Japan). The dependent variables were reductions in emotional discomfort, and the believability of the RATs. A further study by Masuda et al., (2009) looked at if the duration of thought repetition had an effect on the impact of the technique. Reduction of emotional discomfort was found to bottom out after 3 to 10 seconds of rapid repetition, and the desirable effect of decrease in believability of the RATs was maximised after 20 to 30 seconds. This suggests that experiential exercise of repeating thoughts is helpful in reducing the function of RATs in these two distinct areas.

The most common control based strategies were found to be thought suppression, distraction and avoidance (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). These strategies targeted the form and frequency of the RATs, and the review found that those strategies may be ineffective and therefore potentially paradoxical (Eifert & Heffner, 2003; Gutiérrez, Luciano, Rodríguez, & Fink, 2004). The negative effects of thought suppression has been demonstrated through, for example the work of Feldner, Zvolensky, Eifert, & Spira, (2003); Levitt, Brown, Orsillo, & Barlow, (2004); Marcks & Woods, (2007). Marcks and Woods instructed participants to suppress personally relevant intrusive thoughts. They found this very difficult to do, and they reported increased distress after the attempts at thought suppression. These findings underlie the aims of ACT to get participants to enhance cognitive defusion as opposed to using control-based strategies. Some focused studies have been conducted by, for example, Healy et al., (2008); Masuda, Hayes, Sackett, & Twohig, (2004); Masuda et al., 2009) looking at the effects of cognitive defusion techniques (as outlined in Table 1 above) on negative self-referential thoughts. Healy et al. investigated one of the defusion technique number 4 in Table 1 “I am having the thought that....” When
a negative self-referential thought such as “my life is pointless” is defused by getting participants to repeat “I am having the thought that my life is pointless” led to a reduction in emotional discomfort associated with that thought/statement, and also an increase in willingness to be exposed to these statements. This protocol used does appear to involve using an approach response leading to desensitisation.

Some problems with many studies into cognitive defusion are that frequently a one word thought representation is used. This might not be actually representative of the true salience of the RAT, and be restrictive in its scope. A notable exception is the Healy et al., (2008) study described above. This is why RATs elicited here in this study are not given one-word representations in order to increase ecological validity. A systematic review of cognitive defusion in general by Siddiqui (2013) casts some doubt as to the evidence base that supports cognitive defusion as an empirically validated technique. Filtration of the searches resulted in 8 studies being identified as fitting criteria for the review. From these, 4 main themes and 13 sub themes were extracted. The main factors stimuli (laboratory based), ecological, face validity (non-personally relevant stimuli) and type of participant (mainly students/psychology students) and methodical problems. The conclusion was that research purporting to support cognitive defusion appears to have systematic flaws. This leads to some doubt as to the empirical soundness of any conclusion that the technique has a firm evidence base. A mixed methods approach to the future study of cognitive defusion phenomena would appear to be a way to address these issues, as is attempted here. The role of cognitive defusion is of particular relevance to this study. The VTDT protocol is a phased way of attempting to change the relationship to RATs by approaching them to facilitate defusion by means of altering the relational frame in which the RATs reside. The underlying mechanism of this is possibly exposure response prevention. The exposure element is the act of deliberately accessing RATs, in other words an approach response. The response prevention element being the hindrance of the avoidance response, as normally occurs in thought suppression/distraction. The approach-avoidance is extensively reviewed, especially in respect of anxiety by Dymond and Roche (2014), but not in the specific application to language,
cognitive defusion, RFT or ACT. The literature review seems to place VTDT in the realms of cognitive defusion potentially occurring due to an approach response, and thought suppression potentially not working as a particularly effective distractor in terms of reducing the number and severity of RATs.

In this chapter the object of the research study, the technique of VTDT was reviewed in terms of CBT in general, and the 3rd wave CBT of ACT in particular. The technique was examined in the context of rumination, EMDR, exposure response prevention and relational frame theory as the underlying mechanism of ACT. The purpose of this is to place the new technique in existing psychological frameworks to provide the basis for consideration of the specific findings of the project.
3. METHODOLOGY
This section will examine the position of the study's methodology in counselling psychology, with a brief rationale for a mixed methods approach. The origin and structure of the multiphase nature of the study is then covered, with reference to previous uses of similar studies to investigate new therapeutic techniques.

3.1 Counselling psychology and mixed methods designs
Kaskett and Gil Rodriguez (2011) point out difficulties in attaining doctoral level research by extending the forefront of the discipline by being at the cutting edge of professional practice. The reasons for this are the debates and uncertainty centred around counselling psychology's identity, distinctiveness and contribution to research. They outline six traps in counselling psychology research, based on feedback from multiple Doctoral and Masters candidates over several years. One of these is the “methodology-without philosophy trap” (p.26) where the focus is on 'How do I do this' rather than 'Why am I doing it in this way?' The why in this project is an attempt at methodology that spans therapeutic counselling psychology practice with the scientist practitioner model Benjamin and Baker (2000).
Counselling psychology has “kinship” with clinical psychology according to Strawbridge and Woolfe (2010). Both are applied psychological disciplines with therapeutic intent, and a possible extreme interpretation of this is Kinderman's (2005) initiation of an advocacy for counselling psychology to be integrated into clinical psychology. There is an emphasis in both on psychological theory and research. Central to clinical psychology is the concept of the scientist practitioner. Benjamin and Baker (2000) reiterate and put into modern context, the recommendation originally made at the 1949 Boulder Conference, that clinical psychologists should be trained with an equal emphasis in research and practice. The scientist practitioner model is an attempt to incorporate an ethos of science and practice with client work. Shapiro (2002) reviewed the status of it. He states, “We must devote explicit attention to integrating science with practice both conceptually and operationally. This entails research that is based in clinically realistic settings” (p.233-234). There is strong attraction in
counselling psychology towards this practitioner-based model. The practitioner should be a producer as well user of knowledge and understanding in practice based settings. One of the issues for counselling psychology research is finding identity with translation into field applicable research that is personal, philosophical, political and pragmatic. This research has developed from the researchers and his clients’ therapeutic experiences with the technique of VTDT. Philosophically it fits in the counselling psychology scientist practitioner mould as per Strawbridge and Woolfe (2010), Benjamin and Baker, Shapiro (2000), and Kaskett and Gil Rodriguez (2011). Politically it attempts to span clinical and counselling psychology rifts by using methodologies and philosophical bases common to both. Pragmatically the design seems to fit comfortably to the research questions being asked, and the practical restrictions of scope of the study. This pragmatism element is also apparent in mixed methods structure of the study, as discussed below. Hanson et al. (2005) provide an overview of mixed methods procedures that can be separated by the data collection procedures and options. Collection of quantitative and qualitative data can be concurrent or sequential in implementation, with either equal or unequal priority given. Where quantitative data is collected first and given priority, the design is described as one that is sequential explanatory, whereas if the qualitative data is collected first, the design is sequential exploratory. Here the study builds on the previous scientist practitioner findings of the discovery, implementation and therapeutic application of VTDT structure as previously discussed in 1.3 above. Hanson et al. (2005) recommend that the theoretical lens that the study employs be explicitly stated, and following their guidelines, this study is post-positivist for practical as well as conceptual reasons, and prioritises quantitative followed by qualitative data.

The paradigm of positivism can be traced to the philosophical ideas of August Comte, who emphasised observation and reason as the means of understanding humans behaviours. True knowledge is based on the experience of senses, and can be obtained by observation and experimentation. This led positivistic thinkers to utilising the scientific method as a means of generating knowledge, and that human behaviours need to be understood within the
assumptions of the scientific framework. Cohen Manion, and Morrison, (2000) note these assumptions as determinism, empiricism, parsimony and generality. According to Cohen, determinism means that events are caused by other causal circumstances, and that causal links are needed to establish prediction and control. Empiricism means the collection of verifiable empirical evidences in support of hypotheses or theories. Parsimony refers to explanation of phenomena in as economical way as possible (e.g. applying Occam’s Razor; if a simpler level of explanation is available, then that should utilised). Generality involves the process of generalising observations of particular phenomena to the world at large. These assumptions lead the ultimate goal of science to systematise and integrate findings into a meaningful pattern that is regarded as a tentative (though not ultimate) truth. Revision and modification of this “truth” occurs as new evidence is found. The positivistic paradigm systematises the process of knowledge generation with the help of quantification. The quantification process is essential to precisely as possible, enhance the description of parameters, and relationships amongst them. There was an attempt to address arguments that it is impossible to verify that a belief is true, by the addition of the concept of falsifiability, by Popper (1959). He deemed that it is possible to reject false beliefs if they are put in a way that is amenable to falsification (nullification) by subsequent observations or arguments. Kuhn (1962) later argued through his ideas, expressed through the concept of paradigm shifts, offered a broader framework to science. Here, it is not simply individual theories, but wider worldviews that must occasionally move in response to accumulation of evidence. These two positions are post-positivist amendments to logical positivism. They do not reject the scientific method, but reform positivism, Kuhn says that it is not possible to make a rational choice as which of two rival theories might be better, and that a relativistic picture may aid paradigm shifts in scientific knowledge. Whilst Popper’s views were more applicable to more classic problems of epistemology and methodology, both these reforms can be described as post-positivist thinking. The degree to which one is more post-positivistic than the other is subject to on-going debates (e.g. Ryan, 2014).

Phenomenology, ethnomethodology and symbolic interactionism are three
schools of thought that can be described as anti-positivist or post-positivist (Dash, 2003). These three schools of thought put emphasis on human interaction with phenomena. They interpret and attach meanings to phenomena, ideas or actions and construct new experiences around them. These three schools of thought attract the use of qualitative approaches to enquiry.

Part of the methodological approach used in this study was the application and use of the standardised psychometric measures of the MCQ-30, TCQ and GHQ. These measures are attempts at positivistic quantification of aspects of RATs; inherent in them is their deterministic and empiricist emphasis. The vast majority of studies that use these measures to aid their research processes also utilise probability statements. This was apparent during the literature review, though no formal review was conducted. The arguments surrounding the use of these probability statements are considered in the Data Analysis section in 3.10. In brief, Coe (2002) and the American Psychological Association (Wilkinson et al., 1999) challenge the orthodoxy of conventional practice by advocating the use of effect sizes instead of making probability claims. It is suggested here that these signposts and recommendations have a strong flavour of post-positivist paradigmatic shift. The use of effect sizes can be seen in the context of Kuhn’s paradigm shift as offering a broader framework, and inherent in their use is the suggestion of taking a wider and broader view of data. The use of Hanson’s (2005) suggestions of mixed method approach is also post-positivist due to the incorporation of qualitative aspects to the study. The interpretation and attachment of meanings of using the two contrasting protocols of VTDT and TS, and of taking part in the study in general, were addressed through the use of semi-structured interviews of Elliott, Slatick, & Urman, (2006) and elicitation of themes expressed in figures 27 and 28. This therefore falls within with Dash’s (2003) view of emphasising human interaction with phenomena as being an anti or post-positivist activity. The overall ethos of the research study has not been to make overarching claims for VTDT or its efficacy, but merely to ascertain if there is a basis for further investigation of the technique. Robson (2002) explores the differences between positivism and post-positivism. Positivists believe that the researcher and the researched are
independent of each other. He says that post-positivism accepts that background, knowledge and values of a researcher influence what is being observed. The lens that shapes and focuses this study is explicitly stated in the Section 2 Literature Review as being that of the third-wave CBT of ACT, and its attendant language and terminology. The influence of this lens is also explored in the professional motivation that acted as the foundation for the study, as discussed in more detail in 1. 5 (The purpose of the study). The professional development process and paradigm shifts from second to third-wave CBT practitioner are covered there. According to Robson, this acceptance of the background, knowledge and values of a researcher have an effect on the observations. This position is openly acknowledged and it is promulgated that this places this study as being an attempt at a researching from a post-positivist position.

As above discussed, conceptual reasons for the mixed method approach are that many quantitative studies do not include qualitative data, and many qualitative studies do not include quantitative data. This study includes both. An important practical reason was that the data was collected sequentially in this order, quantitative followed by qualitative. The loading of the data collection has been primarily quantitative, because of the strictures of the research design discussed below. Another previously discussed purpose for using this mixed methods approach of collecting both types of data, was to triangulate positions and conclusions reached, by means of visual inspection of the quantitative data, and qualitative structured interviews, thereby extending the scope and reliability of the quantitative information. Hanson et al. suggest that these designs are particularly useful for explaining relationships or to study findings. Therefore this study is in Hanson et al's. terminology, a sequential explanatory design, with a multiphase structure.
3.2 Multiphase research design

It is common practice to use an A-B or A-B-A single case or case series designs with pre-treatment baseline followed by treatment, and a further baseline measurement in the latter design. An early example was the work of Wells (1990) when he investigated counter-intuitive increases in anxiety when some individuals engage in relaxation training. Wells used an ABCB design was to evaluate the relative effectiveness of attentional training technique (ATT) and relaxation training in a single participant case study. A baseline period (A) was used to collect diary data on panic episodes, and psychometric measures of neck tension were used. Treatment 1 (B) was then administered for 15 minutes a day for 35 days. This consisted of attentional monitoring followed by attentional switching to auditory stimuli. Treatment 2 (C) consisted of the application of autogenic training. The plan had been for a matched level of administration, but the effect of this treatment made the participant’s panic levels increase, and she requested termination of treatment 2 after 21 days. There was then a return to treatment 1 (B), which lasted 42 days. Finally there were follow up done (no treatment administered) after 3 and 12 months. Over conditions A (baseline), B (treatment 1), C (treatment 2), B (treatment 1) measures of state anxiety and mean subjective anxiety after each session were 51, 35, 49, 35 and 4, 1.8, 6.3 and 2. Graphical representation by Wells of this data very clearly illustrated the effects of the interventions, specifically the negative effect of the autogenic training, and the maintenance (at follow ups) of the positive gains attributed to the attentional training. This type of design is quite stark in its illustration of differential effects. An obvious problem is the difficulty of administration and application of the complicated design, and the potential from drop out/non adherence over a prolonged investigation. Single case design has another issue in terms of potential for generalizability of the findings to a wider population. None the less, Well’s work is elegant in the application of concept of the design. He, with colleagues (Wells, White & Carter, 1997) extended and expanded this type of design to the investigation of causal agents of change in anxiety and beliefs in panic and social phobia. Case series designs with a small number of participants have also been frequently used by
researchers in MCT when piloting the investigation of new therapeutic techniques (e.g. Cooper, Todd, Turner, & Wells, 2007; Wells & Papageorgiou, 2001; Wells, White & Carter 1997; Wilson & White, 2006) and they mark a distinction between simpler withdrawal and more sophisticated reversal designs. Withdrawal designs use a withdrawal of intervention condition, whilst reversal of condition refers to introduction of an alternative, opposing or potentially incompatible behaviour. Such a reversal design would be A-B-A-C-A-B, where A is a baseline measurement, B is the intervention being investigated, C is an alternative treatment or a treatment as usual. This study uses this previously piloted design, in a similar fashion to Wells, White, and Carter (1997). They trialled the use of ATT to treat anxiety and beliefs in panic and social phobia. When applied to ATT, the A-B-A-C-A-B design, according to Wells, White and Carter (p. 228) “offers a powerful means of demonstrating that ATT mechanisms are the central causal agent of change”. It is envisaged that the design will also provide a rigorous preliminary insight into the use of VTDT (instead of ATT), as a means of reducing RATs (instead of beliefs in panic and social phobia). Any changes that occur were measured quantitatively using several measures of aspects of cognitions and a descriptive measure aimed at capturing any changes to qualitative and psychological well-being factors that might be concomitant with aspects of RATs. “Treatment” intervention B is the application of VTDT in an operationalized fashion; “treatment” intervention C is the application of thought suppression in a similarly operationalized fashion.

The direct comparison of non-clinical and obsessive compulsive patients was conducted by Morillo, Belloch and García-Soriano (2007). The obsessive group reported significantly higher incidence of intrusive thoughts and further analysis showed that this was due to re-experiencing intrusions rather than a greater variety of them. This conclusion flagged the importance looking at both the regularity of RATs and the experience of them. This finding guided the design of this project in looking at the quantity of RATs through the RATs diary, and the quality via the MCQ-30, TCQ and qualitative interviews. Daily client diaries reports of the incidence of RATs were taken, together with associated SUDS, see Table 2 below for a simplified representation of the design and see Appendix 5 for a more detailed view including timelines.
Table 2. Overview of research design

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More in depth details regarding the three formal psychometric measures used can be found in section 3.6 below on measures. Brief descriptions given here is the intention of this section together with 3.3 (timescales) below is aimed to provide an overview. Specific quantitative detailed aspects of RATs occurring will be measured using the Meta-Cognitions Questionnaire-30 (MCQ-30, Wells & Cartwright-Hatton, 2004, Appendix 7). This measures a range of meta-cognitive belief processes that are believed to be involved in the maintenance and propensity to emotional problems associated with negative cognitions. There are five separate, but inter-correlated factors: 1) Positive beliefs about worry; this assesses the degree to which the person believes that worrying is helpful, 2) Negative beliefs about worry; this measures the degree to which the person believes that worrying is uncontrollable and dangerous, 3) lack of Cognitive confidence; measures low confidence in memory), 4) beliefs about the Need to control thoughts and consequences of not being able to do so, 5) Cognitive self-consciousness; measures the tendency to monitor one’s own thoughts and focus attention inwards. All items are rated on a 4-point scale with 1 labelled do not agree to 4 agree very much. Scores from the 5 measures can be summed giving a total. Higher scores indicate higher levels of meta-cognitive beliefs or processes.

The Thought Control Questionnaire (TCQ, Wells & Davies, 1994, Appendix 8) is a self-report questionnaire that consists of 30-items using a 4-point scale. It measures different aspects of RATs than the MCQ-30, specifically people’s responses to unpleasant thoughts that they experience. It was developed for adults, and has been tested by Reynolds and Wells (1999) and shown to have a stable factor structure which holds for participants with depression and PTSD. One of the TCQ’s stated aims is to allow for research in developing techniques to control unpleasant and unwanted thoughts, and this makes its use relevant in
this study. The TCQ aims to measure individual differences in suppression techniques and can illustrate that some strategies might be more problematic than others. Five factors are measured using 5 sub-scales: Distraction (e.g. I keep myself busy), Punishment (e.g. I get angry at myself for having the thought), Social Control (e.g. I talk to a friend about the thought), Worry (e.g. I focus on different negative thoughts), Re-appraisal (e.g. I analyse the thought rationally), and a total score. It is scored like the MCQ (1 = never to 4 = almost always).

The General Health Questionnaire-28 (GHQ-28, Goldberg, et al., 1997, Appendix 9) is widely used to assess psychological changes in the general population, and is sensitive to short-term changes, not to long-standing attributes of the respondent. Scoring is on a 4-point scale from “better than usual” to “much more than usual”. It provides a useful profile of scores covering somatic symptoms, anxiety/insomnia, social dysfunction and severe depression. These may or may not change as a result of RATs, and the GHQ was envisaged as describing changes that might not be detected by the previous two psychometric measures.

3.3 Timescale for implementation of the study

Participants were recruited on a convenience basis (see 3.5). Operationalised procedures for VTDT and Thought Suppression conditions can be found in Appendices 1 and 2. Daily thought record forms and SUD recording can be found in Appendix 6. The purpose of the research was outlined to interested potential participants, following as closely as possible the outline in the Research Participant's Information Sheet and design (Appendix 3, 5). Procedural stages were:

1. Two week baseline period where, weekly MCQ-30, TCQ, GHQ were administered. Participants were asked to record and monitor RATs, and their associated SUDs on diary sheets (Appendix 6). The aim of these measurements was to establish the level of ruminative and intrusive thoughts occurring on day-to-day basis.
2. In one session participants, were instructed in the rationale and use of the VTDT technique. Following this, they were asked to use the VTDT protocol at least once a day for two weeks. Participants were asked to record and monitor RATs, SUDs on diary sheets. MCQ-30, TCQ, GHQ measures administered at the end of this phase.

3. Return to baseline, participants were asked not to use VTDT for a period of two weeks. Participants were asked to record monitor RATs, SUDs on diary sheets. MCQ-30, TCQ, GHQ administered at the end of this phase.

4. In one-session participants, were instructed in the rationale and use of thought suppression use, as formal rather than ad hoc tactic. The participants were asked to use formal thought suppression at least once a day for two weeks. Participants were asked to record monitor RATs, SUDs on diary sheets. MCQ-30, TCQ, GHQ administered at the end of this phase.

5. Return to baseline, participants were asked not to use thought suppression for a period of two weeks. Participants were asked to monitor and record RATs, SUDs on diary sheets. MCQ-30, TCQ, GHQ administered at the end of this phase.

6. Re-introduction of VTDT use, with two-week daily use of technique. Participants monitored RATs, SUDs on diary sheets. MCQ-30, TCQ, GHQ administered at start and end of this phase.

7. One month follow up. Participants monitored RATs, SUDs on diary sheets. MCQ-30, TCQ, GHQ administered at start and end of this phase. Recorded and transcribed semi-structured interviews using Client Change Interview Protocol.
3.4 Participants

Non-clinical participants were recruited from various departments of Manchester University, from advertisements on counselling and psychology web sites, local well-being centres and local General Practice surgeries in health centres. This was an attempt to increase the ecological validity of the study by opening out inclusion of participants in a wide a fashion as practically possible. It was also an acknowledgement that RATs occur widely in in non-clinical populations (see Klinger 2009, and section 2.2 above). Participants were not currently seeking counselling or psychological therapy, or had not have received it during the last 12 months. They were required to speak English to standard not requiring an interpreter, and to be at least 18 years of age.

In order to ensure that participants exhibit RATs at commencement of the study, they were screened using an adapted version of the Rumination Questionnaire based on Trapnell and Campbell, 1999 (Appendix 11). This measure consisted of a 12 questions about the occurrence of RATs, these are scored on a 1-5 scale from strongly disagree (1) to strongly agree (5). An inclusion cut-off score of 24 was established that should ensure that respondents affirm to the presence of rumination (RATs) in at least half the questions. This screening helped ensure that participants exhibited RATs at a sufficient level to detect if the VTDT and thought suppression conditions had any measurable effects on RATs. Exclusion criteria were if it were apparent that a participant showed any evidence of dissociation or psychosis, as assessed by clinical observation and use of DSM-IV criteria; no participants were excluded due to this.

Of the 23 respondents originally recruited that had completed the Trapnell and Campbell Rumination Questionnaire (1999), 16 were over the threshold score of 24. These were filtered for inclusion. Trapnell and Campbell indicated the score level of 24 as being suitable to separate reflection from rumination. From these 16, 10 were selected at random using the online True Random Number Generator (Random.org 2013), and were selected to take part in the study. The mean age was 39.6 (SD 9.87) and age range was between 23 and 52. There were 4 females and 6 males, 3 were single, 4 married, 1 separated and 2 divorced. There were 2 teachers, 1 teaching assistant, 1 electrician, 1 doctor, 2
students and 3 unemployed. Of the 10 participants included in the study, the 2 students originated from the university, and the other 2 came via web sites and 4 from the well-being centres and 2 General Practice Surgeries.

3.5 Measures

It has been suggested (Fresco, Frankel, Mennin, Turk, & Heimberg, 2002; Papageorgiou & Wells, 1999, Siegle, Moore & Thase 2004) that different measures of rumination could measure different constructs, and that investigation into these components is on-going, and subject to review. A particular differentiation that these two studies found was between measures of worry and rumination. Siegle, Moore and Thase concluded that there were separate constructs that could be labelled rumination, and that they might have different relationships to depression, though they did not consider anxiety. They found that depressed individuals ruminated more than individuals with a medical condition, who ruminated more than “healthy individuals”; the progression being mediated by dysphoria. After recovery from coronary incidents, differing functional relations were observed between instrumental thinking such as “what can I do about x, y or z”, searching for meaning and emotion focused rumination. As a result of their work, they suggested that future studies should administer multiple rumination measures to assess aspects of rumination, worry, depression, medical and other factors.

Prior to the Siegle, Moore and Thase (2004) review, Conway, Csank, Holm, and Blake (2000), Treynor, Gonzalez, and Nolen-Hoeksema (2003) observed in their work, a differentiation between reflection (repetitive self-referent thoughts on topics that are not as emotionally negative) and rumination on negative topics. These findings influenced the design of this study in the form of targeting rumination in various forms, rather than reflection. The results of the above studies found rumination a central construct as indexed by aggregate measures. Rumination was found to have different relationships to depression. Across multiple measures people identified with depression ruminated more than participants with the painful medical condition of Lupus, and these ruminate more than people labelled “healthy”. The factor that mediated this apparent transition was dysphoria; feelings of unhappiness or discomfort as
expressed by mental and emotional discomfort, symptoms of discontentment, restlessness, dissatisfaction, malaise, indifference or depression and/or anxiety. Therefore a continuum is indicated, and the above authors conclude that it is wise to administer multiple rumination measures and attending to constructs that they identified that are linked with rumination. Multiple measures in relation to rumination-linked constructs found that they shared similar features to symptoms of depression (Segerstrom, Tsao, Alden & Craske, 2000). A large-scale study (Segerstrom, Stanton, Alden & Shortridge, 2003) of measures of self-reports of rumination associated constructs; found clustering on valence (positive or negative), and purpose (e.g. achievement vs. interpersonal goals). These are however, more of theoretical interest, rather than practically applicable in therapy or in day-to-day use. These studies also address differentiation of measures, and do not really address the degree of overlap that might occur between them. All the above psychometrics factors led this study to include and index multiple rumination constructs that are probably related to clinical or pre-clinical phenomena. The conclusions reached by the above previous authors led by Siegle, Moore and Thase (2004) are to use multiple rumination measures; this position has been followed by the current study in the selection of psychometrics used. Finally, this study has used the findings from Luminet (2004), who extensively reviewed most available measures and assessments of rumination. His conclusions were that two good measures of meta-cognitions are the Meta-cognitions Questionnaire (MCQ; Wells & Cartwright-Hatton, 2004) and the Thought Control Questionnaire (TCQ, Wells & Davies, 1994). Following a similar rationale, these two questionnaires were used in the study and are discussed below. The use of a battery of rumination measures in this study follows the suggestions discussed above by Siegle, Moore and Thase (2004) review, Conway, Csank, Holm, and Blake (2000) and Treynor, Gonzalez, and Nolen-Hoeksema (2003). This also ties in with the guidance sequential explanatory research design outlined by Hanson (2005) discussed above in 3.1. The battery of measures selected aims to provide explanations to any relationships observed across the comparison conditions, in relation to existing concepts and findings about ruminations/RATs.
The Meta-Cognitions Questionnaire-30 (MCQ-30, Wells & Cartwright-Hatton & Wells, 2004, Appendix 7) purpose is to measure a range of meta-cognitive belief processes that are key to the maintenance and propensity to emotional problems and discomfort. Measures of individual differences in meta-cognitive beliefs, monitoring tendencies and judgements on thoughts are used. The five separate, but inter-correlated factors are: 1) lack of cognitive confidence, measuring low confidence in memory (e.g. “my memory can mislead me at times”); 2) beliefs about the need to control thoughts and consequences of not being able to do so (e.g., “not being able to control my thoughts is a sign of weakness”); 3) cognitive self-consciousness, measures the tendency to monitor one’s own thoughts and focus attention inwards (e.g., “I pay close attention to the way my mind works”); 4) positive beliefs about worry, this assesses the degree to which the person believes that worrying is helpful (e.g. “worrying helps me cope”); 5) negative beliefs about worry this measures the degree to which the person believes that worrying is uncontrollable and dangerous (e.g., “when I start worrying, I cannot stop”). All items are rated on a 4-point scale with 1 labelled do not agree to 4 agree very much. Scores from the 5 measures can be summed to produce a total meta-cognitions score. Wells and Cartwright-Hatton, (2004) report that the measure has good internal consistency and convergent validity, as well as acceptable test–retest reliability. The correlations showed a high level of stability for the sub-scales; with the lowest retest coefficient of 0.59 for negative beliefs about worry. Cronbachs Alpha scores on were as follows; Cognitive confidence 0.93; Positive beliefs 0.92; Cognitive self-consciousness 0.92; Uncontrollability and danger 0.91; Need to control thoughts 0.72; Total score 0.93.

The MCQ-30 was developed as a shortened and condensed version of from the earlier Meta-cognitive Questionnaire (MCQ, Cartwright-Hatton & Wells, 1997), which was a 65-item scale that assessed dimensions of meta-cognition thought to be relevant to psychopathology. Wells and Cartwright Hatton (2004) allude to the use of the 65-item scale as being limited due to its cumbersome length. This made it undesirable to use in conjunction with other measures, an important
factor in a study where more than one psychometric measure is being used, as in this study. Premature drop out or fatigue effects may have a negative impact on studies that use a large number of items. The MCQ-30 contains the same five sub-factors (described above) as the MCQ. The MCQ-30 was developed with non-clinical samples, whilst the MCQ was validated with clinical participants. As this study uses non-clinical or sub-clinical samples, the use of the MCQ-30 is further justified.

3.7 The Thought Control Questionnaire

The five-factor Thought Control Questionnaire (TCQ, Wells & Davies, 1994, Appendix 8) with its sub-scales of distraction, punishment, social control, reappraisal, and worry has stable and reliable factor structure in both clinical and non-clinical samples. The clinical samples it was tested on were for depression and /or post-traumatic stress disorder (PTSD). The instrument demonstrates that certain thought control strategies, especially worry and punishment, are positively associated with measures of emotional disorder (Wells & Davies, 1994), acute stress disorder (Warda & Bryant 1998), obsessive–compulsive disorder (Amir, Cashman & Foa, 1997). The TCQ sub-scale of worry strategies predicted the future development of PTSD following road-traffic accidents (Holeva, Tarrier & Wells 2001). The TCQ has acceptable high internal reliability with Cronbach Alpha score of 0.8. The sub-scales were fair to good; Distraction = 0.72; Social Control = 0.79; Worry = 0.71; Punishment = 0.64; Re-appraisal = 0.67. This indicates that individual items related to each entire sub-scale, but unfortunately alpha score for the total score was not reported. This is probably due to the aim of the scale being to measure responses to unpleasant thoughts; consequently the total score is perhaps not as meaningful as the sub-scales. The individual sub-scales had correlations between them from r = 0.02 to r = 0.27. The highest correlation was at r = 0.27 between punishment and worry. These low figures support the view that each sub-scale does indeed measure distinctly different dimensions of thought control. Test re-test correlations after a six week period were between 0.67 and 0.83 for the sub-scales; the total score 0.83 indicated that the TCQ is a stable measure over time period consistent with the design of the current study. Use of
the TCQ has been instrumental in showing relationships between “psychopathology” and different control strategies. This was predicted by Wells and Davies (1994) when they reported positive correlations between using worry and punishment strategies and a quite wide range of problematic presentations. Subsequently, and in support of this prediction several studies found the use factors of worry and punishment were associated with obsessive compulsive disorder (Amir Cashman & Foa, 1997), Schizophrenia (Morrison & Wells, 2000), Borderline Personality Disorder (Rosenthal et al. 2006), Generalised Anxiety Disorder (Coles & Heimberg, 2005), and aggression (Nagtegaal & Rassin, 2004). An important finding came from a longitudinal study that showed that elevated use of worry and/or punishment strategies predicted development of PTSD symptoms following road traffic accidents (Holeva, Tarrier, & Wells, 2001). There are circumstances where social control might be adaptive; higher social control has a positive influence in cases of PTSD and Acute Stress Disorder (Bryant, Mastrodomenico & Felmingham, 2008; Holeva et al. 2001; Reynolds & Wells 1999; Scarpa et al. 2009). Lower use of distraction techniques was associated with OCD (Abramowitz et al. 2003, McKay & Griesberg 2002; Rassin & Diepstraten 2003). An example of a question from the Distraction sub-scale is “I keep myself busy”; from the Social Control scale “I talk to a friend about the thought”; from the Worry scale “I think about past worries instead”; the Punishment scale “I get angry at myself for having the thought”; and the Re-appraisal scale “I analyse the thought rationally”.

3.8 The General Health Questionnaire

The General Health Questionnaire (GHQ-28, Goldberg, et al., 1997) is frequently used in counselling, general health service screening for therapy assessment monitoring of progress of the care process and in assessing change due to psychotherapeutic or experimental interventions. It is not design to be a measure of traits long-standing attributes of participants, but of short-term changes and patterns of response. As such it is a useful tool because of its sensitivity over relatively short periods of time. There are four sub-scales of Somatic Symptoms, Anxiety and Insomnia, and Social Dysfunction, and Severe
Depression, with a total score calculated by adding the four sub-scores. It is scored on a Likert scale of better than usual, same as usual, worse than usual or much worse than usual on a 0-0-1-1 scale respectively. The recommended cut off score is 6-7 for each sub-scale for a positive score, and the authors regard that a total score of 13 or more almost always indicates a “psychiatric condition.”

Test-retest reliability is reported as high 0.78 to 0.90 (Robinson & Price, 1982). These authors also found high correlations of the GHQ-28 with various measures of depression. Cronbach’s alpha for inter-rater and intra-rater reliability was at 0.90-0.95 respectively by Failde and Ramos, 2000, showing high internal consistency. The GHQ-28 correlated highly with the widely used Hospital Anxiety and Depression Scale (Skakakibara, 2009) measures of anxiety and depression, but this scale does not investigate somatic, insomnia or social dysfunction factors. Recently occurring symptoms (within the last few weeks) are explored by the GHQ. An example of question from the Somatic Symptoms is “have you recently been getting a feeling of tightness or pressure in your head?”; from Anxiety and Insomnia “have you been feeling nervous and strung-up all the time?”; from Social Dysfunction “have you been able to enjoy your normal day to day activities?”; and Depression “have you been thinking of yourself as a worthless person?”.

3.9 Subjective Units of Distress and RATs diary sheet

The Subjective Units of Distress (SUDs, Appendix 6) is a widely used scale (for example in Behaviour Therapy and Eye Movement Desensitisation Reprocessing) that measures the subjective intensity of a relevant disturbance currently experienced by an individual. It was developed by Wolpe (1969). Here it was used in conjunction with the daily diary record of RATs (Appendix 6). These were measured at baseline and any variations as a function of the use of VTDT, and TS or the cessation of the use of VTDT or TS across the conditions A-B-A-C-A-B and follow up.
3.10 Data analysis-effect size

Effect Size is a reliable and parsimonious way of quantifying the difference between two groups (Coe, 2002). It has many advantages over the use of tests of statistical significance because it emphasises the size of the difference without potentially confounding this with sample size. Its use has generally been limited to meta-analysis, and it is rarely used in research reports. This is despite the American Psychological Association officially encouraging its experimental use since 1994, as documented by Wilkinson et al., (1999). Its absence from statistics and text books (except for those concerned with meta-analysis) has led researchers to be afraid to confront the orthodoxy of conventional practice, according to Wilkinson et al. Effect size, they say, is a quantification of the size of a difference between two groups, and can thus be said to be a truer measure of the significance of the difference. It is the standardised mean difference of the experimental and control group divided by the standard deviation and appears as Equation 1 below.

\[
\text{Effect Size} = \frac{[\text{Mean of experimental group}] - [\text{Mean of control group}]}{\text{Standard Deviation}}
\]

Equation 1. Effect Size calculation.

Wilkinson et al. Also recommend using the pooled standard deviations of the experimental and control group. This appears as equation 2 below.

\[
\text{SD}_{pooled} = \sqrt{\frac{(N_e - 1)SD_e^2 + (N_c - 1)SD_c^2}{N_e + N_c - 2}}
\]

Equation 2. Pooled standard deviation calculation

Significance in psychology is often taken as statistical significance, which is the likelihood that a difference between two groups could be due to accidents of sampling, as measured by ‘p values’. If p<0.05 (below 5%) then the difference is deemed to be large enough to ‘significant’; or p>0.05 the difference is ‘not significant’. Problems with significance tests such a ‘t-test’ is that the p value
depends upon both the size of the effect and the size of the sample. A
’significant’ result could ensue from an effect being very big (despite having a
modest sample size), or if the sample was very large even when the \textit{actual
effect} was quite small. Whilst the small sample size here makes it hard to justify
overconfidence in the results, it was appropriate to use effect sizes, in
combination with visual inspection of data and qualitative results in order to see
if further investigations are justified. As previously discussed in 3.1 the research
design is sequential explanatory in the confines of a multiphase case series
where the emphasis is not on claiming levels of statistical significance, but on
seeing if certain observations in therapy have enough basis for further
investigation (Hanson et al., 2005).

Cohen (1969, p.23) points to ways of interpreting effect sizes are by using
verbal descriptors such as “small” (0.2), “medium” (0.5), and “large” (0.8).
According to Cohen, small effect size would equate to differences between the
heights of 15 and 16 year old girls in the US. Medium effect size would equate
to the difference in heights between 14 and 18 year old girls. Large effect size
would be “grossly perceptible and therefore large” like the difference between
the heights of 13 and 18 year old girls. He uses a further example of “large” as
being the difference in IQ between typical college freshmen and holders of a
PhD. Degree. The use of such descriptors is potentially fraught with difficulty.
Cohen acknowledges the dangers of using terms like “small, “medium”, and
“large” out of context. Such reservations are amplified by Glass, McGaw and
Smith, (1981). He argues that the effectiveness of a particular intervention can
only be interpreted in relation to other interventions that seek to produce the
same effect. Interpretation of effect sizes can be expressed in terms of
percentage of control group that would be an estimate of the percentage of an
experimental group that would score higher than the control group. This value
was extracted from values published by Coe (2002). The value represents the
percentage of a control group who would be below an average person in the
experimental group, or the percentage of the experimental group that would
scored higher than the control group, potentially as a result of the intervention.
The consideration of effect size descriptors is used in context of the graphical
and qualitative data strands.
3.11 Data analysis graphical and visual representation of data

Graphical analysis of the visual representation of results was used, as suggested by Alberto and Troutman (2006) and Tawney and Gast (1984). Alberto and Troutman suggest that this is a valid methodology for practitioner-based research; indeed it comprises an important component of applied behaviour analysis. It provides a visual description of data, which might enable demonstration of an effect - res ipsa loquitur ("the thing itself speaks"), without making overarching claims of quo erat demonstrandum ("which had to be demonstrated"). Graphical analysis was used to assess changes in the quantitative data outlined above and to assess changes in the occurrence of RATs and SUDs as recorded in the diary sheets. This, along with the qualitative interview based analyses outlined below, provided a source of triangulation to provide another data source, and to reduce potential over-reliance or under sensitivity of effect sizes calculations and estimates of the percentage of an experimental group that might score higher than the control group (Coe, 2002). Alberto and Troutman advise considering the possibility of confounding variables, such uncontrolled or unanticipated environmental events or conditions. This point is partly addressed via the qualitative interviews described below (see question 5 in the Client Change Interview Protocol (Appendix 10, Elliott, Slatick, & Urman, 2006). Alberto and Troutman point out that graphical analysis indicates trends and stability of behaviours and thoughts, and the clinical significance to individuals or groups, rather than the statistical significance. Such analysis also facilitates the generalizability of results and interventions, if similar patterns are observed across a range of participants, with the caveat of not jumping to conclusions much wider than the confines and purpose of the study. General and generalised linear models (Wood, 2006) were not used in this study because such analysis was beyond the scope and resources of the project. Such methodology may be appropriate in future studies.

The validity and trustworthiness of the qualitative elements of the study were increased by using several well-established measures of aspects of ruminative cognitions and well-being. These quantitative psychometric measures were the MCQ-30, the TCQ and GHQ. The validation of these tests meets criteria
recently described by the American Psychological Association (APA, 2014). These criteria cover internal and external, test-retest, criterion, content, construct and predictive validity. The measures of the above factors in all three psychometric measures used here, fall well within the APA standards. The use of these three quantitative measures has stood the test of widespread use in a broad range of psychological research, and are also in clinical use in the National Health Service and in mental health services internationally. The factors that they measure are widely regarded be concomitant with aspects of rumination and well-being, and therefore they are reliable instruments to be used in the study.

3.12 Qualitative interview based data

Qualitative aspects of the interventions and research process were captured with a specifically adapted form of a widely used semi-structured interview schedule called The Client Change Interview Protocol (Elliott, Sltick & Urman, 2006). The qualitative interview took the form of a 30-60 minute interviews that were administered at the one-month follow up. Open-ended questions are asked about what a participant attributes changes to, and about helpful and non-helpful aspects of the processes undergone. The explicit main purpose of the interview was to allow participants to talk about the interventions and the research in their own words. Analysis of the quantitative data preceded the qualitative interview in order to facilitate this as well as for practical reasons. Specific aspects of the quantitative data were introduced to the participant, in order to elicit rich data in an attempt at explanation and triangulation of the quantitative findings.

The original interview protocol is an instrument that explores the changes that a client perceives during or at the end of therapy or intervention. The original instrument contains nine questions, some of which have sub-sections. These cover the areas of 1) general questions; 2) changes; 3) change ratings (expectation/surprise, effect of, likelihood of; 4) attribution of change; 5) potential external sources of change: 6) problematic aspects of change; 7) limitations; 9) suggestions for future. The aim of the protocol is to provide a
relatively unstructured empathic exploration of the client’s experience of therapy. Whilst the instrument was originally geared towards exploring changes due to therapy, it provides a useful template for measuring important aspects of change in therapy. Some adaptations were necessary for the purpose of this research; these are outlined below.

There were 29 replacements of the word “therapy” in the original, to “research study.” The insertion of specific references to RATs in questions 3b (rating of changes related to RATs, rather than therapy and similarly with 3c, ratings of the importance of changes with respect to RATs and 5 (attribution to causes of change). The aims of these changes were increases in relevance and specificity of responses of the participants in relation to the aims of the project. Question 7c in the original was; “Has anything been missing from your treatment?” was replaced with “What would make/have made the research study more effective or helpful?” There was also the addition of “Here is a copy of the data collected from you during the study. Please take as long as you like to look at it. After viewing this data, are any of the previous responses you made to the above questions different to when you first made them?” A copy of the amended Client Change Interview Protocol can be found in Appendix 10.

3.13 Qualitative interview based data analysis

The interviews were conducted in a two-week period between, after at least one month had elapsed after the completion of the second VTDT sessions (phase B, VTDT 2 in Table 2 above). They were conducted in a relatively unstructured empathic exploration of the participant’s experience of the research study and the techniques of thought suppression and VTDT. In order to increase the validity of this part of the data collection, an independent research assistant was used. She was a qualified recently retired person centred counsellor that had no specific practitioner knowledge of CBT/ACT. Her motivation was simply to assist in a research study that may add to the body of psychological and therapeutic knowledge. She did have sight of the description of the research study used with the participants at the informed consent phase of the study. Apart from that, she did not have any detailed knowledge about the hypotheses, design structure and purpose off the project. It was necessary for her to know
that the study was an investigation into the effect of two types of intervention on ruminative and intrusive thoughts. The researcher was told that psychometric measures of thought control (TCQ), beliefs about thoughts (MCQ-30), general health (GHQ-28), frequency and intensity of RATs and SUDs (diary measures) were taken during the course of the project. She was given copies of these individual psychometric results one week prior to interview date to facilitate discussion with the participants at the actual interviews.

The semi-structured interviews were transcribed and subjected to systematic qualitative analysis taking the form of identifying multi-layered systems of categories. Similar methods are grounded theory (Rennie, Phillips & Quartaro, 1988), interpretive phenomenological analysis (Smith, Flowers & Larkin, 2009), consensual qualitative research (Hill et al., 2005) and thematic analysis (Braun & Clarke, 2006). These methods involve a movement from the particular (line-by-line codes) to the general (patterns within those codes). This enabled a comparison and cross-checking of the consistency of information derived at different times, and by different means, by comparing observational data with interview data. The analysis went beyond counting word occurrence in the transcript. The primary process for devolving themes was guided by the six stages outlined by Braun and Clarke (2006). Recognition of important moments within the transcripts and recordings was conducted prior to interpretation. The stages were:

1. Read and re-read the data paying attention to specific patterns that occur
2. Generate initial codes documenting the patterns
3. Combining codes into over-arching themes that accurately depict the data
4. Looking at how themes support or do not support the overarching theoretical perspective, questions and hypotheses
5. Define what each them is, and what is interesting about them
6. Member checking and decisions on which themes make meaningful contributions to understanding

An example of generation of codes can be found in Appendix 12.

Thematic analysis is independent of any pre-existing theoretical framework; therefore it is useful for the purposes of this investigation. It was used to report
an individual's reality and experiences of the techniques of VTDT and thought suppression that were used in the study as well as searching for themes and patterns across data sets, including the graphical analyses. Some illustrative aspects of a participants experience are presented in the form of condensed excerpts of text from transcripts, thus adding some richer detail to graphical representation. The main data analysis is presented graphically in the results section, with the interplay between the themes being illustrated by means of flow diagrams.

Building on the work of Guba (1981), Lauri (2011) discusses validity and trustworthiness in relation to qualitative studies. Four criteria are identified to increase the trustworthiness of a study. These criteria are (a) credibility (similar to internal validity); (b) transferability (similar to external validity/generalizability); (c) dependability (similar to reliability); and (d) conformability (similar to construct and predictive validity). Credibility and dependability are addressed by the use of well-established methods of coding qualitative responses elicited from the modified Client Change Interview Protocol (Elliott, Slatick, & Urman, 2006, Appendix 10). The thematic analysis used was independent of any pre-existing theoretical framework, including ACT. It followed the widely used protocol contained in the six-stage process outlined by Braun and Clarke (2006), and is examined in section 3.13. An example of generation of codes can be found in Appendix 12. Dependability and conformability were addressed by the use of an independent interviewer for the Client Change Interview Protocol. The interviewer had no prior knowledge of the research questions or Act experience. Further validity checks with the participants, about the themes elaborated from the interviews, were conducted on completion of the qualitative analysis. This is as has been recommended by Elliot, Fischer and Rennie (1999). In practice this was done by by showing the participants the themes elicited (see Figures 27 and 28) and seeking confirmation that they were accurate. No inaccuracies were identified or reported by the participants. Unfortunately no independent evidence of this member checking was possible as the checking was conducted by telephone by the independent interviewer.
3.14 Ethical Considerations

Ethical approval was obtained from the University of Manchester Research Ethics Committee prior to commencement of recruitment. Guidelines of the British Psychological Society for minimum standards of ethical approval in psychological research (BPS, 2009) were adhered to. Written informed consent to take part in the research was obtained sought from the participants one week after they have received a written description of the aims of the research and potential risks and benefits (Appendix 3). Participants were informed that they could withdraw at any time, and no coercion was exerted on people to participate. It was planned that should any participant wish to withdraw due to unforeseen adverse effects, they were to be given information directing them to readily available sources of support not associated with the research project. None of the participants required this. The recorded interviews from the Client Change Interviews were deleted after transcription and checking. Transcriptions were recorded in a fashion to preserve anonymity.

Significant negative effects for any of the treatment conditions were not anticipated. Since 2007 none have been reported in therapeutic practice in the thirty plus clients where the technique had already been used. The potential for negative effects is specifically addressed in the information sheet (Appendix 3) where it is stated that the intervention conditions (VTDT and thought suppression) “may or may not have a positive or negative effect”. In order to mitigate any potential negative effects, a two-stage containment has been added in both conditions the design. The first was limiting both the interventions to a maximum of 10 minutes. The second was the use in both interventions of a decentralising, relaxation and containment procedure of mindful breathing instructions (Appendix 1, 2). This was aimed to shut down any potential negative effects. A similar protocol of a safe place exercise is used in EMDR in the event of an abreaction during treatment (Shapiro, 2001). Feldman, Greeson and Senville (2010) found good evidence that a mindful breathing condition helps to reduce reactivity to repetitive thoughts. This mindful breathing condition is common to VTDT and thought suppression interventions, and is
therefore eliminated as a potential confounding variable.

The widespread use of thought suppression in the general population is reported by Mitchell et al. 2007, Wegner, 2011, Wegner & Purdon 2008. Indeed they all used thought suppression conditions in their research. TS is a spontaneously and widely used tactic, and was treated as an operationalized treatment as usual condition. The complex ethics of using such treatment as usual, and similar conditions are considered in depth by Reynolds et al. (2001). The use of the TS condition in this study does not contravene any ethical issues highlighted by Reynolds et al. or British Psychological Societies Ethical Guidelines for Conducting Research with Human Participants (BPS, 2009). Section 3.8 of this BPS document was adhered to in that the research did not anticipate prior to its commencement, nor was it reported during the procedures or at follow up, any “harm or unusual discomfort for the individual’s future life or other negative consequences.” This section further states, “If harm, unusual discomfort, or other negative consequences for the individual’s future life might occur, the investigator must obtain the disinterested approval of independent advisors, inform the participants, and obtain informed, real consent from each of them”. These points were covered in Appendix 3 consent form and the consideration and approval of the University of Manchester Research and Ethics Committee, who had sight of all of the appendices and the research design in the processing of the formal research proposal. In Appendix 3, the participants had prior and specific information provided about the possibility that the use of VTDT or thought suppression could lead to the experiencing of negative feelings during the research, and informed consent was taken from each participant. The information sheet (Appendix 3) states, “The purpose of the project is to investigate if two types of activities have any influence on ruminative and intrusive thoughts (RATs). RATs are repetitive, upsetting, and may involve, images or impulses of internal origin that suddenly appear. They can be irrational, unrealistic, foreign to one’s general character, or just generally unwanted and can be difficult to control. Rumination is where people focus on their thoughts, and often the causes and consequences of them. Because I am looking at often-unpleasant thoughts you could experience negative feelings during the research. It is anticipated that there will be no lasting negative effects
to these experiences, and there is a built in containment procedure at relevant stages of the procedures”.

The information sheet also emphasised that participation was entirely voluntary and that it was possible that they could drop out of the research project at any time. It further stated, “If there is a negative effect that you feel unable to cope with, you will be offered external sources of help and further support. The results of the research may help you decide if any of the techniques are useful in reducing unwanted effects of ruminative and intrusive thoughts”. No participant drop out occurred from the use of TS or for any other reason, nor did any of the participants request external sources of help or further support.
4. RESULTS

In this chapter I will briefly re-state the hypotheses and two general research questions that provide part of the mixed methods approach adopted in this study, followed by a summary of the relevant quantitative and qualitative findings. In order to facilitate data tracking, the results are presented in order of the psychometric measures used, with individual references to the research hypotheses being made within each section. The quantitative findings from the formal psychometrics, RATs and SUDs are presented with effect sizes and relevant data. As part of the mixed methods approach, visual inspection data is presented within each section. Synthesis and interrelationships between the results is presented in the discussion.

The hypotheses, as indicated in the Introduction were: -

1) Using VTDT has a positive influence (i.e. a reduction) on levels of meta-cognitions as measured by 3 standardised psychometric measures.
2) Using TS has a negative influence (i.e. an increase) on levels of meta-cognitions as measured by 3 standardised psychometric measures.
3) Using VTDT has a positive influence (i.e. a reduction) in meta-cognitions as measured by RATs.
4) Using TS has a negative influence (i.e. an increase) on meta-cognitions as measured by numbers of RATs.
5) Using VTDT has a positive influence (i.e. a reduction) on the severity of SUDs associated with RATs.
6) Using TS has a negative influence (i.e. an increase) on the severity of SUDs associated with RATs.

Two general research questions asked were: -

A. Do the qualitative findings from the use of semi-structured interviews support the use of the VTDT intervention?
B. Do the qualitative findings from the use of semi-structured interviews support the view that the use of TS is undesirable?
The overarching research question was “Is the VTDT a technique a useful addition to existing cognitive defusion techniques, and therefore worthy of further systematic research?”

H1 and 2 were investigated through measuring MCQ-30, TCQ and the GHQ. This should be considered in conjunction with the qualitative data section as indicated by general research questions A and B. Scores going down appreciably after VTDT, and scores going back up after cessation of VTDT are taken as supporting H1. Scores going up after TS, and scores going back down after cessation of TS may be taken as supporting H2. H3 and H4 were addressed through the direct measurement of RATs. Measurement of subjective distress as expressed in SUDs units addressed H5 and H6. Means, standard deviations and effect sizes were calculated across the phases for H1-6 inclusive. Graphical analysis as suggested by Alberto and Troutman, (2006), was also used to assess changes in the above psychometric measures, and in RATs and SUDS between the baseline, VTDT and TS conditions. Analysis of emergent themes and categories from the data produced by the post-intervention semi-structured interviews addressed general research questions A and B.

4.1 Quantitative data

4.1.1 Meta-cognitive Questionnaire-30

The MCQ-30 results are presented below in their five sub-scales, Cognitive Confidence, Need for Control, Cognitive Self-consciousness, Positive Beliefs about Worry, Negative Beliefs about Worry and total MCQ-30 score. Means, standard deviations, effect sizes as appropriate, are presented in tabular and graphical format in Table 3 and in Figure 3.

4.1.1.a MCQ-30 Cognitive Confidence. This sub-measure of the MCQ-30 assesses aspects of the degree that a person in general has low confidence in memory (e.g. “my memory can mislead me at times”). Data from this sub-scale
of the MCQ-30 is summarised in Table 3 and graphically in Figure 3 below showing means, standard deviations Cohen’s d and interpretation of effect size in terms of percentage of an experimental group that might score higher or lower than a control group across three interventions, three baselines and follow ups.

The mean baseline scores (MB1, phase A) across the 10 participants were 10.60 (SD 1.17). After the first VTDT intervention (VTDT1, phase B) the mean score showed some improvement to 10.00 (SD 0.94, d = 0.57). This was a medium effect size. The return to baseline (B2, return to phase A) showed a return to the mean base line level of 10.60 (SD 1.17, d = 0.57). This is a medium effect size. These two results could be interpreted as providing some support for H1; i.e. the participants improved somewhat in terms of Cognitive Confidence using VTDT, and got worse on cessation of VTDT use.

Thought suppression (TS phase C) showed a worsening in score to a mean of 11.6 (SD 1.17, d = 0.85). This is a large effect size; the participants got worse in terms of Cognitive Confidence using suppression. Cessation of TS (B3, phase A) showed improvements to a mean of 10.9 (SD = 1.10, d = 0.61). This is a medium effect size, and means ceasing to use TS, results in an improvement in Cognitive Confidence. These last two results could be interpreted as providing support for H2, evidence being better for use of TS than from its withdrawal.

Re-introduction of the VTDT (VTDT2, phase B) showed reduction in score to a mean of 10.00 (SD = 0.94, d = 0.88). This is a large effect size; using VTDT here produces an improvement in Cognitive Confidence. This can be interpreted as providing support for H1. At one month follow up (FU) scores stayed at a mean of 10.00 (SD = 0.94, d = 0). This result can be interpreted as not necessarily supporting H1, or that the effects of VTDT were maintained. This result might provide support for H1, as improvements were maintained at follow up and better than at initial baseline MB1.

Overall, the numerical results from the Cognitive Confidence sub-scale of the MCQ-30 provide support for H1, and show that TS does have a negative effect (H2) as measured here. The best evidence comes from the second use of VTDT and the implementation of TS.

Visual inspection of the data for Cognitive Confidence in Figure 3 shows clear
overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downward movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The movements were less pronounced in participants 5 and 7. The overall evidence from visual inspection of data appears to provide support for H1 and H2.
Table 3. MCQ-30 Cognitive Confidence: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Cognitive Confidence</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1</td>
<td>10.60</td>
<td>10.00</td>
<td>10.60</td>
<td>11.60</td>
<td>10.90</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>Mean</td>
<td>10.60</td>
<td>10.00</td>
<td>10.60</td>
<td>11.60</td>
<td>10.90</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.17</td>
<td>0.94</td>
<td>1.17</td>
<td>1.17</td>
<td>1.10</td>
<td>0.94</td>
<td>0.94</td>
</tr>
<tr>
<td>Cohen's d</td>
<td>0.57</td>
<td>0.57</td>
<td>0.85</td>
<td>0.61</td>
<td>0.88</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3. MCQ-30 Cognitive Confidence: changes across VTDT, baselines, thought suppression, and follow up

4.1.1.b MCQ-30 Need for Control

This measures beliefs in general about the need to control thoughts and consequences of not being able to do so (e.g., “not being able to control my thoughts is a sign of weakness”). Data from this sub-scale of the MCQ-30 is summarised in Table 4 and graphically in Figure 4 below showing means, standard deviations Cohen’s d and interpretation of effect size in terms of percentage of an experimental group that might score higher or lower or than a control group across three interventions, three baselines and follow ups.

The mean baseline scores (MB1, phase A) across the 10 participants was
17.40 (SD 4.88). After the first VTDT intervention (VTDT1, phase B) the mean score showed improvement to 12.50 (SD = 2.12, d = 1.30). This is a large effect size after the first VTDT intervention. The return to baseline (B2, return to phase A) showed deterioration back to a mean of 16.20 (SD = 4.02, d = 0.81). This is a large effect size, meaning that cessation of VTDT caused a worsening of Need for Control. These two results provide support for H1.

Thought suppression (TS phase C) showed a further worsening in scores to a mean of 20.00 (SD 4.94, d = 0.59). This is a medium effect size, in Need for Control scores, i.e. the participants got worse on using TS. This result provides moderate support for H2. Cessation of thought suppression (B3, phase A) showed improvements to a mean of 18.60 (SD = 4.95, d = 0.28). This is a small effect size, and. This result provides weak support for H2 from the Need for Control measure.

Re-introduction of the VTDT (VTDT2, phase B) showed reduction in score to a mean of 12.60 (SD = 1.78, d = 1.61). This is a large effect size, starting to use VTDT again led participants to experience an improvement in Need for Control scores. This provides good support for H1. At one-month follow up (FU) scores crept back up to a mean of 14.00 (SD = 2.26, d = 0.69). This was a medium effect size deterioration in Need for Control scores. This might provide some support for H1 in that scores worsened moderately on cessation of second use of VTDT, possibly as a result of maintenance of effect.

Overall the numerical results from the Need for Control sub-scale of the MCQ-30 provide support for H1 from the use of VTDT, and show that thought suppression does have moderate negative effects (H2) as measured by the use of TS, but not from it's withdrawal of use.

Visual inspection of the data in Figure 4 for Need for Control shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at below initial baseline measures. The overall evidence from visual inspection of data appears to provide support
for both H1 and H2.

**Table 4.** MCQ-30 Need for Control: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Need for Control</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1 VTDT 1</td>
<td>17.40</td>
<td>12.50</td>
<td>16.20</td>
<td>20.00</td>
<td>18.60</td>
<td>12.60</td>
<td>14.00</td>
</tr>
<tr>
<td>Mean</td>
<td>17.40</td>
<td>12.50</td>
<td>16.20</td>
<td>20.00</td>
<td>18.60</td>
<td>12.60</td>
<td>14.00</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>4.88</td>
<td>2.12</td>
<td>4.02</td>
<td>4.94</td>
<td>4.95</td>
<td>1.78</td>
<td>2.26</td>
</tr>
<tr>
<td>Cohen's d</td>
<td>1.30</td>
<td>0.81</td>
<td>0.59</td>
<td>0.28</td>
<td>1.61</td>
<td>0.69</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4.** MCQ-30 Need for Control: changes across VTDT, baselines, thought suppression, and follow up

**4.1.1.c MCQ-30 Cognitive Self-Consciousness**

This psychometric, measures the tendency in general to monitor one’s own thoughts and focus attention inwards (e.g., “I pay close attention to the way my mind works”). Data from this sub-scale of the MCQ-30 is summarised in Table 5 and graphically in Figure 5 below showing means, standard deviations Cohen’s across three interventions, three baselines and follow ups.

The mean baseline scores (MB1, phase A) across the 10 participants was 19.10 (SD 5.55). The first use of the VTDT intervention (VTDT1, phase B) the
mean score showed an improvement to 14.50 (SD = 3.06, d = 1.03). This is a large effect size a result of the first VTDT intervention. The return to baseline (B2, return to phase A) showed deterioration back to a mean of 16.10 (SD = 3.09, d = 0.46). This is approaching a medium effect size. The first result provide good support for H1, the second only moderately so.

Thought suppression (TS phase C) showed a worsening in score to a mean of 20.20 (SD 5.29, d = 0.69). This is a medium effect size; with TS use participants got somewhat worse Cognitive Self-Consciousness scores. This result provides moderate support for H2. Cessation of thought suppression (B3, phase A again) showed improvements to a mean of 16.70 (SD = 3.85, d = 0.75). This is a medium, approaching large effect size, with ceasing to use thought suppression, participants experienced an improvement in Cognitive Self-Consciousness. This result provides some support for H2.

Re-introduction of the VTDT (VTDT2, phase B) showed reduction in score to a mean of 13.90 (SD = 2.47, d = 0.86). This is a large effect size; participants starting to use VTDT again experienced an improvement in Cognitive Self-Consciousness. This provides good support for H1. At one-month follow up (FU) scores crept back up to a mean of 15.10 (SD = 2.96, d = 0.44). This is approaching a medium effect size; with cessation of VTDT participants experienced deterioration in Cognitive Self-Consciousness scores. This provides moderate support for H1.

Overall the numerical results from the Cognitive Self-Consciousness sub-scale of the MCQ-30 provide support for H1, mainly from the use of VTDT in both cases, but not so much from its withdrawal. The results show that TS does have a moderate negative effect (H2), but improves on withdrawal as measured here. Visual inspection of the data in Figure 5 for Cognitive Self-Consciousness shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downward movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data
appears to provide support to H1 and H2.

**Table 5.** MCQ-30 Cognitive Self-Consciousness: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Cognitive Self-consciousness</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1</td>
<td></td>
<td></td>
<td>VLTD1</td>
<td>B2</td>
<td>TS</td>
<td>B3</td>
<td>VTDT2</td>
</tr>
<tr>
<td>Mean</td>
<td>19.10</td>
<td>14.50</td>
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<td>20.20</td>
<td>16.70</td>
<td>13.90</td>
<td>15.10</td>
</tr>
<tr>
<td>Standard Deviation</td>
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<td>3.06</td>
<td>3.90</td>
<td>5.29</td>
<td>3.89</td>
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<td>2.96</td>
</tr>
<tr>
<td>Cohen's d</td>
<td>1.03</td>
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<td>0.69</td>
<td>0.75</td>
<td>0.86</td>
<td>0.44</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 5.** MCQ-30 Cognitive Self-Consciousness: changes across VTDT, baselines, thought suppression, and follow up

4.1.1. MCQ-30 Positive Beliefs about Worry

This sub-measure of the MCQ-30 assesses the degree to which the person believes in general that worrying is helpful (e.g., “worrying helps me cope”). The data summarised on Table 6, which shows means, standard deviations, Cohen’s d across three interventions, three baselines and follow ups. The results are graphically represented in and Figure 6.

All the scores at mean baseline (MB1, phase A) across the 10 participants were the same at 7. After the first VTDT intervention (VTDT1, phase B) the score dropped to 6, with no variations in scores across all participants. The effect size
was 1.00 (large) as a result of the first VTDT intervention. This result supports H1. The scores for all participants stayed the same at baseline 2 (B2, return to phase A). The effect size was 0 and no change was observed. This result cannot be taken as supporting H1.

A deterioration in mean scores to 6.5 occurred when participants used the thought suppression strategy (TS phase C). The effect size due to introduction of thought suppression was 1.00 (large). Cessation of thought suppression on the return to baseline 3 (B3, phase A) showed an improvement down to a mean of 6, effect size was large at 1.00. These two results could be taken as support for H2.

Re-implementation of the VTDT strategy (VTDT2, phase B) resulted in an improvement to a mean of 5.70. The effect size was 0.88 (large) following the use of VTDT for the second time. The Positive Beliefs about Worry measure crept back up slightly at one month follow up (FU) to a mean of 6, with a large effect size of 1.00. This mean score was slightly lower than at mean baseline 1 at the start of the phase process. These two results could be taken as support for H1.

Overall the numerical results from the Positive Beliefs about Worry sub-scale of the MCQ-30 provide support for H1 from the numerical evidence, apart from withdrawal of VTDT 1. The results as interpreted here show that thought suppression does have a negative effect (H2) on RATs. A caveat is that the actual movements in scores were not large, and effect sizes can be high due to consistency of scores.

Visual inspection of the data in Figure 6 on Positive Beliefs about Worry shows some slight overall movements upwards from baseline after VTDT. After cessation of VTDT, no change is seen. After implementation of TS an increase is observable. After cessation of TS there is a downward movement. Implementation of VTDT a second time showed a further downward movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained below initial baseline measures. The overall evidence from visual inspection of data provides a small degree of evidence for H1 and H2.
Table 6. MCQ-30 Positive Beliefs about Worry: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Positive Beliefs about Worry</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
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<td>MB1 VTDT 1 B2 TS B3 VTDT 2 FU</td>
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<td>6</td>
<td>6</td>
<td>6.5</td>
<td>6</td>
<td>5.7</td>
<td>6</td>
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<td>6</td>
<td>6.5</td>
<td>6</td>
<td>5.7</td>
<td>6</td>
</tr>
<tr>
<td>Standard Deviation</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.71</td>
<td>0.00</td>
<td>0.48</td>
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<td>Cohen’s d</td>
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<td>1.00</td>
<td>1.00</td>
<td>0.88</td>
<td>0.88</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6. MCQ-30 Positive Beliefs about Worry: changes across VTDT, baselines, thought suppression, and follow up

4.1.1.e MCQ-30 Negative Beliefs about Worry

This sub-measure of the MCQ-30 assesses the degree to which the person believes in general that worrying is uncontrollable and dangerous (e.g. “when I start worrying, I cannot stop”). This MCQ sub-scale data is summarised in Table 7 and graphically in Figure 7 below, showing means, standard deviations Cohen’s d across three interventions, three baselines and follow ups. The mean baseline scores (MB1, phase A) showed incidence of Negative Beliefs about Worry with the mean of 16.10 (SD 3.87). After the VTDT intervention (VTDT1, phase B) the mean score improved by decreasing to a mean of 11.00 (SD 0.82, d = 1.82). This is a large effect size after the first VTDT intervention. After cessation of VTDT (B2, return to phase A) the scores the
scores to deteriorate, increasing to a mean of 13.80 (SD 2.66, d = 1.42). This is also a large effect size and means that cessation of the use of VTDT. These last two results provide support for H1.

The use of TS (phase C) showed deterioration from baseline 2 to a mean of 18.30 (SD 4.52, d = 0.86). This is a large effect size, participants showed increases in Negative Beliefs about Worry after using thought suppression. Cessation of thought suppression (B3, phase A) showed improvements in Negative Beliefs about Worry with a mean of 14.0 (SD = 2.67, d = 1.16). This is a large effect size; participants using suppression experienced an improvement in Negative Beliefs about Worry after casing suppression. These last two results provide support for H2.

Re-introduction of the VTDT (VTDT2, phase B) showed reduction in score to a mean of 10.70 from 14.0 (SD = 0.82, d = 1.67). This is a large effect size, participants using to use VTDT again experienced a decrease in negative Beliefs about Worry. At one month follow up (FU) scores had deteriorated back up to a mean of 12.10 from 10.7 (SD = 1.52, d = 1.64). This is a large effect size, participants ceasing to use VTDT experienced deterioration in beliefs about worry. The follow up mean score was lower than at mean baseline (MB1, phase A) at the start of the study. These two results provide support for H1.

Overall, the numerical results from the Negative Beliefs about Worry sub-scale of the MCQ-30 provide support for H1. The data shows that thought suppression does have a negative effect (H2) as measured here.

Visual inspection of the data in Figure 7 for Negative Beliefs about Worry shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downwards movement. Implementation of VTDT a second time showed a further downwards movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data appears to provide support for H1 and H2.
Table 7. MCQ-30 Negative Beliefs about Worry: changes across VTDT, baselines, thought suppression, and follow ups

<table>
<thead>
<tr>
<th>Negative Beliefs about Worry</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1</td>
<td>16.10</td>
<td>11.00</td>
<td>13.80</td>
<td>18.30</td>
<td>14.00</td>
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<td>B2</td>
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<td>TS</td>
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<td>B3</td>
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<td>FU</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Mean  
Standard Deviation  
Cohen's d  

Figure 7. MCQ-30 Negative Beliefs about Worry: changes across VTDT, baselines, thought suppression, and follow up

4.1.1.f MCQ-30 Mean Total

Data from the amalgamation of the 5 sub-scales of the MCQ-30 is summarised in Table 8 and graphically in Figure 8 below showing means, standard deviations Cohen’s d across three interventions, three baselines and follow ups.

The mean baseline scores (MB1, phase A) across the 10 participants was 14.04 (SD 5.83). At the first use of the VTDT intervention (VTDT1, phase B) the total mean score showed an improvement to 10.80 (SD = 3.33, d = 0.68). This is medium effect size as a result of the first VTDT intervention. The return to baseline (B2, return to phase A) showed deterioration back to a mean of 12.54
(SD = 4.74, d = 0.42). This is approaching a medium effect size. These two results provide moderate support for H1.

Thought suppression (TS phase C) showed a worsening in score to a mean of 15.32 (SD 6.60, d = 0.48). This is approaching a medium effect size. This result provides some moderate support for H2. Cessation of thought suppression (B3, phase A) showed improvements to a mean of 13.24 (SD = 5.39, d = 0.24). This is a small effect size, after ceasing to use thought suppression. Re-introduction of the VTDT (VTDT2, phase B) showed reduction in score again to a mean of 10.58 (SD = 3.17, d = 0.43). This is approaching a medium effect size; participants using VTDT again experienced an improvement in cognitive confidence. This provides some moderate support for H1. At one month follow up (FU) scores crept back up to a mean of 11.44 (SD = 23.71, d = 0.25). This is a small effect size, and provides only weak support for H1.

The data from the mean total MCQ-30 scores is presented in Table 8 and Figure 8 below. The effect sizes for each condition appear in Figure 9. Examination of the mean total scores of the MCQ-30 provides moderate support for the use of VTDT at both points in the investigation, (d = 0.68, 0.43, respectively). Support for the withdrawal of the use of VTDT is moderate at phase B2 (d = 0.42) and FU (d = 0.25). The best support is for the first VTDT intervention (d = 0.68). The mean total score results provide moderate support for H1, with no support from withdrawal of VTDT at FU. Support for H2, due to the use of TS (d = 0.48) is moderate due to the approaching medium effect size. Cessation of TS at B3 (d = 0.24) is weak support for H2.

Visual inspection of the data in Figures 8 and 9 shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downward movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data appears to provide support for H1 and H2.
Table 8. MCQ-30 mean total scores: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Mean total MCQ-30</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>14.04</td>
<td>10.8</td>
<td>12.54</td>
<td>15.32</td>
<td>13.24</td>
<td>10.58</td>
<td>11.44</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5.83</td>
<td>3.33</td>
<td>4.74</td>
<td>6.60</td>
<td>5.39</td>
<td>3.17</td>
<td>3.71</td>
</tr>
<tr>
<td>Cohen’s d</td>
<td>0.68</td>
<td>0.42</td>
<td>0.48</td>
<td>0.24</td>
<td>0.43</td>
<td>0.25</td>
<td></td>
</tr>
</tbody>
</table>

Figure 8. Mean total MCQ-30 scores across conditions
4.1.1.g Summary of findings for MCQ-30.

The strongest numerical evidence in support of H1 were found in the sub-scales of Cognitive Confidence (VTDT2); Need for Control (VTDT1 and 2) and withdrawal from VTDT1; Cognitive Self-Consciousness (VTDT 1 and 2); Positive Beliefs (VTDT1 and 2) and withdrawal of VTDT2; Negative Beliefs (VTDT 1 and 2 and cessation from VTDT 1 and 2). The total scores provided only moderate support to H1 (VTDT 1 and 2 and cessation of VTDT2). The strongest support for H2 comes from the sub-measures of cognitive confidence, positive and negative beliefs from TS use and withdrawal. Consistent evidence comes from visual inspection of the data for all the sub-scales and totals MCQ total in support of both H1 and H2.
4.2.1. Thought Control Questionnaire

The TCQ results are presented below in their five sub-scales, Distraction; Punishment; Re-appraisal; Worry; Social Control and total TCQ-30 score. Means, standard deviations, effect sizes as appropriate, are presented in tabular and graphical format.

4.2.1.a. TCQ Distraction. This TCQ sub-scale measured recent attempts to control unwanted thoughts through tactics like “I keep myself busy.” Data from this sub-scale of the TCQ is summarised in Table 9 and graphically in Figure 10 below showing means, standard deviations Cohen’s d across three interventions, three baselines and follow ups.

The mean baseline scores (MB1, phase A) across the 10 participants was 16.70 (SD 2.22). At the first use of the VTDT intervention (VTDT1, phase B) this mean score showed an improvement to 12.70 (SD = 0.95, d = 2.28). This is a large effect size after the first VTDT intervention. The return to baseline (B2, return to phase A) showed deterioration in scores back to a mean of 15.00 (SD = 1.25, d = 2.61). This is a large effect size after ceasing to use VTDT. These two results provide support for H1.

Thought suppression (TS phase C) showed a worsening in score to a mean of 18.30 (SD 1.70, d = 2.75). This is a large effect size, use of suppression by participants showed worsening of Distraction sub-scale scores. This result provides support for H2. Cessation of thought suppression (B3, phase A) showed improvements to a mean of 15.90 (SD = 1.66, d = 1.43). This large effect size after ceasing to use thought suppression shows participants improving their Distraction scores. This result provides support for H2.

Re-introduction of the VTDT (VTDT2, phase B) showed reduction in score again to a mean of 13.50 (SD = 1.35, d = 1.59). This is a large effect size; after starting to use VTDT again, participants experienced an improvement in Distraction scores. This provides support for H1. At one month follow up (FU) scores moved back up to a mean of 14.40 (SD = 0.97, d = 0.52). This is a medium effect size showing some deterioration Distraction scores on cessation of VTDT use. This provides some support for H1.

Overall the numerical data from the Distraction sub-scale provides support for
H1 from the implementation of both VTDT phases, and withdrawal from VTDT1. Moderate support comes from cessation of VTDT2. There is support for H2 from the use of TS and its withdrawal. Visual inspection of the data in Figure 10 for Distraction shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downward movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data appears to provide support for H1 and H2.

Table 9. TCQ Distraction: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Distraction</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1</td>
<td></td>
<td></td>
<td>VTDT 1</td>
<td></td>
<td>B2</td>
<td>TS</td>
<td>B3</td>
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<td>VTDT 2</td>
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<td>18.30</td>
<td>15.90</td>
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<td>1.35</td>
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<tr>
<td>Cohen's d</td>
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<td>1.59</td>
<td>0.52</td>
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</table>

Figure 10. TCQ Distraction: Changes across VTDT, baselines, thought suppression and follow up
4.2.1.b TCQ Punishment

This TCQ sub-scale measures recent self-punishment tactics as a result of RATS e.g. “I get angry at myself for having the thought”. Data from this sub-scale of the is summarised in Table 10 and graphically in Figure 11 below showing means, standard deviations Cohen’s d and interpretation of effect size across the three interventions, three baselines and follow ups.

The mean baseline scores (MB1, phase A) across the 10 participants was 9.50 (SD = 1.36). The first use of the VTDT intervention (VTDT1, phase B) this mean score showed an improvement to 7.30 (SD = 0.46, d = 2.18). This is a large effect size after the first VTDT intervention. The return to baseline (B2, return to phase A) showed a move back up to a mean of 8.50 (SD = 1.05, d = 1.07). This is a large effect size after cessation of the use of VTDT; participants’ scores on the Punishment sub scale got worse. These two results provide support for H1.

Thought suppression (TS phase C) showed a worsening in score to a mean of 10.80 (SD 1.72, d = 1.63). This is a large effect size; participants using thought suppression exhibited increases in use of Punishment scores (i.e. they got worse). This result provides support for H2. Cessation of thought suppression (B3, phase A) showed improvements to a mean of 9.20 (SD = 1.94, d = 0.87). This is a large effect size; participants ceasing to use thought suppression, experienced an improvement in Punishment scores. This result also provides support for H2.

Re-introduction of the VTDT (VTDT2, phase B) showed reduction in score again to a mean of 7.20 (SD = 0.75, d = 1.36). This is a large effect size; after using VTDT again participants experienced an improvement in Punishment scores. This provides support for H1. At one month follow up (FU) scores stayed at a mean of 7.20 (SD = 1.25, d = 0.00). This lack of effect size means that gains were maintained in Punishment scores, and did not deteriorate. This might provide support for H1. Overall the numeral data from the Punishment sub-scale provides support for H1 from the use and withdrawal of VTDT1 and from the use of VTDT2. Support may come from cessation of the second VTDT use due to maintenance effects. There is support for H2 from the use of TS and its withdrawal.

Visual inspection of the data in Figure 11 for the Punishment sub-scale shows clear overall movements downwards from baseline after VTDT. After cessation
of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downwards movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data appears to provide support for H1 and H2.

Table 10. TCQ Punishment: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Punishment</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
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<tbody>
<tr>
<td></td>
<td>MB1</td>
<td>VTDT 1</td>
<td>B2</td>
<td>TS</td>
<td>B3</td>
<td>VTDT 2</td>
<td>FU</td>
</tr>
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<td>7.20</td>
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<td>0.75</td>
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<td>1.36</td>
<td>0.00</td>
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</table>

Figure 11. TCQ Punishment: Changes across VTDT baselines, thought suppression, and follow up

4.2.1.g TCQ Re-appraisal

This TCQ sub-scale measures recent re-examination (e.g. “I analyse the thought rationally”). Data from this sub-scale of re-appraisal is summarised in Table 11 and graphically in Figure 12, below showing means, standard deviations Cohen’s d and interpretation of effect size across the three interventions, three baselines and follow ups.
The mean baseline scores (MB1, phase A) across the 10 participants was 14.60 (SD = 1.02). The first use of the VTDT intervention (VTDT1, phase B) this mean score showed an improvement to 12.20 (SD = 0.75, d = 2.70). This is a large effect size after the first VTDT intervention. The return to baseline (B2, return to phase A) showed a move back up to a mean of 13.40 (SD = 0.92, d = 1.43). This is a large effect size after cessation of the use of VTDT. These two results provide support for H1.

Thought suppression (TS phase C) showed a decrease in score to a mean of 16.20 (SD 1.17, d = 2.66). This is a large effect size reflecting increases in Re-appraisal scores after thought suppression use (i.e. participants got worse on this measure). Cessation of thought suppression (B3, phase A) showed improvements to a mean of 14.90 (SD = 1.04, d = 1.17). This large effect size after ceasing to use thought suppression shows an improvement in Re-appraisal. These two results provide some support for H2.

Re-introduction of the VTDT (VTDT2, phase B) showed reduction in score again to a mean of 12.00 (SD = 0.89, d = 2.98). This is a large effect size after starting to use VTDT again, reflecting improvements in Re-appraisal. This provides support for H1. At one month follow up (FU) scores moved up to a mean of 12.20 (SD = 0.98, d = 0.21). This is a small effect size, ceasing to use VTDT showed some deterioration in Re-appraisal, or alternatively maintenance of the VTDT effect. This provides weaker support for H1.

Overall the numeral data from the Re-appraisal sub-scale provides good support for H1 from both uses of VTDT, and from cessation of VTDT1, but weak support from cessation of VTDT2. There is good support for H2 from the use of TS and its cessation.

Visual inspection of the data in Figure 12 for Re-appraisal shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downward movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data appears to
provide support for H1 and H2.

**Table 11.** TCQ Re-appraisal: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Re-appraisal</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>MB1</td>
<td>VTDT 1</td>
<td>B2</td>
<td>TS</td>
<td>B3</td>
<td>VTDT 2</td>
<td>FU</td>
</tr>
<tr>
<td>Mean</td>
<td>14.60</td>
<td>12.20</td>
<td>13.40</td>
<td>16.20</td>
<td>14.90</td>
<td>12.00</td>
<td>12.20</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.02</td>
<td>0.75</td>
<td>0.92</td>
<td>1.17</td>
<td>1.04</td>
<td>0.89</td>
<td>0.98</td>
</tr>
<tr>
<td>Cohen's d</td>
<td>2.70</td>
<td>1.43</td>
<td>2.66</td>
<td>1.17</td>
<td>2.98</td>
<td>0.21</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 12.** TCQ Re-appraisal: changes across VTDT, baselines, thought suppression and follow up

4.2.1.d **TCQ Worry**

This TCQ sub-scale measured recent attempts to use worry as an attempt to control aspects of unwanted thoughts e.g. “I think about past worries instead.” Data from this sub-scale of worry is summarised in Table 12 and graphically in Figure 13, below showing means, standard deviations Cohen’s d across the three interventions, three baselines and follow-ups. The mean baseline scores (MB1, phase A) across the 10 participants were 11.20 (SD = 1.47). The first use of the VTDT intervention (VTDT1, phase B) this mean score showed an improvement to 9.30 (SD = 1.14, d = 1.16). This is a large effect size as a result of the first VTDT intervention. The return to baseline (B2, return to phase A)
showed a move back up to a mean of 9.30 (SD = 0.78, d = 1.41). This large effect size after cessation of the use of VTDT. These two results provide support for H1.

Thought suppression (TS phase C) showed a decrease in score to a mean of 13.20 (SD 1.25, d = 2.79). This is a large effect size; after using thought suppression, participants showed increases in Worry scores (i.e. they would get worse). This result provides support for H2. Cessation of thought suppression (B3, phase A) showed improvements to a mean of 11.30 (SD = 1.49, d = 2.16). This is a large effect size; after ceasing to use thought suppression, participants experienced an improvement in Worry scores. These two results provides support for H2.

Re-introduction of the VTDT (VTDT2, phase B) showed reduction in score to a mean of 9.40 (SD = 0.66, d = 1.65). This is a large effect size: after using VTDT again, participants experienced an improvement in Worry scores. This provides support for H1. At one month follow up (FU) scores stayed at a mean of 9.40 (SD = 0.80, d = 0.00). This lack of effect size shows that after ceasing to use VTDT, there was no experience deterioration in Worry scores. This could be interpreted as providing support for H1, because the VTDT may have caused a sustained reduction in RATs.

Overall the numeral data from the Worry sub-scale provides support for H1 from the use and withdrawal of VTDT1 and from the use of VTDT2. There is support for H2 from the use of TS and its withdrawal.

Visual inspection of the data in Figure 13 for Worry shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downwards movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data appears to provide support to numerical data evidence for H1 and H2.
Table 12. TCQ Worry: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Worry</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MB1</td>
<td>VTDT 1</td>
<td>B2</td>
<td>TS</td>
<td>B3</td>
<td>VTDT 2</td>
<td>FU</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.47</td>
<td>0.64</td>
<td>0.78</td>
<td>1.25</td>
<td>1.49</td>
<td>0.66</td>
<td>0.80</td>
</tr>
<tr>
<td>Cohen’s d</td>
<td>1.16</td>
<td>1.41</td>
<td>2.79</td>
<td>2.16</td>
<td>1.65</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

Figure 13. TCQ Worry: changes across VTDT, baselines, thought suppression and follow up

4.2.1.e TCQ Social Control

This TCQ sub-scale measured recent attempts to control aspects of unwanted thoughts e.g. “I talk to a friend about the thought.” Data from this sub-scale of social control is summarised in Table 13 and graphically in Figure 14, below showing means, standard deviations Cohen’s d across the three interventions, three baselines and follow ups. The mean baseline scores (MB1, phase A) across the 10 participants were 12.70 (SD = 0.78). The first use of the VTDT intervention (VTDT1, phase B) this mean score showed an improvement to 12.20 (SD = 0.40, d = 0.81). This is a large effect size the first VTDT intervention, and can be taken as supporting H1. The return to baseline (B2,
return to phase A) showed a move back up to a mean of 12.10 (SD = 0.70, d = 0.18). This small effect size result can be seen as providing little support for H1, or be possibly indicative of a maintenance of the VTDT effect after cessation of its use.

Thought suppression (TS phase C) showed an increase in score to a mean of 13.50 (SD = 0.50, d = 2.30). This is a large effect size; after using thought suppression, participants had an increase in Distraction scores (i.e. they would get worse). This result provides support for H2. Cessation of thought suppression (B3, phase A) showed overall improvements to a mean of 12.30 (SD = 0.46, d = 2.50). This is a large effect size, after participants ceased to use thought suppression, improvement in Social Control scores occurred. This result also provides support for H2.

Re-introduction of the VTDT (VTDT2, phase B) showed some small reduction in score to a mean of 12.10 (SD = 0.46, d = 0.30). This is a relatively small effect size, and provides only moderate support for H1. At one month follow up (FU) scores stayed at a mean of 12.10 (SD = 1.14, d = 0.00). These two results provide little support for H1.

Overall the numeral data from the social control sub-scale provides support for H1 from the use of VTDT1. No support comes from both VTDT cessations and second use of VTDT. There is support for H2 from the use of TS and its withdrawal.

Visual inspection of the data in Figure 14 for Social Control shows overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downwards movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data appears to provide support H1 and H2 in terms of VTDT positive effect, and negative influence of TS.
Table 13. TCQ Social Control: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Social Control</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>MB1</td>
<td>VTDT 1</td>
<td>B2</td>
<td>TS</td>
<td>B3</td>
<td>VTDT 2</td>
<td>FU</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.78</td>
<td>0.40</td>
<td>0.70</td>
<td>0.50</td>
<td>0.46</td>
<td>0.83</td>
<td>1.14</td>
</tr>
<tr>
<td>Cohen's d</td>
<td>0.81</td>
<td>0.18</td>
<td>2.30</td>
<td>2.50</td>
<td>0.30</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 14.** TCQ Social Control: changes across VTDT baselines, thought suppression, and follow up

4.2.1.f TCQ Mean Totals

The data from the mean total TCQ scores is presented in Table 14 and Figure 15 below. The effect sizes for each condition appear in Figure 16. Examination of the mean total scores of the TCQ provides support for the first use of VTDT (d = 0.85). This is a large effect size and supports H1. Some support comes from the second VTDT intervention (ES = 0.71), a medium (approaching large) effect size; Support for the withdrawal of the use of VTDT is moderate at phase B2 (d = 0.47). No support for the use of VTDT can be seen from withdrawal of VTDT at FU (d = 0.08). The mean total score results provide support for H2, due to the use of TS (d = 0.93, large effect size). Moderate support is found for
H2 due to withdrawal of the use of TS at B3 (d = 0.58, medium effect size).
Overall the numeral data from the total scores on the TCQ provides support for H1 from the first and moderate from second use of VTDT. Moderate support comes from cessation of first VTDT use. No support comes from cessation of the second VTDT use. There is support for H2 from the use of TS and moderate support from its withdrawal.

Visual inspection of the data in Figure 15 for total scores shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downwards movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data appears to provide support for H1 and H2.

**Table 14.** TCQ mean total scores: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Mean total TCQ</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1</td>
<td>VTDT 1</td>
<td>B2</td>
<td>TS</td>
<td>B3</td>
<td>VTDT 2</td>
<td>FU</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>12.92</td>
<td>10.74</td>
<td>11.86</td>
<td>14.40</td>
<td>12.72</td>
<td>10.84</td>
<td>11.06</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>2.90</td>
<td>2.22</td>
<td>2.49</td>
<td>2.94</td>
<td>2.83</td>
<td>2.45</td>
<td>2.73</td>
</tr>
<tr>
<td>Cohen’s d</td>
<td>0.85</td>
<td>0.47</td>
<td>0.93</td>
<td>0.58</td>
<td>0.71</td>
<td>0.08</td>
<td></td>
</tr>
</tbody>
</table>
4.3.1 General Health Questionnaire

The GHQ results are presented below in their four sub-scales, of Somatic Symptoms, Anxiety and Insomnia, Social Dysfunction, and Severe Depression, with a total TCQ score. Means, standard deviations, effect sizes as appropriate, and percentage of the experimental group that would be expected to score higher or lower than a control group are in tabular and graphical format. The recommended cut-off point for a “positive” result on the GHQ is 6-7, with a score of 13 indicating the possibility of a “psychiatric” issue (Goldberg, et al., 1997).

4.3.1 a GHQ Somatic Symptoms

This sub-measure of the GHQ assesses the degree to which the person has been experiencing Somatic Symptoms in general over the last few weeks (e.g. “have you recently been getting a feeling of tightness or pressure in your head”.

Data from this sub-scale of somatic symptoms is summarised in Table 15 and graphically in Figure 17 below showing means, standard deviations Cohen’s d and interpretation of effect size in terms of percentage of an experimental group that would score higher or lower than the control group across the three interventions, three baselines and follow ups.
The mean baseline scores (MB1, phase A) across the 10 participants was 0.20 (SD 0.42). The first use of the VTDT intervention (VTDT1, phase B) this mean score showed a very slight improvement to 0.10 (SD = 0.32, d = 0.27). This is a small effect size as a result of the first VTDT intervention. The return to baseline (B2, return to phase A) reflected no change with a mean of 0.10 (SD = 0.32, d = 0). This is a lack of effect after cessation of the use of VTDT. These two results provide no support for H1.

Thought suppression (TS phase C) showed no change with a mean of 0.10 (SD = 0.32, d = 0). This lack of effect size reflects no change in Somatic Symptoms after cessation of the use of VTDT. This result provides no support for H2.

Cessation of thought suppression (B3, phase A) showed increases in scores to a mean of 0.70 (SD = 1.49, d = 0.56). This is a medium effect size; ceasing to use thought suppression, was reflected by some improvement in Somatic Symptoms. This result provides support from TS use, and moderate support for H2 from ceasing to use TS.

Re-introduction of the VTDT (VTDT2, phase B) showed a slight increase in score to a mean of 0.80 (SD = 1.25, d = 0.07). This is a very small effect size after the re-introduction of VTDT. This provides no support for H1. At one month follow up (FU) scores moved a small amount back up to a mean of 0.80 (SD = 0.125, d = 0.11). This is a small effect and provides no support for H1. Participants 2 and 5 showed increases in scores at TS through to VTDT2, apparently due to short-term illness, and this is reflected in the small general mean trend upwards in Figure 17 at this section.

Overall the results from Somatic Symptoms sub-scale provide little or no support for H1 from both uses and cessations of VTDT1 and VTDT2. There is no support for H2 from the use of TS and moderate support from its withdrawal of use. The scale of change was very small across the phases.

Visual inspection of the data in Figure 17 for somatic symptoms showed no consistently observable relationship with respect to H1 and H2 from most of the participants as measured by Somatic and they provide no support for H1 and H2.
Table 15. GHQ Somatic Symptoms: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Somatic Symptoms</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1 VTDT 1</td>
<td>0.20</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.70</td>
<td>0.80</td>
<td>0.70</td>
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<tr>
<td>TS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B3 VTDT 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.49</td>
<td>1.48</td>
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<td>FU</td>
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<td></td>
<td></td>
<td></td>
<td>0.56</td>
<td>0.07</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Figure 17. GHQ Somatic Symptoms: Changes across VTDT, baselines, thought suppression, and follow up

4.3.1. b GHQ Anxiety and Insomnia
This sub-measure of the GHQ assesses the degree to which the person has been experiencing anxiety and insomnia in general over the last few weeks (e.g. “have you been feeling nervous and strung-up all the time?” being a typical anxiety question).

Data from this sub-scale of Anxiety and Insomnia is summarised in Table 16 and graphically in Figure 18 below showing means, standard deviations Cohen’s d across the three interventions, three baselines and follow ups.
The mean baseline score (MB1, phase A) across the 10 participants was 3.80 (SD 1.23). The first use of the VTDT intervention (VTDT1, phase B) this mean score showed improvement to 2.50 (SD = 0.71, d = 1.29). This is a large effect size as a result of the first VTDT intervention. The return to baseline (B2, return to phase A) showed an increase up to a mean of 3.70 (SD = 0.95, d = 1.43). This is a large effect size after cessation of the use of VTDT. These two results provide support for H1.

Thought suppression (TS phase C) showed deterioration to a mean of 4.60 (SD = 1.65, d = 0.67). This is a medium effect after cessation of the use of TS. This result provides some support for H2. Cessation of thought suppression (B3, phase A) showed a decrease in scores to a mean of 3.80 (SD = 0.92, d = 0.67). This is a medium effect size showing some improvement in Anxiety and Insomnia scores. These results provides moderate support for H2.

Re-introduction of the VTDT (VTDT2, phase B) showed a decrease in score to a mean of 2.40 (SD = 0.84, d = 1.59). This large effect size after re-introduction of VTDT; this provides support for H1. At one month follow up (FU) scores moved up small amount to a mean of 2.80 (SD = 0.79, d = 0.49). This is approaching a medium effect following the cessation of the use of VTDT a second time, and provides moderate support for H1.

Overall the results from the Anxiety and Insomnia sub-scale provide good support from VTDT1 and its cessation, and moderate support from VTDT2 and its cessation. Moderate support for H2 comes from the use and cessation of use of TS.

Visual inspection of the data in Figure 18 for anxiety and insomnia shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downwards movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at below initial baseline measures. The overall evidence from visual inspection of data appears to support H1 and H2.
Table 16. GHQ Anxiety and Insomnia: Changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Anxiety &amp; Insomnia</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1 VTDT 1 TS B2 B3 VTDT 2 FU</td>
<td>3.80</td>
<td>2.50</td>
<td>3.70</td>
<td>4.60</td>
<td>3.80</td>
<td>2.40</td>
<td>2.80</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.23</td>
<td>0.71</td>
<td>0.95</td>
<td>1.65</td>
<td>0.92</td>
<td>0.84</td>
<td>0.79</td>
</tr>
<tr>
<td>Cohen’s d</td>
<td>1.29</td>
<td>1.43</td>
<td>0.67</td>
<td>0.67</td>
<td>1.59</td>
<td>0.49</td>
<td></td>
</tr>
</tbody>
</table>

Figure 18. GHQ Anxiety and Insomnia: Changes across VTDT, baselines, thought suppression, and follow up

4.3.1.c GHQ Social Dysfunction

This sub-measure of the GHQ assesses the degree to which the person has been experiencing social dysfunction in general over the last few weeks (e.g. “have you been able to enjoy your normal day to day activities?”).

Data from this sub-scale of Social Dysfunction is summarised in Table 17 and graphically in Figure 19 below showing means, standard deviations and Cohen’s d across the three interventions, three baselines and follow ups. The mean baseline scores (MB1, phase A) across the 10 participants was 4.20 (SD 1.23). At the first use of the VTDT intervention (VTDT1, phase B) this mean
score showed improvement to 2.50 (SD = 0.71, d = 1.70). This is a large effect size as a result of the first VTDT intervention. The return to baseline (B2, return to phase A) showed an increase up to a mean of 3.70 (SD = 0.95, d = 1.43). This is a large effect size following cessation of the use of VTDT. These two results provide support for H1.

Thought suppression (TS phase C) showed deterioration to a mean of 5.10 (SD = 1.10, d = 1.36). This is a large effect size after cessation of the use of VTDT. This result provides support for H2. Cessation of thought suppression (B3, phase A) showed a decrease in scores to a mean of 4.00 (SD = 1.05, d = 1.02). This is a large effect size after ceasing to use thought suppression, participants experienced an improvement in Social Dysfunction. This result also provides support for H2.

Re-introduction of the VTDT (VTDT2, phase B) showed a decrease in score to a mean of 2.40 (SD = 0.52, d = 1.93). This is a large effect size after the re-introduction of VTDT. This provides support for H1. At one month follow up (FU) scores moved up to a mean of 2.70 (SD = 0.82, d = 0.43). This is approaching medium effect size following the cessation of the use of VTDT. This provides moderate support for H1.

Overall the results from the Social Dysfunction sub-scale provide good support for H1 from VTDT1 and VTDT2 and cessation of VTDT1, and moderate support from cessation of VTDT2. Good support comes for H2 from the use of TS and cessation of the use of TS.

Visual inspection of the data in Figure 19 for Social Dysfunction shows overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downwards movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data appears to provide support for H1 and H2.
Table 17. GHQ Social Dysfunction: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Social Dysfunction</th>
<th>A1</th>
<th>B</th>
<th>A2</th>
<th>C</th>
<th>A3</th>
<th>B</th>
<th>FU</th>
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<tbody>
<tr>
<td>MB1</td>
<td>4.20</td>
<td>2.50</td>
<td>3.70</td>
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<td>2.40</td>
<td>2.70</td>
</tr>
<tr>
<td>Mean</td>
<td>1.23</td>
<td>0.71</td>
<td>0.95</td>
<td>1.10</td>
<td>1.05</td>
<td>0.52</td>
<td>0.82</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.70</td>
<td>1.43</td>
<td>1.36</td>
<td>1.02</td>
<td>1.93</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td>Cohen's d</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 19. GHQ Social Dysfunction: Changes across VTDT, baselines, thought suppression, and follow up

4.3.1.d GHQ Severe Depression

This sub-measure of the GHQ assesses the degree to which the person has been experiencing social dysfunction in general over the last few weeks (e.g. “have you been thinking of yourself as a worthless person?”). Data from this sub-scale of Severe Depression is summarised in Table 18 and graphically in Figure 20 below showing means, standard deviations Cohen's d across the three interventions, three baselines and follow-ups. Overall the results from Severe Depression provide no support to either H1 or H2.
The mean baseline scores (MB1, phase A) across the 10 participants was 0. The participants did not record a score in any of the conditions apart from cessation of thought suppression (B3, phase A) and re-introduction of the VTDT (VTDT2, phase B). The mean scores were both 0.20 (SD = 0, d = 0). The results from the Severe Depression sub-scale do not support either H1 or H2. Visual inspection of the data in Figure 20 showed no clear overall relationship to the phases.

**Table 18.** GHQ Severe Depression: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Severe Depression</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1</td>
<td>0.00</td>
<td>0.00</td>
<td>B2</td>
<td>TS</td>
<td>B3</td>
<td>VTDT 2</td>
<td>FU</td>
</tr>
<tr>
<td>Mean</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.20</td>
<td>0.20</td>
<td>0.00</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.42</td>
<td>0.42</td>
<td>0.00</td>
</tr>
<tr>
<td>Cohen d</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

![GHQ- Severe Depression](image)

**Figure 20.** GHQ Severe Depression: Changes across VTDT, baselines, thought suppression, and follow up
4.3.1.e GHQ Mean Totals

The data from the mean total GHQ scores is presented in Table 19 and Figure 21 below. The effect sizes for each condition appear in Figure 22. Examination of the mean total scores of the GHQ provides only approaching moderate support for the use of VTDT at both points in the investigation (d = 0.45, 0.43, respectively). Support for the withdrawal of the use of VTDT is weak at phase B2 (d = 0.38). No support for the use of VTDT can be seen from withdrawal of VTDT at FU (d = 0.16). The mean total score results provides no support for H2, due to the use of TS (d = 0.25. No support is found for H2 due to withdrawal of the use of TS at B3 (d = 0.12).

Overall the results from the total scores of the GHQ provide weak approaching moderate support for H1 from VTDT1 and weak support from cessation of both phases of VTDT. No support for H2 can be seen from the use of TS and weak from cessation of TS. Visual inspection of the data in Figure 21 and 22 shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downward movement to levels similar to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at or below initial baseline measures. The overall evidence from visual inspection of data appears to provide some support for H1 (VTDT1, VTDT 2 and cessations) and support for H2 (TS use and cessation).
Table 19. GHQ means total scores: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Mean total GHQ</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB1 VTDT 1 B2</td>
<td>2.05</td>
<td>1.25</td>
<td>1.88</td>
<td>2.45</td>
<td>2.18</td>
<td>1.45</td>
<td>1.55</td>
</tr>
<tr>
<td>Mean</td>
<td>2.16</td>
<td>1.35</td>
<td>1.96</td>
<td>2.62</td>
<td>2.02</td>
<td>1.32</td>
<td>1.48</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.45</td>
<td>0.38</td>
<td>0.25</td>
<td>0.12</td>
<td>0.43</td>
<td>0.16</td>
<td></td>
</tr>
</tbody>
</table>

Figure 21. Mean total GHQ scores across conditions
4.4 Numbers of Ruminative and Intrusive Thoughts - RATs

The recording of the incidences of RATs data is summarised in Table 20 showing means, standard deviations Cohen’s d. Graphical representation are in Figure 23 mean number RATs across the conditions and Figure 24 effect size across the three interventions, three baselines and follow ups.

The mean baseline scores (MB1, phase A) across the 10 participants was 36.30 (SD 7.54). After the first use of the VTDT intervention (VTDT1, phase B) the mean score showed an improvement to a mean of 22.00 (SD = 2.67, d = 2.53). The return to baseline (B2, return to phase A) showed deterioration with a mean of 31.60 (SD = 5.44, d = 2.26). Mean RATS score lower as a result of the first VTDT intervention and higher after the cessation of the first use of VTDT, with high effect sizes. These two results both provide support for H3.

Thought suppression (TS phase C) showed increases in RATs to a mean of 41.10 (SD = 8.03, d = 1.38). This is a high effect size as a result of the use of TS. This result provides support for H4. Cessation of thought suppression (B3, phase A) showed decreases in scores to a mean of 35.50 (SD = 6.45, d = 0.80). This is a high effect size after ceasing to use thought suppression, reflecting participants experiencing an improvement in RATs. This result provides support for H4.

Re-introduction of the VTDT (VTDT2, phase B) showed a decrease in score to
a mean of 21.90 (SD = 3.25, d = 2.63). This is a large effect size after ceasing to use thought suppression, participants experienced an improvement in RATs. This provides support for H3. At one month follow up (FU) scores moved back up to a mean of 29.56 (SD = 6.33, d = 1.52). This is a large effect size after ceasing to use VTDT participants experienced an increase in RATs. This also provides support for H3. Overall the above results from RATs provide support for both H3 and H4.

Visual inspection of the data for RATs shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downwards movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at below initial baseline measures. The overall evidence from visual inspection of data provides support for H3 and H4.

Table 20. RATs: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>Number</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MB1</td>
<td>VTDT 1</td>
<td>B2</td>
<td>TS</td>
<td>B3</td>
<td>VTDT 2</td>
<td>FU</td>
</tr>
<tr>
<td>Mean</td>
<td>36.30</td>
<td>22.00</td>
<td>31.60</td>
<td>41.10</td>
<td>35.30</td>
<td>21.90</td>
<td>29.56</td>
</tr>
<tr>
<td>RATS</td>
<td>7.54</td>
<td>2.67</td>
<td>5.44</td>
<td>8.03</td>
<td>6.45</td>
<td>3.25</td>
<td>6.33</td>
</tr>
<tr>
<td>SD</td>
<td>2.53</td>
<td>2.26</td>
<td>1.38</td>
<td>0.80</td>
<td>2.63</td>
<td>1.52</td>
<td></td>
</tr>
</tbody>
</table>
Figure 23. Mean number of RATs: Changes across VTDT, baselines, thought suppression, and follow up

Figure 24. Effect sizes and mean RATs scores across conditions

4.5 Subjective units of distress-SUDs

The recording of the incidences of RATs data is summarised in Table 21 below showing means, standard deviations Cohen’s d and interpretation of effect size
across the three interventions, three baselines and follow up. Graphical representation is in Figure 25 mean number SUDs by participant and Figure 26 effect sizes and mean SUDs scores across the conditions.

The mean baseline scores (MB1, phase A) across the 10 participants was 6.90 (SD 0.74). After the first use of the VTDT intervention (VTDT1, phase B) the mean score showed an improvement with a large effect size, to a mean of 4.40 (SD = 0.52, d = 3.91). The return to baseline (B2, return to phase A, cessation of the first use of VTDT) showed deterioration with a mean of 6.00 with a large effect size (SD = 0.67, d = 2.67). These two results provide support for H5.

Thought suppression (TS phase C) showed increases in SUDs to a mean of 7.80 (SD = 0.42, d = 3.21). This is a large effect size following the use of TS. Cessation of thought suppression (B3, phase A) showed decreases in scores to a mean of 6.30 (SD = 0.48, d = 3.33). This is also a large effect size after ceasing to use thought suppression; participants experienced an improvement in RATs. Both these last two results provide support for H6.

Re-introduction of the VTDT (VTDT2, phase B) showed a decrease in score to a mean of 4.00 (SD = 0.82, d = 3.42). This is a large effect size after using VTDT again, reflecting participants experiencing improvements in SUDs. This provides support for H5. At one month follow up (FU) scores moved back up to a mean of 5.22 (SD = 0.67, d = 1.63). This is a large effect size after ceasing to use VTDT; participants experienced an increase in SUDs. This provides support for H5.
Table 21. SUDs: changes across VTDT, baselines, thought suppression, and follow up

<table>
<thead>
<tr>
<th>SUDs</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>C</th>
<th>A</th>
<th>B</th>
<th>FL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean SUDs</td>
<td>6.90</td>
<td>4.40</td>
<td>6.00</td>
<td>7.80</td>
<td>6.30</td>
<td>4.00</td>
<td>5.2</td>
</tr>
<tr>
<td>SD</td>
<td>0.74</td>
<td>0.52</td>
<td>0.67</td>
<td>0.42</td>
<td>0.48</td>
<td>0.82</td>
<td>0.6</td>
</tr>
<tr>
<td>Cohen's d</td>
<td>3.91</td>
<td>2.67</td>
<td>3.21</td>
<td>3.33</td>
<td>3.42</td>
<td>1.6</td>
<td></td>
</tr>
</tbody>
</table>

![Mean Number of SUDs](image)

**Figure 25.** Mean number of SUDs: Changes across VTDT, baselines, thought suppression, and follow up

![Cohen's d](image)

**Figure 26.** Effect sizes and mean SUDs scores across conditions
Visual inspection of the data for SUDs shows clear overall movements downwards from baseline after VTDT. After cessation of VTDT, a general trend upwards is seen. After implementation of TS an increase is observable. After cessation of TS there is an overall downward movement. Implementation of VTDT a second time showed a further downwards movement to levels similar or below to when VTDT was first used. After cessation of VTDT the score moved back up again, but remained at below initial baseline measures. The overall evidence from visual inspection of data appears to provide support for H5 and H6.

4.6 Qualitative Data

The transcripts from the follow up interviews from the adapted Client Change Interview Protocol (Elliot, Slatick & Urman, 2006, were subjected to comparison and cross-checking of the consistency of information generated. Consistent and constant themes emerged, with no new material being generated, and consensus was reached between the researcher and the interviewer. An example of the coding used on transcript extracts can be found in Appendix 8. These multi-layered systems are presented in Figure 27 and Figure 28 below. Question 1 was a general open-ended one about current general state and experience of participation in the research project. Figure 27 is mainly, but not exclusively related to question 2 in the schedule, which addresses aspects of change, inviting open ended responses. Question 3 addressed qualitative change ratings. Subsequent questions (4, 5, 6, 7, 8, and 9 in the schedule) were more specific in nature, addressing helpful aspects, attributions, resources, problematic issues, limitations and future suggestions about the changes experienced during the research. These questions are reproduced in Table 22 below, with elicited categories and themes summarised in Figure 28. Some brief quoted verbatim extracts are used to add clarity; the author has added some explanatory italicised text in brackets to some of these where the interviewer noted verbal emphasis or non-verbal behaviour. Whilst the elicited themes were clearly individually identifiable, there was interaction between them. This is illustrated in the figures by means of unidirectional flow...
chart arrows where there was directionality indicated, and bi-directional arrows where the directionality was two-way action.
The general questions 1a indicated that nine participants reported being “OK” or “fine”. Open-ended enquiry aimed at expansion of responses did not elicit further comment, apart from one of the participants reporting feeling low due to deterioration in the state of their relationship (see also question eight, theme two later). This deterioration had started during the mean baseline period and continued throughout the course of the research project. Responses to how has it felt to be in the research project showed that eight out of the ten participants found that participation in the projection has been challenging due to the amount of time that involvement took. This number was higher than the five participants that contributed to question nine theme two. The difference is accounted for by two that reported that the time challenges were largely due to one them getting a new job, and the other in starting on a part-time college course, and one participant reported being on Paracetamol tablets for influenza for the last week of the research project. Nine participants reported being on no medication at all during the research period.

Table 22. Specific questions used to elicit qualitative participant responses

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Sum up what has been helpful about your participation in the research study</td>
</tr>
<tr>
<td>5</td>
<td>What do you think has caused the various changes with respect to your RATs that you described? In other words, what do you think might have brought them about?</td>
</tr>
</tbody>
</table>
| 6 | 6a. What personal strengths do you think have helped you make use of the research study to deal with your problems? (what you’re good at, personal qualities).
|   | 6b. What things in your current life situation have helped you make use of the research study to deal with your problems? (family, job, relationships, living arrangements). |
| 7 | 7a. What kinds of things about the research study have been hindering, unhelpful, negative or disappointing for you? (For example, general aspects. |
specific events).
7b. Were there things in the research study which were difficult or painful but still OK or perhaps helpful? What were they?
7c. Here is a copy of the data collected from you during the study. Please take as long as you like to look at it. After viewing this data, are any of the previous responses you made to the above questions different to when you first made them?

8  8a. What personal weaknesses do you think have made it harder for you to use the protocols you learned during the research study to deal with your problems? (things about you as a person).
8b. What things in your life situation have made it harder for you to use the protocols you learned research study to deal with aspects of problems in your life (family, job, relationships, living arrangements)?

9  Suggestions. Do you have any suggestions for us, regarding the research or the research study? Do you have anything else that you want to tell me?

Changes noticed in participants by themselves, since the research started was the starting point for question 2a. Invitations were given verbally for participants to express responses to how the participants were feeling, thinking or behaving differently from the way they did before participating the study. They were also asked if specific ideas, if any, had emerged from the research, including ideas about themselves or other people. They were asked if any changes about them during the course of the study had been brought to their attention by other people. Four categories emerged (Figure 27), general thought related responses (two themes), TS related responses (three themes), and VTDT related responses five themes), and one category that was the lack of external noticing by others of differences in the participants due to the research project (one theme).
The first theme in Figure 27 from general thought related responses category was an awareness that emerged during the study that thoughts were just thoughts (seven participants). Typical replies were “I came to realise that thinking is sometimes over-rated, they are only thoughts.” Another was
“watching my thoughts helped me realise that they are just words in my head.” The second theme had eight of the participants reporting that during the study, they found that they had developed an awareness that RATs “… seemed to have a life of their own.” Also for the second theme, one report was that “My stomach grumbles sometimes without asking my permission, and I guess that negative thoughts just seem to appear like that, sort of on their own without me wanting them to be there.” Another reported that RATs “seem to appear willy-nilly at inappropriate and at unhelpful times, why do they do that?” These results can be interpreted as supporting that the use of VTDT is supported (research question). This is because the awareness of thoughts being thoughts (theme 1) and RATs operating independently is concurrent with concept of comprehensive distancing (see Zettle 2005 for a review) from certain troublesome cognitive processes. The responses show that seven of the ten participants for theme one and eight of the ten for theme two objectified particular thoughts through the use of VTDT and TS.

The first theme in Figure 27 from TS related responses category was that participants noticed that they had been using thought suppression as a tactic to try and deal with RATs, prior to taking part in the study (eight participants). One response was “taking part in the study helped me see that I had been trying to push things in my head (thoughts) to the side.” Another reported that “it was a bit weird actually formally trying to suppress thoughts (in the study), I sort of realised that that is what I used to do anyway.” The second theme from TS related response was the conclusion reached by eight of the participants was that they were less likely to use TS in the future, or be more aware that TS might not me a fruitful tactic to deal with RATs. This theme elicited typical responses like “I kind of picked up that thought suppression actually has a negative effect. I did not really realise that before the study.” A comment from another participant, after having made a similar statement was “I am definitely going to try and not use thought suppression in future, but I will probably slip into it now and again.” The eight contributors to this second theme were not exactly the same eight as the first theme, but there was overlap on five participants. The third theme in TS related responses was the awareness that was expressed (three participants) that other people they knew exercised the
potentially unfruitful tactic of TS. An example is “I came to realise that other people I know use thought suppression. I can think of a few when I think about it.” The negative attributions to use of TS indicted by all three of these themes provide support to the assertion in research question B that the use of TS is undesirable. A link between the first theme in General Thought Related Responses and the second theme of TS related response was found in seven of the participants. A typical response was that “thoughts, like, seemed to increase through trying to crush them.” This link provides support to research question 2 that TS is undesirable.

The VTDT related response category in Figure 27 generated 5 themes. Two participants felt the inclination to use VTDT in future episodes of RATs. Both response were similar along the lines of “I might try and use it (VTDT) as a tool when I need to”. Six of the participants reported personal embarrassment at using VTDT. An example is “It felt pretty weird doing gibberish. I thought it might feel more comfortable over time, but it still felt embarrassing whenever I did it.” A similar number of six participants (not the same six, but there was some overlap with four falling into both themes), reported that the VTDT had a calming effect. “It (VTDT) feels a bit like meditation.” Another reported “It definitely switches off the thoughts whilst you were doing the gibberish.” A different participant reported, “The RATs did seem to stay away for a while after using the gibberish, not just whilst using it.” This theme links with responses to question 4 (Figure 28) that also alluded to calming effects. Two of the participants whose responses were in this theme, also gave responses that they might deliberately use VTDT as a tactic in the future. These results support the assertion in research question A, that the use of VTDT intervention is useful. However, eight participants said that they were disinclined to use VTDT in the future. Contributing to this disinclination was the personal embarrassment felt at using VTDT (six participants). A typical example of a specific statement that encompasses this embarrassment and disinclination was “I can’t see myself using the gibberish in the future, as it feels a bit mad, even though it did seem to calm me down, like being in a bit of a trance.” This might be interpreted as partly supporting research question A due to a calming effect, but potentially not supporting it due to the personal embarrassment at using VTDT, a mixed
finding. The fifth theme related to concerns over the length of time that one might have to use VTDT in order to dispel RATs. Three participants contributed to this theme. A typical response was “I can’t see myself doing gibberish all day to get rid of the crap in my head (thoughts), that would be stupid.” This theme result can be interpreted as not supporting the assertion in research question A, due to negative attributions given by these participants to the use of VTDT.

As shown on Figure 27, all ten participants reported that colleagues, family or friends had reported no differences in the participant since taking part in the research study. Eight of ten participants did not notice if anything had changed for the worse since the research study started (question 2b), this is not shown on Figure 27 with a view to keeping the diagrams as clear as possible. The two that did report changes for the worse, explained that these changes were due to the deterioration of a relationship and pressure from having started a new job. Also not shown not shown on Figure 27 are the responses when participants were asked if there is anything that you wanted to change that hasn’t since the research started. Six out of ten responded that that there was. Three of these responses were broadly in the theme of feeling less stressed, and three of wanting to feel “happier”. These results cannot be taken as supporting the assertions of research question A or B.
Figure 27. Themes emerging from analysis of responses to questions about change
On Figure 28, responses from question 4 (helpful aspects of participation in the research) eight of the ten participants in the study reported that they had a new awareness of a randomness aspect to the emergence of RATs (theme 1). One illustrative response was that, “The repetitive thoughts I get seem to appear without any particular reason.” Another was that, “The thoughts seem to have a life of their own, they are often not linked to something that someone has said or done, or to something that has happened.” These responses were qualitatively different to the awareness that thoughts are just thoughts generated in Figure 27, general thought related responses, theme 1. This can be interpreted as supporting the beneficial effects of VTDT in research question A. The above two themes on Figure 28 were interlinked by nature of responses like the one above, and represented by the double arrow in the Figure. Theme 2 here, also linked with theme 2 of question 8, the calming effect of the VTDT led to the temptation of using VTDT in the no gibberish phases. Despite this temptation, no participants reported actually using the VTDT other than during the actual proscribed phases. A typical response was “it was tempting to use VTDT at other times, but I didn't because the thoughts were not that bad, and I thought it might mess up the study.” This reticence cannot be taken as supporting the assertions of research question A and B.

Question 5, attributions to change showed a clear establishment of the hypothesis that the use of TS was instrumental in an increase in the incidence of RATs and associated SUDs. All ten participants noted this link. Most noticeable were statements like “I felt that trying to crush the thoughts made them worse.” One participant reported that taking part in the study “made me realise that what I used to do in trying to push my thoughts away, actually might not have been the best thing to do.” This can be taken as supporting the assertion of research question that the use of TS is undesirable. Theme 2 generated from this question (four participants) made the attribution that VTDT was the test condition. An illustrative response was “I guess you were really looking into how the VTDT worked. On asking for clarification on this point, the participant reported, “Possibly because you asked us to do it twice.” One other participant reported that the attribution was “Because the gibberish (VTDT) seemed to work.” In participants 2 and 5 there was a small increase in
depression picked up by the GHQ at B3, after the TS phase. This was attributed to external life events that the participants did not link with changes in RATs. This short term increase in depression lasted until the end of the second VTDT phase, and declined at FU. The increase was not at what is generally recognised to be at therapeutically significant levels, and does not have an effect on research question s A and B.

The enquiries about resources and personal strengths (question 6) elicited two responses. These referred to one participant getting a new job and another starting a college course as being positive factors that might have helped make use of protocols used in the study. The timing of these factors did not appear to interact in any specifically identifiable way with other concurrent reports of RATs, SUDs or psychometric measures. The job referred to was procured after the end of the second VTDT phase, and the course started during the B3 post second VTDT phase later on in the study. There was interaction of both participants to question 7 theme 3, about time commitment to the project problems. Three participants reported that they were resilient (question 6 theme 2) and robust in their personalities, and this might have been a factor in helping them deal with RATs in general, or in complying with the two protocols, and withdrawal from them. “I am a sort of get on with it person, who uses what there is there is at the time,” was a typical response.

Four out of ten participants reported finding the TS condition unpleasant (question 7 theme 1). This might be a contributor to theme 1, question 5, the inference of a causal relationship between TS use and an increase in RATs and SUDs. This supports the assertion of research question 2 that the use of TS is undesirable. This question also elicited the theme from three participants, that use of the VTDT was “embarrassing”, even though it was done in private. One specific response was “it felt awkward and a bit weird to use the VTDT, but because it was a research study, I stuck at it.” This same person reported a resilient personality in question 6, theme 2, hence the link between these two themes. Another response was “that I am not sure that I would think use the technique on my own, because it feels silly.” These results do not support the assertion of research question A that VTDT is useful.

Another problematic aspect that emerged from question 7 was the four
responses that contributed to theme 3. These referred to the amount of time it took to go to appointments to receive instruction in the protocols and to fill out the questionnaires. One responder commented “I am not sure that I would like to take part in another research study.” When the interviewer asked for expansion on this, the reply was “frankly... it was a bit of a pain having to come to the appointments and commit to doing the stuff.” A final theme to emerge from this question about potential problematic aspects was that no participants wanted to change responses after perusal of summaries of the psychometric results. This could feed into potentially being a contributor to the two attribution themes elicited from question 5; i.e. that the psychometric results did not come as a particular surprise, and confirmed the hypotheses already reached by the participants (ten responses to question 5, theme 1).

Limitations identified by three participants (question 8, theme 1) were the temptation to use VTDT in the non-VTDT phases. This should be contrasted to the embarrassment experienced during the use of VTDT (question 7, theme 2). An example of a response was “I felt like trying the VTDT when I got waves of thoughts.” When further enquiry was made, the follow up response was “I didn’t, as I knew it was part of a research study.” One participant reported that deterioration of his relationship might have had an impact on his level of RATs. Examination of his diary reports of RATs, SUDs and psychometrics did not appear to confirm this. This finding does not impact on research question A and B.

The final question 9 about suggestions for future research produced two themes. The first was to have fewer phases in order to avoid potential confusion about which phase the participant was currently engaged in (three participants). An illustrative response was “I sometimes was not sure which phase I was in, found myself having to check.” On further probing about whether the participant had actually got mixed up, the response was “probably, but I can’t be sure.” The second separate, but potentially linked to the previous theme about confusion was the suggestion by half of the participants that a shorter time frame for research in future. One typical response was “The project did seem to drag on a bit.” Another was “It was a bit inconvenient to attend some of the appointments, I sort of fizzled a
bit, especially towards the end bit."
Figure 28. Themes emerging from analysis of responses to question 4-9 of semi-structured interview
5. DISCUSSION

In the discussion I will first consider the conclusions reached from the results obtained in the study. This will be done by looking at the implications of the results for six hypotheses, and the two general qualitative questions from the use of semi-structured interview looking at support for the use of the VTDT intervention, and that the use of TS might be undesirable. These results will also be discussed in the context to relevant existing literature. Evolving from these discussions there is presented a proposition for a working model for the operation RATs. Some possible underlying mechanisms for RATs are then considered. Finally some limitations encountered in the study are discussed and potential directions for future research are proposed.

5.1 Overview of conclusions reached in results

The overall purpose of the study is to provide initial empirical data in a structured fashion, on the technique of VTDT developed in therapeutic practice. It also aimed to examine the effect as a comparator of a frequently used tactic of TS as a means of reducing RATs. This was done in the form of six hypotheses and two research questions. These are listed in the results section and are discussed sequentially below. It is apparent that there are clearly observable changes that occur in a fairly broad collection of measures and associates of RATs. These changes may be interpreted as a consequence of two different protocols, VTDT and TS under the conditions constructed in this study. The changes observed are generally consistent in direction when one considers graphical interpretation on the data, and reasonably consistent when one considers the numerical interpretation of the data as expressed through mean and effect size calculations. The main exceptions to the patterns detected were the measurements in the GHQ in somatic symptoms and severe depression. On the MCQ-30 and TCQ the general pattern observed is one of decreasing scores on most sub-measures, after implementation of the VTDT for both the first and second times. That is the participant in general, improved on this measure after using VTDT. After withdrawal of the VTDT both times, the general trend is downwards, i.e. the participants felt worse after VTDT
cessation. After implementation of TS the general trend is for an increase in scores (worsening from the participant’s viewpoint). After ceasing the TS protocol, the scores consistently went down. The overarching research question was “Is the VTDT a technique a useful addition to existing cognitive defusion techniques, and therefore worthy of further systematic research?” The general conclusion is that there is reasonable evidence to support the useful of the VTDT technique, and that it is worthy of future systematic research, particularly perhaps in the context of cognitive defusion. The discussion will expand in more detail with respect to the individual research questions.

1) *Using VTDT has a positive influence (i.e. a reduction) on levels of metacognitions as measured by 3 standardised psychometric measures.*

The three standardised measures used to address H1 where the MCQ 30, the TCQ and the GHQ. From the MCQ 30 data, strong numerical evidence in support of H1 was found in all five sub-scales but not from all the relevant conditions. Specifically these were Cognitive Confidence (VTDT2 ES = 0.88); Need or Control (VTDT1 and 2, ES = 1.30, 1.61) and withdrawal from VTDT1 (ES = 0.81); Cognitive Self-Consciousness (VTDT 1 and 2 ES = 1.03, 0.86); Positive Beliefs (VTDT1 and 2 ES = 1.00, 0.88) and withdrawal of VTDT2 (ES = 0.88); Negative Beliefs (VTDT1 and 2 ES = 1.82, 1.67 and cessation from VTDT 1 and 2 ES = 1.42, 1.64). Moderate support for RQ1 came from Cognitive Confidence (use and withdrawal VTDT1, withdrawal from VTDT2), Need for Control (VTDT2 withdrawal), Cognitive Self-Consciousness (withdrawal from VTDT1 and 2) and total scores (VTDT1, VTDT2, withdrawal VTDT1). No or weak support comes from Positive Beliefs about Worry (withdrawal of VTDT1) and from the total scores in general.

The overall evidence from visual inspection of this MCQ-30 data appears to provide good support for H1, demonstrated by the clear and consistent patterns of change across the phases of the study. Specifically, VTDT perceptibly reduced scores on the MCQ-30 data and cessation of VTDT increased scores across both VTDT implementation and withdrawal phases. Taken overall (exceptions indicated), the MCQ-30 data numerical data supports the view that
VTDT use does appear to have clear positive impacts on a wide range of negative meta-cognitive processes targeted by this measure. The desirability and practicality of implementing the use of VTDT in therapeutic and non-therapeutic settings needs to be moderated and considered in light of the qualitative findings (see later). These results do not prompt the author into a crusade of implementation of VTDT, but merely to point out that there seems to be a case from the MCQ-30 data to warrant further future investigation of VTDT as an additional cognitive defusion technique.

From the TCQ data, the good numerical evidence in support of H1 comes mainly from the four of the five sub-scales, but not from all the relevant conditions. Specifically these were Distraction, Punishment, Re-appraisal, Worry (VTDT1, VTDT2 ES all > 2, cessation VTDT1 > 1). The Social Control sub-scale only provided good support in VTDT1 (ES = 0.81). The totals of the TCQ only provided good support from VTDT1 (ES = 0.85). Moderate support comes from Distraction (cessation of VTDT2), and total score from VTDT2. No support for H1 comes from Punishment, Worry and Social Control from the withdrawal of VTDT2) or for VTDT2 for Social Control.

As with the MCQ-30, the overall evidence from visual inspection of data for the TCQ provides reasonably consistent support for H1. This is demonstrated by the clear and consistent perceptible patterns of change across the phases of the study, with VTDT reducing scores on the TCQ, cessation of VTDT increasing scores across both VTDT implementation and withdrawal phases. Despite the results not being as robust in favour of H1 from the TCQ as from the MCQ-30, there is still support for it when considered overall. The moderating comments made above with respect to the MCQ-30 about not making overarching claims from the overall positive nature of the results, needs to be echoed here for the TCQ.

From the GHQ, the best numerical evidence in support of H1 comes from two of the four sub-scales. Good support comes from Anxiety and Insomnia (VTDT1, cessation of VTDT1, VTDT2 ES = 1.29, 1.43, 1.59) and Social Dysfunction (VTDT1, VTDT2 cessation of VTDT1, ES = 1.70, 1.93, 1.43). Only approaching moderate support came from Anxiety and Insomnia and (VTDT2 cessation),) and the total GHQ (VTDT 1, VTDT2). No support for H1 can be seen from
Somatic Symptoms (VTDT1 and 2) and Severe Depression. Like in the MCQ-30 and TCQ measures, the overall evidence from visual inspection of data for the GHQ provides consistent support for H1. A similar overall pattern to that found in the MCQ-30 and TCQ was apparent. The strongest body of evidence in support of H1 comes from the MCQ-30 and the TCQ, with the GHQ providing support in the areas of Anxiety and Insomnia, Social Dysfunction. The MCQ-30 and TCQ measures are closely related to the potential targets of VTDT and TS. The GHQ is a more wide ranging general measure, incorporating Somatic Symptoms and Severe Depression, and the sample in this study did not display evidence of significant physiologically linked symptoms or depression. The link between RATs (rumination) depression and anxiety was reviewed by Nolen-Hoeksema, Wisco and Lyubomirsky (2008), and it is likely that the relationship between reduction in RATs and decreases in depression might be mediated by the use of VTDT. This link would benefit from future investigation with a clearly identifiable sample exhibiting symptoms of anxiety and depression.

2) Using TS has a negative influence (i.e. an increase) on levels of metacognitions as measured by 3 standardised psychometric measures.

With the MCQ-30, support for H2 came mainly from three of the five sub-scale measures, Cognitive Confidence, Positive and Negative Beliefs about Worry. The good support for TS having a negative influence was Cognitive Confidence (TS phase 0.85), Positive Beliefs about Worry, Negative Beliefs about Worry (TS 1.00, 0.86 and cessation of TS 1.00, 1.16 respectively). Moderate support came from Cessation of TS with Cognitive Confidence, Need for Control (TS weak from cessation), Cognitive Self-Consciousness (TS, approaching good effect size from cessation), total scores were approaching moderate (TS and cessation). Only weak support came from Need for Control (TS cessation). The overall evidence from visual inspection of data provides consistent support for H2. This pattern contrasts quite well across the conditions to those found for H1 with this measure; use of TS increased scores, and withdrawal of TS decreased scores across both TS implementation and withdrawal phases.
The TCQ provided support for H2 from all five sub-measures implementation and cessation in, Distraction, Punishment, Re-appraisal, Worry and Social Control and totals (ES all > .80). The only exception was a moderate effect size from total in TS cessation. Visual inspection of the data gives similar conclusions to those found in the patterns and trends in the numerical data in that an increase in scores is significantly perceptible after the use of TS, and that the scores on the TCQ decreased after cessation of TS. This pattern shift was marked in all the sub-measures.

The GHQ results provide good support for H2 in one of the four sub-scales, that of Social Dysfunction (TS and cessation of TS >1). Anxiety and Insomnia provided moderate support (TS), slightly better from cessation of TS. There was little or no support coming from Somatic Symptoms or Severe Depression or (low-moderate effect from cessation of TS) or the total scores. Visual inspection showed few discernible patterns, apart from Social Dysfunction and Anxiety and Insomnia and total scores. The evidence from visual data was a little more in support of H2 than the numerical data apart from Somatic Symptoms.

5.2 General discussion points H1, H2

As the MCQ and TCQ both purport to measure specific aspects of negative meta-cognitive thought process, it is perhaps unsurprising that the patterns displayed largely match with the first and second hypotheses. The more general measure of well-being, the GHQ, was not as sensitive to variation of the phases in this investigation. The sub-scale of the GHQ perhaps most closely aligned to the MCQ and the TCQ were those of Social Dysfunction and Anxiety and Insomnia, and the least linked was Severe Depression. The results from these two matched the patterns of the results from the MCQ-30 and the TCQ. It is possible that rumination, social dysfunction, anxiety and insomnia might be precursors to depression, but that the “sub-clinical” level of meta-cognitive ruminations were not severe enough to manifest in the form of depressive symptoms. The participants in this study were from a non-clinical population. The idea of a continuum link is also indicated as a clear possibility by Nolen-Hoeksema, Wisco and Lyubomirsky (2008). This leads to the conclusion that RATs in clinical populations manifesting depression is a fruitful area of future
investigation in order to see if a continuum between RATs and depression can be further demonstrated. A potential course of action as a result of these findings is the taking of preventative action to reduce RATs before they potentially become more problematic and become implicated in the development of depression. What the current research does is go some way to answering the question that the deliberate process of using the specific technique of VTDT does appear to have some demonstrable positive value in the above described sub-scales. Whilst it is not suggested that VTDT be introduced as a mitigative process now, it does appear to be worthy further investigation and consideration of potential addition to a therapeutic toolbox of cognitive defusion techniques. A list of cognitive defusion techniques from Gifford, Hayes and Stroshal (2008) was presented in Table 1 in the literature review.

It is interesting to note that across these three psychometric measures, the effects of VTDT picked up on sub-scale measures were not particularly well reflected in the total overall scores. This indicates that factors associated with RATs might be skewed in their relationship with the sub-scale factors measure by the three psychometric measures used. The use of a specifically developed psychometric measure of the characteristics of RATs may address this. Such a measure could be developed by a more precisely defined and dedicated examination of contributing elements of RATs using multivariate analytic methods. It would probably contain similar five sub-scale factors as the MCQ-30 four factors of TCQ (Distraction, Punishment, Re-appraisal, Worry), and Social dysfunction (GHQ). However, development of such a specific tool might be at the cost of generalizability to potentially associated traits. Pragmatism through the use of one psychometric tool rather than three, and specificity of therapeutic purpose would be in favour of the development of such a measure. Another explanation for this inconsistency is that the total scores are diluted by variance in the sub-measures across the phases of the investigation. Another alternative explanation for this anomaly might be that the numerical method of effect size used to try and illuminate elements associated with RATs, might not be particularly reliable. Coe (2002) and earlier Cohen (1969) both acknowledge the dangers of using terms like “small, “medium” and “large” out of context, and any
claims made need to be deliberately modest. The potentially anomalous performance between totals and sub-scale scores with the effect sizes measured here, supports the use of mixed methods approaches to research (Hanson et al. 2005). Then quantitative and qualitative measures can be triangulated or used as co-moderators. The effect sizes were overall larger in the TCQ measure, with the MCQ-30 next, and the weakest support from the GHQ. Overall the evidence from visual inspection of data provided more consistent support for H1 than evidence from the numerical data. This again points to the benefit of using mixed methods in order to moderate any claims being made in support of a particular hypothesis or research question. Here in this study, the numerical data moderates claims in support of H1 and H2 that might accrue from visual inspection of the data.

3. Using VTDT has a positive influence (i.e. a reduction) in meta-cognitions as measured by numbers of RATs.

Numerical data from RATs measurements appears to provide strong evidence within the confines of this study, that there is a clear positive influence on the incidence of certain undesirable types of thoughts through the use of the VTDT protocol. The mean number of RATs started of at 36.30 at MB1, went down to 22.00 after VTDT1, was at 35.30 at B3 and decreased to 21.90 at VTDT2 and back up to 29.56 at FU. It rose back up to 29.56 at FU. The effect sizes (2.53, 2.63) were quite large throughout from both instances of VTDT and from cessation of its use. Even when taking into account the caution recommended by Coe (2002) and Cohen (1969), the effects of VTDT seem to be clear. The observed effects were more pronounced in the direct measurement of RATs than from those observed in general in MCQ-30 and the GHQ with a stronger potential relationship between sub-scales of the TCQ being apparent. The reduction in RATs and observed effects on the TCQ and MCQ-30 were most related in effect size than to those observed in the sub-scales of the GHQ. Effect sizes from the use of VTDT and withdrawal from VTDT with RATs numbers were 2.53, 2.63, 2.26, and 1.52 respectively. Compared to those control of thoughts measures captured by the TCQ, they were of more or less of a similar order of magnitude with Distraction being 2.28, Punishment 2.18, Re-
appraisal 2.70 with Worry at slightly less at 1.16 (but this was still a large effect). The strongest other effects found were in the GHQ (Anxiety and Insomnia 1.29, Social Dysfunction 1.70) and the MCQ-30 (Need for Control, 1.30, Cognitive Self-consciousness 1.03, Positive Beliefs about Worry 1.00, Negative Beliefs about Worry VTDT1 1.82, 1.42 withdrawal; VTDT2 1.67, 1.64 withdrawal). Comparison of visual inspections of the above data mirrors this trend. This is probably indicative of a strong link between these specifically identified aspects of meta-cognitions, and the occurrence of RATs. It appears that VTDT might have an action on these specific aspects of RATs. In other words, VTDT may reduce the use of distraction tactics particularly ones like “I keep myself busy”, punishment such as “I get angry at myself for having the thought”, re-appraisal such as “I analyse the thought rationally” (three of the five TCQ sub-scales). VTDT may reduce the incidence of self-consciousness about thoughts and incidence of positive beliefs about worry. VTDT may reduce incidences of “paying close attention to the way my mind works” (Cognitive Self-consciousness) and the degree to which the person believes in general that worrying is helpful e.g. “worrying helps me cope”. Potential links between RATs and the MCQ are strongest on two of the five MCQ-30 sub-scales. VTDT may cause some reductions in levels of general anxiety and sleep problems (“have you lost much sleep over worry” and “had difficulty in staying asleep once you are off?”) and social dysfunction (“have you been able to enjoy your normal day to day activities?”). The potential links between links between direct measures of RATs appear most apparent on these two of the four GHQ sub-scales. This could be taken as support for the suggestion of developing a more specific psychometric measure of RATs, as suggested above. It can be concluded that RATs are indeed a phenomenon that vary, in this particular case, with the use of a specific protocol, VTDT. Because it might be concluded that RATs as a specifically identifiable entity, It can be said that they have a unique set of characteristics associated with them, and that these might not be sufficiently captured by existing measures.
4. Using TS has a negative influence (i.e. an increase) on meta-cognitions as measured by numbers of RATs.

The evidence from the use and cessation of use of TS is that there appears to be an adverse effect through the deliberate use of thought suppression. The mean number of RATs up from 31.60 at B2 to 41.10 at TS, and decreased to 35.30 at B3. The reported effect size of 1.38 from TS use was not as strong as the effect on numbers of RATs of using VTDT (2.53, 2.63 respectively), but was still very large. The cessation of deliberate TS use produced a large effect size of 0.80. Links between the size of the effect exist with the other psychometric measures in the realms of the MCQ-30 with Cognitive Confidence (0.85 TS use only), Positive Beliefs about Worry (1.00 TS use and cessation), Negative Beliefs about Worry (0.86 TS use, 1.16 cessation). With the TCQ, strong effects were found with TS use and cessation in all five sub-measures. These effect sizes spanned from 0.86-2.79. With the GHQ, only Social Dysfunction increase from TS use (1.36) and decrease from cessation of use had large effects (1.02).

The use of self-reported numbers of RATs is an ecologically valid tool in that the RATs have direct personal relevance to the individual participants. The nature of the questions contained in the structured, formalised psychometric measures of the MCQ-30, the TCQ and the GHQ are by their very nature nomethetic, as opposed to the idiographic. Both have their place, and the use of both styles of measures in a study adds to the value of using a mixed methods approach. The nomethetic-idiographic debate has been re-visited by McLeod (2007) and is one of the foundation stones of the mixed methods research design used here, based on recommendations made by Hanson et al. (2005). By their nature, cognitions would have individual and potentially different relevance, hence the need to capture that individual aspect of relevance as measured by numbers of RATs. Even though a number is being recorded, the relevance of that number of RATs is relevant to the individual.
5. Using VTDT has a positive influence (i.e. a reduction) on the severity of SUDs.

The evidence from SUDs reported by participants across the VTDT phases is that VTDT does appear to be involved with a clearly observable pattern of change in units of distress associated with RATs. Given the structure of this study, these could be attributed to the use the VTDT protocol. The mean number of SUDs started of at 6.90 at MB1, went down to 4.40 after VTDT1, was at 6.30 at B3 and decreased to 4.00 at VTDT2 and back up to 5.22 at FU. The effect sizes were more pronounced in the direct measurement of SUDs (3.91) were more than those observed in general in the MCQ-30 and the GHQ, with a relationship between sub-scales of the TCQ being stronger. Effect sizes from the use of VTDT and withdrawal from VTDT with SUDSs were large (3.91, 2.67, 3.42 1.63 respectively). This presents as a similar pattern to that observed above with the RATs data. Fluctuation in SUDs co-varied most with the four TCQ sub-scales of Distraction, Punishment, Re-appraisal and Worry, MCQ-30 Need for Control, Negative and Positive Beliefs about Worry and GHQ Anxiety and Insomnia and Social Dysfunction. The relationship between RATs and SUDs across VTDT use and withdrawal conditions is a similar one, RATs and SUDs both decreasing with VTDT use and increasing with cessation of VTDT. The arguments in favour of using mixed method designs with individually salient measures, presented in the numbers of RATs section above, equally apply to SUDs.

6. Using TS has a negative influence (i.e. an increase) on the severity of SUDs associated with RATs.

As with the evidence from RATs, it appears that TS use does have a clear effect on the severity of distress associated with the occurrence of RATs. Deliberate use of TS can be seen to increase units of distress associated with RATs. The mean number of SUDs went up from up from 6.00 at B2 to 7.80 at TS, and decreased to 6.30 at B3. The reported large effect size (3.21) from TS use was larger than that seen in number of RATs as a function of TS. Therefore
the perceived distress from the use of TS had a greater effect than any actual increase in number of RATs (ES = 1.38) following the use of TS. This adds to case that can be made for TS being an undesirable tactic or technique to use when trying to deal with RATs. It appears that use of TS has more magnified effect on SUDs than in just the number of RATs. Relationships exist in a similar fashion to those observed with RATs and the more formal psychometric measures, namely the MCQ-30 Cognitive Confidence, Positive and Negative beliefs about Worry and all five TCQ sub-scales. These might be the specific areas where most distress occurs with TS use. It might perhaps to be expected that SUDs would increase linearly with RATs, but it is apparent that this not necessarily a forgone conclusion. Number of thoughts and associated distress are probably different factors, and direct examination of any relationship between them would add to the body of knowledge about how RATs work. This is illustrated by the differences in effect size between RATs and SUDs, both are large, but the distress effect presumed to be linked with the RATs is stronger. It could also be that the qualitative individual salience of RATs to an individual is a factor to consider in future work. Therefore a mere diary record of the number of RATs in a therapeutic situation probably would not be sufficient. This has implications for CBT in general, in that keeping diary records of number of negative occurrences might not be providing a holistic picture. Seminal cognitive behavioural texts such as Kennerly, Westbrook and Kirk (2007) recommend diary records, but more emphasis might need to be placed of keeping these records in conjunction with a record of the perceived distress effect on a person, and the individual meaning of the RAT to the individual. This unanticipated and unexpected finding is important as it adds to the incredibly sparse amount of work done on the use of SUDs since its inception by Wolpe in 1969. It adds to the recent work by Tanner (2012) on emotional SUDS; he found that SUDs were scored significantly higher than measures of physical discomfort, and were negatively related to the widely used clinicians' Global Assessment of Functioning (GAF) ratings. Together with Tanner's findings, the current work adds to the case for the continued use of SUDs as an independent, informative, idiosyncratic and ecologically valid measure. Cultural and socio economic factors could be relevant, but have not been investigated
5.3 General observations about effect sizes

Glass, McGaw, and Smith, (1981) argued that the effectiveness of a particular intervention can only be interpreted in relation to other interventions that seek to produce the same effect. Glass points out that the practical importance of an effect depends entirely on its relative costs and benefits. For example if it could be shown that a small, inexpensive change raises academic achievement by as little as 0.1 effect size, then this could in reality be a very significant improvement if it were applied uniformly to all students. This would be even more so if the effect were cumulative over time. I argue the converse to this in the case of this research. This research does not seek to make claims on the basis of large effect sizes in x, y, z. Rather that the value for the use of a new technique is dependent on the relative cost/benefit of using it for an individual. The relative costs and benefits that Glass McGaw and Smith illuminate were briefly examined in this study by the qualitative part of the data collection. Their point about the effectiveness of a particular intervention being interpreted in relation to other interventions that seek to produce the same effect was addressed by examining the effects on selected measures of the controlled use of VTDT and TS and withdrawal from those protocols. Effect sizes can be potentially misleading, especially with some of the large ones observed here in hypotheses 1-6. These results should be considered with reference to the qualitative general research questions that are discussed below.

A. Do the qualitative findings from the use of semi-structured interviews support the use of the VTDT intervention?

The response themes and categories elicited from the Client Change Interview Protocol ((Elliott, Slatick & Urman, 2006) are summarised in Figures 27 and 28 reported in the results chapter. Good support from this source for the use of VTDT comes from the evidence of the calming effects through the use of the VTDT protocol (Figure 27 VTDT related responses, Figure 28 Q4). These were noted by six of the ten participants. Comments such as “It feels a bit like
meditation, "and that “It definitely switches off the thoughts whilst you were doing the gibberish.” One possible mechanism for improvements in rumination was noted by Chambers, Gullone and Allen, (2009). They found that increases in awareness of rumination through the use of mindfulness, caused a decrease in rumination (RATs). Meditation and acceptance are core components to all the third wave cognitive behavioural therapies, according to Herbert and Foreman (2010). This might indicate that the VTDT protocol spans mindfulness and acceptance through overlap between VTDT as a meditative practice and also as a cognitive defusion technique. In cognitive defusion, acceptance (and distancing from) certain types of thoughts is the aim (Herbert and Foreman 2010), rather than trying to change the structure by challenging and logically disputing them in second-wave CBT (Westbrook, Kennerley & Kirk 2011). In the General Thought Related Responses (Figure 27), it can be argued that the awareness of the theme that “thoughts are just thoughts” reported by seven of the ten participants is a positive step towards cognitive defusion or deliteralisation. Greater awareness of the independent, often random nature of RATs reported by eight of the ten participants (Figure 27 General Thought Related Responses) is in a similar vein, in that thoughts appear to frequently have a life of their own. This has a different emphasis to the theme that thoughts are just thoughts, but overlap with cognitive defusion and self-as context is bound to occur. With the thoughts are just thoughts themes, it is possible for 'self' and thoughts to be the same thing i.e. “I am my thoughts”. The independence of thoughts is a more distant observation of thoughts from self as context, which is an essential element of the psychological hexaflex of Acceptance and Commitment Therapy (e.g. Hayes & Strosahl, 2004). The structure of the hexaflex was briefly reviewed in the literature review. Some of the typical replies reported from seven participants were along the lines of “I came to realise that thinking is sometimes over-rated, they are only thoughts.” and “watching my thoughts helped me realise that they are just words in my head.” The second theme had eight of the participants reporting that during the study, they found that they had developed an awareness that RATs “... seemed to have a life of their own.” The explicit statement that “My stomach grumbles sometimes without asking my permission, and I guess that negative thoughts
just seem to appear like that, sort of on their own without me wanting them to be there" is a clear and direct statement of externalisation of mind operating as a separately identifiable entity. The processes of cognitive defusion have been recently clarified and re-outlined Hayes, Strosahl and Wilson (2011), after reviews by Zettle (2005). Cognitive defusion/deliteralisation involves where the “the mind” as expressed through cognitions, is treated as an external event, almost as if it were a separate person. This, according to Hayes, Strosahl and Wilson, expands attention to thinking and experiencing aspects of thinking as an on-going behavioural process, and not necessarily as a causal, ontological result. This appears to be the case with the second theme. Further support comes from awareness of the randomness of RATs (Figure 28, question 4 Client Change Interview Protocol) expressed by eight participants. What is difficult to ascertain is if these above themes were potentially elicited from the VTDT or the TS part of the procedures, or if individuals jointly expressed both themes above. No attribution or link to one or other VTDT or TS condition was apparent from the responses, which is why they were put in a general thought related responds category rather than than the VTDT related responses. Further research to investigate if it was the generally positive experience of VTDT or negative experience of TS that was responsible for the emergence of these above described themes. Some aspects of cognitive defusion are examined further later on in this discussion. Attributions that the VTDT was the main test condition under investigation were made by four out of ten participants (Figure 28, Q5 Attributions. This is possibly because there were two VTDT conditions (the B parts of the ABACAB design) and one TS condition (the C of the ABACAB design). It is entirely possible that the participants might reach the conclusion that the research interest centred around the VTDT condition. This is potentially a major confounding variable that was not picked up by Wells, White, and Carter (1997) investigating the Attention Training Technique ATT when they originated the design used by them and used here. They enthusiastically asserted that the ACACAB design “offers a powerful means of demonstrating that ATT mechanisms are the central causal agent of change”, but the qualitative findings of this study cast some doubt on the advisability of using this format of design in the future. Some other potential limitations of the design are
discussed further on.

Two of the five themes that emerged from the VTDT related response categories (Figure 27) can be seen as supporting the use of the VTDT technique. Only two participants felt at the end of the study that they might be inclined to deliberately use the gibberish technique in the future. It seems that one of the reasons for this is that the participants found it embarrassing using VTDT (six of the ten participants), despite that it was recommended it be done in private. A typical response was “It felt pretty weird doing gibberish. I thought it might feel more comfortable over time, but it still felt embarrassing whenever I did it.” The same theme was picked separately up in Figure 28, from questions looking at possible problematic aspects of the study from the point of view of the participants. An even larger number (eight of the ten participants) expressed a disinclination to use VTDT as a tactic in future. The emphasis of this is different from a deliberate willingness to use VTDT; this was a deliberately expressed unwillingness to use it. The relevant categories and themes referred to can be found in Figure 27 and 28. These are not an encouraging findings to promote the further use of this particular method of reducing RATs. Such a situation is easily understood if compared to use of medication. If the “medicine’ is deemed not worth the “cure” then it is not justified to continue with the “cure”. Compliance with the future use of VTDT with this protocol in this particular sample population is potentially not very likely in the light of this qualitative evidence. An increase in the inclination to use such a method might be more likely if the effect of the presence of RATs was concomitant with depression and anxiety. However, further caution comes from previous therapeutic experience of using a procedure known as of thought stopping of undesirable cognitions, using with elastic bands (Wegner, 1989). This was a once common practice in CBT, but has fallen out of use due to a combination of participant resistance and an increasing body of evidence about lack of efficacy. The research that led to such conclusions and cessation of the practice was reviewed by Nolen-Hoeksema, Wisco and Lyubomirsky (2008). The thought stopping technique involved tactics like uttering “stop!” out loud or internally “in your head,” in conjunction with snapping an elastic band on ones wrist as a behavioural reinforcer. Client non-compliance due to participant resistance was a major
factor in the decline of thought stopping. What is not answered by the review is the relative weighting that contributed to cessation; was it the actual lack of effectiveness of the technique, or problems with the users finding it embarrassing and impractical. Unpublished anecdotal evidence from the author's own practice does indicate some client resistance, and this might be the subject of future investigation. The effectiveness of VTDT in certain circumstances has been demonstrated to a reasonable extent here, so that is justification to investigate the protocol further, despite the reservations identified above.

The finding that all ten of the participants reported that no difference in respect of RATs as noted in the participants by others around them (friends family, colleagues) could be taken as not being in favour of using VTDT or not using TS in a wider context. This result is perhaps unsurprising given that the sample here does not exhibit high levels of anxiety and depression. In retrospect, it is felt that it was worth asking this question. This was because if the responses had been in the direction of other people in the participants sphere having noticed differences since partaking in the project, which could then have been taken as support for using VTDT or not using TS.

When these qualitative findings are taken in conjunction with the quantitative ones reported above, the case for further investigation of the applications and effects of VTDT is justified, possibly in a therapeutically relevant setting, and replication in other “standard” samples. The qualitative findings reported here, do moderate enthusiasm for VTDT that might accrue from positive interpretations in favour of the protocol taken from the quantitative findings previously described. Despite these moderating factors, it is felt that VTDT is indeed worthy of further investigation. This might especially be the case, if the potential effects of VTDT are investigated on participants specifically identified as suffering from anxiety and/or depression. There, the effect of VTDT may be more pronounced than in the non-clinical set of participants investigated here. A combination and comparison of the two types of population would probably be even more illuminating.
B. Do the qualitative findings from the use of semi-structured interviews support the view that the use of TS is undesirable?

The qualitative TS related responses appearing in Figure 27 provided some clear evidence against the use of TS as a tactic to deal with RATs from three themes/response sets. A typical example reported was “thoughts, like, seemed to increase through trying to crush them.” Similar types of responses were recorded by seven participants of the ten taking part. This clearly points to showing an understanding by these participants that the TS tactic increases undesired thoughts (RATs). A wider reflection of this understanding can be gained from the insight reported by eight of the participants, that through taking part in in the study, that they had come to understand that they had been using a specifically identifiable (TS), possibly habitual format of dealing with RATs. One response was “taking part in the study helped me see that I had been trying to push things in my head (thoughts) to the side.” Another reported that “it was a bit weird actually formally trying to suppress thoughts (via the TS protocol in the study); I sort of realised that that is what I used to do anyway.” An indication of increased awareness of the negative influence and habitual nature of TS use in respect of RATs came from eight participants who also reported that they would try to desist from TS use in the future. A typical example was “I am definitely going to try and not use thought suppression in future...” and the habitual nature of TS from the same statement that, “… might slip into using TS tactics in the future”. It was not the same eight that reported these separate themes, but there was a large degree of overlap. An expansion of this meta-knowledge about the nature of RATs came from three participants noticing that other people that that they knew in their circle of family, friends and acquaintances, used TS habitually as a way of dealing with their own RATs. It has long been known that tactics such as deliberate thought suppression or stopping are common, widely used tactics. Paradoxically, such strategies lead to increases in those thoughts (Nolen-Hoeksema, Wisco & Lyubomirsky, 2008, Wegner 2011), as previously considered in the literature review. This led to the
cessation of previously used techniques such as thought stopping as discussed above. What is clear from looking at the previous research is that the work on thought suppression was largely centred on suppression of laboratory based simple targets such as white bears (don't think about this white bear target), as used by Wegner. These targets do not really have ecologically validity or personal salience to most individuals, and do not necessarily mirror typical human behaviour. Personally relevant RATs are more complex and often apply to specific and general life situations e.g. “I am going to mess this up eventually” or “There is something wrong with me”. Also the time frame of the majority of previous work is laboratory based and over a relatively short span of time, often simple A-B test-retest situations. A more expanded time frame may facilitate and capture more real life types of situations; an example of this might be like trying not to think about life with an ex-partner. Aristotle wrote, “If you would understand anything, observe its beginning and its end”. Because if its ACACAB design, this study was conducted over a three month time frame, with reasonably frequent contact between participant and researchers. As such it is better placed than some studies to capture richer elements of the ways that RATs affect people. Siddiqui (in press) in his systematic review of ACT based cognitive defusion techniques, found similar shortcomings to Nolen-Hoeksema, Wisco and Lyubomirsky (2008). These problems centred on stimuli used ecological and face validity issues (laboratory based non-life relevant targets) and type of participant (mainly students) methodical problems. His conclusion was that research purporting to support cognitive defusion appears to have systematic flaws. This study attempted to address some of these previously identified problems by using personally ecologically and face valid relevant stimuli (RATs), with a non-student population over a reasonably extended time frame.

The responses described above and in Figures 27 and 28 over the expanded time frame of the study, may be precursors to beneficial change. This might potentially be due to an increased awareness that some things worsen and others might have a positive impact on the occurrence of RATs. Taking part in the study seems to have imparted this to the participants. The responses equate at least to an increase in awareness of the nature, costs and benefits of
TS types of tactics. This increased awareness, even in the absence of current practically applicable RATs reducing techniques, could potentially move participants in the direction of newer, potentially healthier behaviours. Norcross, Krebs and Prochaska, (2011) review and describe a long line of research into a trans-theoretical model of change. This well-known five-stage model describes sequential moves from pre-contemplation, contemplation, preparation, action, maintenance and termination. The model is often used in relation to substance misuse, but the authors aimed it at any unhealthy habits used as a way of coping. The contemplation stage, or getting ready, is where people are beginning to recognize that aspects of their behaviours are problematic, and they start to look at the pros and cons of their continued actions. The preparation stage is where people are intending to take action in the immediate future, and may begin taking small steps toward behaviour change. Prochaska, Wright and Velicer, (2008) say that increasing awareness of problem areas facilitates progression through these stages of change. Responses from all ten of the participants of the possibility of a causal relationship between the use of TS and increases in RATs and SUDs supports the view that increased awareness of the nature of RATs could help progress people through at least the from the pre-contemplation to the contemplation stage, and the early stages of the preparation stage. The realisation of participants in this study of the habitual nature of TS and the intention to try and not use TS in future is indicative of the potential for change at some stage. Future studies aimed at deliberately increasing a participant’s awareness of RATs, and following actual changes in RATs and SUDs over time, may prove fruitful.

5.4 Some conclusions of research questions A, B and the 6 hypotheses - a working model for RATs

The above outlined discussions of research questions A and B, and the 6 hypotheses can be synthesised in the form of a flow diagram represented in Figure 29 below. This constitutes a working model of the way RATs operate. The diagram starts with the presence of RATs, as we did in this study through the initial screening of participants or the presence of RATs to be included in the study, by using the Rumination Questionnaire (Trapnell & Campbell, 1999).
Evidence for the presence of RATs comes mainly from Figure 27 General Thought Related Responses (awareness that thoughts are just thoughts, awareness of the independence/randomness of RATs; also Figure 28 Q.4). Also the occurrence of RATs, as shown by the measuring direct number and severity of them, and detection via the formal psychometric measures. This start point is also justified from the conclusions of Klinger (1996) that of the 4,000 or so daily thoughts that 13%-22% of them might be classified as RATs. Though they did not use the term RATs, but practically and theoretically that indeed is what they are referring to in this 13%-22% portion, but with perhaps with a less clearly defined classification of RATs. A chosen (or deliberately instigated) tactic might be thought suppression. The mere act of suppression of thoughts leads to an increase in awareness of the presence of RATs (Figure 27 TS related responses). A side feedback loop feeds into this increase in awareness of RATs from even merely scanning for unwanted cognitions/RATs (TS related response noticing that TS had been used spontaneously in the past). This can feed into further attempts to suppress RATs. Failure to suppress RATs (evidence from Figure 27 TS related response that less likely to use TS in future) can (bi-directionally) lead to beliefs that the thought must be important. This assumption of the importance of RATs proposal, and would need to be specifically investigated in the future. If a thought keeps coming into awareness, this can in itself feed into scanning for unwanted thoughts or an increase in awareness of RATs. Evidence in support of these elements in the Figure 27 flow diagram also comes from Figure 28 TS related responses, all three themes (noticing that TS had been used spontaneously in the past, less likely to use TS now or in future and noticing that others they know use TS as a tactic). The result of the operation of this flow pattern could be the mechanism that leads to the pernicious position that moves a person along the continuum from RATs to identifiable patterns of anxiety and depression as identified by Clark and Rhyno (2005). Providing awareness of this potential feedback mechanism to participants with anxiety or depression with the aim of decreasing the effects of RATs would also make an interesting future research project. This fits with the differences found between clinically depressed versus non–depressed participants (Donaldson, Lam & Mathews 2007, Lavender & Watkins 2004,
Watkins & Teasdale, 2001), implicating rumination. A common conclusion from the above findings is that underlying depressed mood is a stable underlying mechanism of rumination. Further, their conclusion was that intervention should target changing ruminative thinking *processes* over and above targeting dysfunctional attitudes and schemas in the prevention and treatment of dysphoria, anxiety and depression, as is common in second-wave CBT practice.
Figure 29. Flow diagram of a working model of RATs.
5.5 Other potentially confounding variables

Due to nine of the ten participants reported on enquiry as to their general well-being being OK or fine during the course of the research, it seems reasonable to conclude that the participants were being affected by major traumas or personal issues. Had any major issues been reported, this might have impacted by having a confounding influence on the responses to the quantitative and qualitative data in relation to the six ACACAB phases. No significant illness, substance use or major life events were reported apart from starting a new job and embarking on a part time college course.

Pelham (2006) identifies three potential types of confounding variable, operational, procedural and personal. Operational confounding occurs where measures designed to measure a particular construct, inadvertently measure something else. This is unlikely in this study as four types of measures of RATs were used (the MCQ-30 and the TCQ, numbers of RATs and SUDs) which were broadly in concordance. Procedural confounding is where another variable changes along with the manipulations. Potentially in this study the inclusion of two VTDT conditions and only one TS condition is a procedural confounder. This is possibly indicated by the attributions of causality made by four of the ten participants that the VTDT condition was the target of investigation (see Figure 28, question 5, attributions). However, the likelihood of compliance effects operating in this study is reduced by the opportunity at the end of the investigation to give opinions to an independent researcher on the experiences encountered during the project. Also, the purpose of having two VTDT conditions was a necessary part of the reversal design to illustrate if the contrasting techniques had differential effects. Another possible procedural confounder is time. Four out of ten participants expressed concerns about the length of time involved over partaking in the study, and difficulty found in attending appointments (Figure 28, Q7 theme 3). No evidence emerged from the interview data of participants giving the researchers the answers that they might want (compliance, or a form of getting it over with) despite some of them “working out” what was the actual object of investigation. The negative influence on research findings of the Hawthorne and other effects as potential
confounders have been re-visited by McCarney et.al. (2007). A source of person confounding could be experimenter and observer (participant) expectation effects introducing bias and therefore threatening the internal validity of the study (Goldstein, 2011). Mentioned above were the attributions of causality made by some participants. It is entirely possible that this might lead to confounding, by the participants, perhaps inadvertently, given responses in the direction of the hypothesis they had made. No information to support this possibility emerged from the interview protocol. The researcher also administered the phases of VTDT and TS conditions, and it is possible that non-verbal cues could have had an influence. An argument against this is that the participants themselves conducted the measurements of RATs and SUDs. The overall pattern of results from these measures was similar to the more formal psychometric measures. This makes it less likely that these confounding variables were operating here. A better fail safe in future would be to using blinded or double-blinded procedures in a team setting.

The length of time factor, indicated as a negative aspect, should be considered by future studies when designing future investigations. Person confounding, variance due to observed or unobserved characteristics is also fairly unlikely due to the relatively heterogeneous mix of participants that took part in the study.

5.6 Cognitive defusion/distancing and VTDT

“Some patients who have learned to identify their automatic thoughts recognize their unreliable and maladaptive nature spontaneously. With successive observations of their thoughts, they become increasingly able to view these thoughts objectively. The process of regarding thoughts objectively is labelled *distancing*” (Beck, 1976, pp. 242-243).

The process Beck describes is in fact, cognitive defusion. The above quote can be interpreted as way of responding to RATs (described by Beck as automatic or negative automatic thoughts). The methodology that Beck propose is one of successively observing the thoughts, which is exactly the process/device of the VTDT protocol. The main difference is that the VTDT protocol is organised in a
structured fashion and incorporates and intertwines a calming, distancing, meditative process. Beck's observation pre-dates the crucial Acceptance and Commitment Therapy hexaflex element of cognitive defusion, which was originally termed comprehensive distancing (Zettle & Hayes, 1982). As described by Beck, and previously discussed in the literature review, comprehensive distancing can be traced back to pre-ACT use. Its use was later more formalised by Beck and colleagues, through practice with observational devices. With these, the patient learns to distance himself: “There’s another fearful thought. I’ll just count it and let it go.” The patient is told to accept the thoughts rather than fight them. He observes his thoughts and lets them go” (Beck, Emery, & Greenberg, 1985, p. 196). The difference in ACT and Beck's overall approach is the addition of the other five hexaflex elements and the addition of (an empirically test-able) different underlying theoretical mechanism, Relational Frame Theory. The driving mechanisms of this theory are behavioural reinforcement contingencies and habituation (see later). Beck significantly departed from this process by seeking to challenge thoughts (e.g. Beck, Emery, & Greenberg, 1985) in a collaborative but disputational fashion, and this became known as second-wave CBT. It is the case that VTDT can be placed within the cognitive behavioural mode of therapy, being a specific cognitive intervention that also has a physiological calming effect (reported by six of the ten participants). CBT is not a specific therapeutic or theoretical model, but a broad family of theories and interventions that can be used collaboratively with clients. It is important to place VTDT within CBT. VTDT does not seek to challenge thoughts, as is the norm in second-wave CBT practice (e.g. as outlined in Westbrook, Kennerley & Kirk, 2011). This challenging of cognitions (cognitive re-structuring) is part of the process of logico-deductive of targeting and disputing dysfunctional attitudes and schemas, and is central to traditional second-wave CBT; but there are some major potential problems with it. It is argued that VTDT can be placed in the third-wave of mindfulness and acceptance based classification of CBT. It appears to be a method of cognitive defusion that seems to help learning to perceive thoughts, images, emotions, and memories as what they are, not necessarily what they appear to be. It is a means of looking at your thoughts rather than
from your thoughts, and not attempting to particularly change content of those undesirable thoughts. In the ACT model, people who are reporting with psychologically based issues are often fused many of their thoughts, which causes psychological inflexibility as part of a hexaflex structure as previously discussed in the literature review.

In support of the development of the third-wave of mindfulness and acceptance based CBTs (including ACT), Hayes (2004) identifies three empirical anomalies in second-wave CBT outcome literature: Firstly component analyses show that traditional second-wave cognitive interventions (like cognitive re-structuring) do not add value to therapy, secondly, there are often rapid early improvements in CBT, these frequently occur before the use of specific second-wave cognitive interventions and thirdly, changes measured in thoughts and beliefs do not seem to precede changes in negative symptoms. Also in support of the third-wave, Longmore and Worrell, (2007) provided a compelling review of research that looks at whether we actually need to challenge thoughts in CBT. Their conclusion is that their findings “reveal a worrying lack of empirical support for some of the fundamental tenets of CBT” (p.185). The above has implications for and may even strike at the heart of the financial (Layard, 2006) and National Institute for Health and Clinical Excellence (NICE 2004, 2011) based support for the current wide ranging Improved Access to Psychological Therapies (IAPT) programme. Criticisms of this somewhat single-minded approach have been levied (e.g. Marzillier & Hall, 2009). The findings here that a new cognitive technique (that can be described as CBT in general, and third-wave CBT in particular), does appear to have some demonstrable value. This is potentially a contribution (albeit small) against the argument that second-wave CBT should be the main, possibly only, way forward in contemporary psychotherapeutic approaches. It also adds to the argument that the fundamental foundations of second-wave CBT might not be as sound as portrayed. Earlier the work of Donaldson, Lam and Mathews (2007), Lavender and Watkins, (2004) and Watkins and Teasdale (2001) was mentioned in the context of targeting cognitive processes rather than cognitive content. Their conclusions are relevant here in the context of VTDT and third-wave CBT therapies not challenging content, but targeting naturally occurring processes. That is what
VTDT appears to do.

5.7 Other possible mechanisms for VTDT. Is it distraction, desensitisation or cognitive defusion?

It could alternatively be argued that the VTDT process is a distraction technique. Distraction as a tactic does have its critics e.g. Smith and Alloy, (2009) in their review of rumination, find that distraction was once thought of as a potent tool, but its efficacy has been overestimated. Tactics such as “trying to take your mind off it” by using tactics like thought suppression by distraction could be counter productive. That is what the findings here support. Use of TS consistently appears to cause an increase in RATs. Consequently the use of distractive suppression appears not to be fruitful when dealing with RATs. It may well be helpful with more minor negative thoughts, but these are not RATs. Response style theory in psychotherapeutic interventions such as Meta-cognitive therapy (Papageorgiou & Wells, 2004) postulates that attention shifting, a form of positive distraction is a healthy alternative to rumination. It is the view here that VTDT is not a technique of distraction, because attention is deliberately re-focused on the RATs in question, as part of the protocol outlined in Appendix 1. If attention were not deliberately re-focused on the RATs, then the use of gibberish might be construed as distraction. The emphasis here with the VTDT technique is a combination of deliberate distraction and re-focusing, in a manner that might cause de-sensitisation. Such re-visiting protocols are central to the treatment of PTSD, and underlie the widely validated treatment methodology of Eye Movement Desensitisation Reprocessing (EMDR, Shapiro 2001), and Exposure Response Prevention. The underlying mechanism is of both these processes, and probably VTDT, is habituation.

Habituation is the form of learning mediated by classical and operant conditioning, as discussed previously in the literature review. The process involves an organism decreasing or ceasing to respond to a stimulus after repeated presentations (Bouton, 2007). There is a progressive decline of behaviour in a habituation procedure. This may expand via the long known about process described as stimulus generalization (Thompson & Spencer, 1966) where habituation takes place in response to other stimuli that are similar
directly or schematically to the original stimuli. The effect of this is that the organism learns to stop responding to stimuli which is either no longer biologically relevant, or the learned response set is contrary to valued goals in higher order organisms like human beings.

Trauma focused treatments have been the subject of much attention. These were have found to have been more effective than non-trauma-focused treatments (e.g. Cochrane reviews first published in 2005 and updated in 2007). The protocol involves deliberately accessing distressing trauma related cognitions, beliefs, emotions and bodily sensations with a view to desensitising them through a process of behavioural habituation and adaptive processing (e.g. Shapiro 2001). Similar procedures also underlie the rationale behind exposure response prevention (Twohig, Whittal, Cox, & Gunter, 2010, discussed in the literature review). The implementation of VTDT is similar in many ways. What is possibly being attempted through the successful use of VTDT process is weakening of potentially dysfunctional verbal control. Zettle (2005) proposes two ways that such a process can be achieved. The first is from a well-established Skinnerian classical/operant perspective of verbal-contingencies supporting controlling relationship between verbal and other forms of manifestation such as SUDs. This is similar to the desensitisation process described above. The second is from an RFT perspective that goes beyond simpler associations between verbal contingencies management, to more complex verbal (cognitive e.g. RATs) – emotional - physiological relationships. As discussed above, this forms the theoretical basis of Acceptance and Commitment Therapy. The interdependent four-factor model (Padesky & Mooney, 1990) that underlies all cognitive behavioural models (second and third-wave) was outlined earlier in the literature review. One of the ways of further investigating VTDT would be a further dismantling study or component analysis to see if the effects observed in this study are due to desensitisation along the lines suggested by EMDR, trauma focused approaches and RFT conditioning contingencies or cognitive defusion/deliteralisation. Future research to investigate active components of ACT are suggested by Zettle (2005). These include component analyses and dismantling strategies such as those conducted initially by Jacobsen et.al.,
1996, 2001) on cognitive therapy as reviewed by Longmore and Worrell (2007). One such research suggestion is investigating procedures and techniques commonly employed in ACT in the service of mindfulness, cognitive defusion/de-literalisation being compared to some concentrating on value driven behavioural commitment and activation. Suggestions made by this study include investigating VTDT as a possible defusion mechanism with a participant population with anxiety or depression issues, and over a shorter time frame than in the current ACACAB length of study. This would be a natural extension of this pilot study and builds on the abundant research amassed over thirty years that “non clinical” individuals experience undesired cognitive intrusions that are recognised as problematic in “clinical” states (reviews by Clark, 2004; Papageorgiou & Wells, 2004; Pope & Singer, 1978; Rachman & Hodgson, 1980; Sarason et al., 1996; Wenzlaff & Wegner, 2000).

The origins of ACT are inductive, where new therapeutic techniques have been added or ones in use further validated by evaluating the effect of specific components of that technique (Zettle 2005). The process that Zettle describes is an inductive approach where attempts are made to validate these techniques by evaluating specific therapeutic components and related processes with non-clinical and clinical populations. Previous examples in non-clinical samples are Gutierrez et al., 2004; Hayes, Bissett, Korn, Zettle, Rosenfarb, Cooper & Grundt, 1999; Masuda, Hayes, Sackett, & Twohig, 2004). In clinical populations examples are found in the work of Heffner, Eifert, Parker, Hernandez, & Sperry, 2003; Levitt, Brown, Orsillo, & Barlow, 2004). This process, describes what has been under investigation here with a non-clinical sample. A new technique (VTDT) emerged through normal therapeutic practice. That practice can be described as a cognitive defusion/comprehensive distancing technique. A research design was constructed which attempted to examine one specific aspect of the ACT hexaflex. A related process (TS) was included within the research design, which also attempted to be a mixed method design with qualitative and quantitative measures. This research does not attempt to validate the more widespread use of the VTDT technique; it merely indicates that it is an area worthy of further investigation and study. Future directions suggested are with populations perhaps identified as experiencing anxiety and
depression and replication of the investigation with larger non-clinical populations.

5.8 General comments

The use of mixed methods approaches to research (Hanson et al. 2005) recommended the sequential use of quantitative, then qualitative data. It could be argued that this study provides a case where the qualitative data appeared to be more consistent across the data sets. Rather than make a case for the value of one methodology against the other, this author concludes that this research provides a good example of justifying mixed methods approached in psychological investigations. It could be the case that counselling and counselling psychology are much more post-positivist than clinical psychology research (e.g. Morrow, 2005). The relative merits of quantitative, qualitative and mixed methods approaches are discussed in Creswell (2009) who argues that the use of both types of data adds to the richness and validity of psychological research. In this project, the use of both methodologies added richness and the ability to cross-reference and triangulate findings. During the write up and analysis period, the author became more aware of the uneven weighting of quantitative and qualitative sides of this project. This was despite the project being set up at the outset as a sequential explanatory design. This point is briefly addressed in 5.9 below about future directions for research. It is felt that this study has made a significant contribution to knowledge by systematically exploring a potentially useful therapeutic technique and finding that there is indeed a basis to justify further investigation of the technique of VTDT. The research has also placed VTDT within an already existing framework of cognitive defusion. Further confirmation that the use of TS is not a fruitful way of dealing with RATs emerged from the work. Another contribution to knowledge is that a working model of RATs has emerged from the research; this might help fuel and provide a template for further investigations.
5.9 Future Research

The target sample group here in this study were not what might be labelled as a "clinical" population. Future research might target a sample group that display symptoms of depression and/or anxiety, as well as being screened (perhaps in a similar fashion to this study) for up as having RATs beyond an operationally defined level. This might address questions about the potential use of VTDT to reduce symptoms of depression, or anxiety. Another potentially fruitful area to investigate is what might constitute the active components of VTDT as a part of ACT, as suggested by Zettle (2005). This study highlights the potential feedback mechanism of RATs in an iatrogenic fashion with respect to anxiety or depression (Clark & Rhyno, 2005), providing specific awareness of this potential feedback mechanism to participants with anxiety or depression with the aim of decreasing the effects of RATs would be helpful. A direct comparison of the relative effectiveness of the cognitive defusion techniques highlighted in Table 1, with the addition of VTDT to that list, would be informative to their application in general and therapeutic contexts. The scope of this research proved difficult for one author and a helper for the interviews. Further work might be better undertaken as part of a team effort. The logistics of this enquiry were underestimated, and the consequence of this was unforeseen expansion of the analysis and write up parts. Also this study was limited in the scope of its qualitative analysis. Specific research projects into looking into individual’s experience of cognitive defusion techniques in general and VTDT in particular would be a desirable and potentially hugely fruitful are of work.

5.10 Some Reflexive Observations

Etherington (2004) identifies three specific ways of engaging in reflexive practice:

- Writing a 'personal reflexive statement.
- Keeping a reflexive research journal through-out the research process.
- Participating in a reflexive research group.
• Noting personal thoughts and associations alongside the data in interview transcripts or the statistical results.

I have exercised the first, second and fourth of these identified options, of which this section comprises the first. The other two practices (second and fourth of the above options) provided the data that fed into the reflexive statement. The statement is divided into three types of reflexivity identified by Willig (2008) as being relevant to counselling psychology research; these are personal, methodological and epistemological.

**Personal Reflexivity**

My personal journey in psychology started in 1978-1981 whilst studying for my psychology degree. The degree was initially a mainly couched in a behaviourist positivist structure. At that time, this felt uncomfortable and constrictive, but changes towards a broader more humanistically inclined view became slightly more evident in the final year, and continued beyond. These change felt developmental in nature, rather than revolutionary. Reflecting this developmental process, this research has been the crystallization of four years of developmental exploration and expansion, spanning my time as a counseling psychology trainee and a practicing CBT therapist working in private practice and the NHS. Partaking on the course gave me the, space, time and flexibility to actively engage in reflexive practice. As mentioned above, this process had been in operation well prior to starting the Doctoral course. It is partly evidenced in my expansion of therapeutic skills through becoming aware of and engaging in the practice of Eye Movement Desensitization Reprocessing, and eventually qualifying as a practitioner in it. This was discussed previously in section 1.3. After starting the Doctorate course in 2010, I became aware of the great utility and theoretical background to Acceptance and Commitment Therapy. Because of the opportunities and structure of the Doctorate course, this was done in a great deal more detail than I might have done through just partaking in therapeutic practice, and going on short training courses. Personal reflexivity played a key role through the encountering of therapeutic difficulties during the course of ‘standard’ second-wave CBT practice. Specifically this was the production of two pieces of Doctoral research evidencing developmental
transitional changes from second to third-wave CBT practice (Siddiqui 2012, 2014). The lenses through which I viewed the transitions were those of personal development through my start in real therapy work as a Person Centered Counsellor. I then becoming a second-wave CBT practitioner (but without abandoning person centered values or principles); then incorporating EMDR (but without abandoning person centered values or principles, or those of CBT); and then subsequently incorporating third-wave CBT approaches in general, and ACT in particular. The Specific examples referred to above, of this last shift are firstly the production of two pieces of work that document transition from second-wave to third-wave practitioner. The title of the first piece (Siddiqui, 2012) was “How does a second-wave cognitive behavioural practitioner manage a transition to third-wave practice?” The title of the second piece (Siddiqui 2014) was “Live Transitional Mid-Session Moments from 2nd to 3rd wave Cognitive Behavioural Therapy”. These papers document in detail a complex shifting of my therapeutic practice. This shifting of practice was fed by self-reflection on uncomfortable internal feelings on encountering therapeutic impasses, whilst conducting demonstrably competent second-wave CBT (at least as measured by the Cognitive Therapy Rating Scale of Blackburn, James, Milne, and Reichelt, 2000). This self-reflection led to moves to a fuller implementation third-wave CBT practice. The process of self-reflection that fed the above-described developmental processes was echoed during the conduct of this research whilst processing and analyzing the quantitative data streams. During this ongoing process of analysis, it would have been easy to exercise influence, perhaps in a non-verbal, unconscious fashion, towards the participants in contrasting phases. This might have occurred due to the clearly emerging patterns of response being observed as a result of the ongoing differential effects of the alternating phases. The process of self-reflection somewhat mitigated the effects of this, by the awareness that even null hypotheses findings are of great value and should be reported. Added to this was awareness during collection and analysis of the quantitative phases, that the (independently recorded) follow up qualitative phase should be used as a triangulation point and moderator. The whole research endeavour was to me, part of a research developmental process that will inform me in future work, in
both the realms of research and therapy. The aim is to hopefully keep an open mind to external expectations and influences, pre-conceptions, personal assumptions and to what is achievable in terms of practicalities, and to observe and listen to self-reflection.

*Methodological Reflexivity*

My background is psychology stems from completion of my psychology degree back in 1981 as noted above. The “experimental” ethos was during the three years of that course was heavily reliant on positivistic methodology; the “objective” measurement of data, using “validated” psychometric measures on “subjects.” There was no real awareness imparted or experienced at that time, on the potential value or methodology of looking at a “subjects” subjective experience. This type of methodology, until very recently, heavily pervaded the world of clinical psychology and second–wave CBT (Strawbridge and Wolfe, 2010 for example, explore some differences between clinical and counseling psychology). At the time of my undergraduate degree, counselling psychology in the UK, and one of its primary methods of enquiry - qualitative research, was in its infancy. Later on in my career (2006) at postgraduate level, I conducted research for a Master degree in Cognitive and Behavioural Psychotherapy (second-wave CBT). Again the methodological ethos and emphasis was on quantitative methods. I do not recall one single reference to qualitative approaches during lectures or whilst students and tutors discussed previously conducted or potential future Masters research projects. I attempted to introduce a qualitative element to my own investigate into the use of EMDR as a new protocol to help reduce stuttering. I was advised not to include this element and ended up relying on quantitative and purely behavioral measures. Whilst conducting the research, I was acutely aware of the subjective experience of the participant who was experiencing stuttering issues. Part of this awareness was his personal sense of liberation when positive results started to emerge from the use of the EMDR protocol. This very persona facet was not recorded in the format of his own subjective experience. It felt to me, that the scope of the study was incomplete, and lacked richness. If the study were to be extended or replicated, then the use of a mixed methods approach would, in my view, be
highly desirable in producing better science from practice fed (scientist practitioner) experience. Reflection on the above factors influenced the choice of methodology and design, and they are considered further below.

The current methodology was a deliberate attempt at mixed method research (see 3.10), as described by Hanson (2005). The choice of effect size (Coe 2002) as a method of quantitative analysis was on reflection, a positive pre-meditated move in the direction of a mixed methods design. This was rather than opting for a sort of bolting together of a p-values driven quantitative part of research, with the afterthought of a quantitative analysis. I feel that this out of the norm approach (for both counseling and clinical psychology modalities) has been justified.

Despite having had hugely valuable input from two research supervisors, there would be in the future, more advantages in incorporating more people in the day-to-day research process as part of a team-based approach to investigations. A further post hoc deliberation is over the complexity and time span of the ABACAB, plus follow up design. This is that this type of design is perhaps too complex for one person to run comfortably, even though another researcher was involved in the qualitative part. The initial appeal of this design was the potential that Wells, White and Carter (1997) refer to as offering “...a powerful means of demonstrating that Attention Training Technique mechanisms are the central causal agent of change” (p. 228). There was a strong attraction to try demonstrating this might be the case for VTDT and TS. However the length and complexity of its implementation perhaps are pointers as to why the design has not been used more frequently since 1997. The qualitative results highlighted these as being problem areas for some of the participants (see Figure 28 Q7 and 9). Future work might benefit from a more compact, less time hungry and team-based mixed methods approach.

Epistemological Reflexivity

The research design was a deliberate attempt not to construct the data to provide justification for support of a technique uncovered and developed by an individual. There was a willingness from the outset planning stages, through the
conduct of the research and various data collection stage for uncovering information in an unbiased as possible, systematic and replicable fashion. However, any potential future research ought to be conducted by autonomous parties or individuals. I have not found significant ‘truths” about VTDT, but have gone some way to justify further investigations into it with some signposting being offered. There is some doubt that had this investigation been purely quantitative, or purely qualitative, that the conclusions might not have been similar to those reached in this study. Had this study only relied on the effect size quantitative findings, then the moderating influence of the qualitative semi-structured interview would not have been present. Had the study only used the analyses from qualitative semi-structured interviews, then the richness and strength of effect information provided by the effect sizes would have been totally missed. Had the use of visual inspection of the psychometric data (as recommended by Alberto and Troutman, 2006; Tawney and Gast, 1984) not been incorporated, the triangulation and different views of the data from that of effect sizes, would have been lost. If the study had not been constructed as it was, it might have lost a degree of richness that the mixed methods approach appears to impart.
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APPENDIX 1

Ruminative and Intrusive Thoughts (RATs) and Verbal Thought Disruption Technique (VTDT)

Deliberately accessing problematic thoughts and disrupting them might be of use to help exercise control over ruminative and intrusive thoughts. As briefly demonstrated in the session, we are using targeted “gibberish” as a means to attempt to control RATs. You can also deliberately access negative emotions, memories, images, bodily feelings and target the RATs that are usually associated with them. VTDT may or may not have a positive or negative effect on RATs.

Stages of VTDT.

1. Deliberately target or experience ruminative and intrusive thoughts (RATs).
2. Identify the RATs (often they are “old friends”), and opposite positive cognitions.
3. Rate Subjective Units of Distress (SUDs) 0-10 on the RATs.
4. Introduce VTDT.
5. Vary VTDT as a function of the frequency, intensity and duration, and SUDs of the RATs.
6. Re-introduce the RATs, monitor SUDs.
7. Re-assess the impact of the target RATs, are they increasing or decreasing.
8. If SUDs do not decrease, go back to stage 4.
9. Stop the procedure after 10 minutes.
10. Use relaxation phase, meditation of breath (see next page).

It is requested that you only use the VTDT technique in this part of the research. The researcher will remind you about this at the appropriate phases.
Stage 10. Sample instructions for mindful breathing

- Settle into a comfortable, balanced sitting position on a chair or floor in a quiet room.

- Keep your spine erect. Allow your eyes to close.

- Bring your awareness to the sensations of contact wherever your body is being supported. Gently explore how this really feels.

- Become aware of your body’s movements during breathing, at the chest, at the abdomen.

- As the breath passes in and out of the body, bring your awareness to the changing sensations at the abdominal wall. Maintain this awareness throughout each breath and from one breath to the next.

- Allow the breath simply to breathe, without trying to change or control it. Just noticing the sensations that go with every movement.

- As soon as you notice your mind wandering, bring your awareness gently back to the movement of the abdomen.

- Do this over and over again. Every time, it is fine. It helps the awareness to grow. Be patient with yourself.

- After 10 minutes or so, bring the awareness gently back to your whole body, sitting in the room.

- Open your eyes. Be ready for whatsoever comes next.
APPENDIX 2

Ruminative and Intrusive Thoughts (RATs) and Thought Suppression

A commonly used tactic in response to RATs is to suppress the thought. You have probably used this tactic before. We would like you to formally use this tactic in controlled fashion in respect to RATs. Thought suppression involves focusing one’s thoughts on something other than the undesirable thought, its using one thing or another of your choice push out the RATs.

Thought suppression may or may not have a positive or negative effect on RATs.

1. Target or experience ruminative and intrusive thoughts (RATs).
2. Identify the RATs (often they are “old friends”) and opposite positive cognitions.
3. Rate Subjective Units of Distress (SUDs) 0-10 on the RATs.
4. Introduce thought suppression.
5. Vary thought suppression as a function of the frequency, intensity and duration, and SUDs of the RATs.
6. Re-introduce the RATs, monitor SUDs.
7. Re-assess the impact of the target RATs, are they increasing or decreasing.
8. If SUDs do not decrease, go back to stage 4.
9. Stop the procedure after 10 minutes.
10. Use relaxation phase, meditation of breath (see next page).

It is requested that you only use the above stages 1-10 form of thought suppression (distraction) in this part of the research. The researcher will verbally remind you about this at the appropriate phases.
Stage 10. Sample instructions for mindful breathing

• Settle into a comfortable, balanced sitting position on a chair or floor in a quiet room.

• Keep your spine erect. Allow your eyes to close.

• Bring your awareness to the sensations of contact wherever your body is being supported. Gently explore how this really feels.

• Become aware of your body’s movements during breathing, at the chest, at the abdomen.

• As the breath passes in and out of the body, bring your awareness to the changing sensations at the abdominal wall. Maintain this awareness throughout each breath and from one breath to the next.

• Allow the breath simply to breathe, without trying to change or control it. Just noticing the sensations that go with every movement.

• As soon as you notice your mind wandering, bring your awareness gently back to the movement of the abdomen.

• Do this over and over again. Every time, it is fine. It helps the awareness to grow. Be patient with yourself.

• After 10 minutes or so, bring the awareness gently back to your whole body, sitting in the room.

• Open your eyes. Be ready for whatsoever comes next.
Thank you for expressing an interest in participated in the advertised project. I am conducting research as part of a Professional Doctorate in Counselling Psychology at The University of Manchester Department of Education. This is a two page document, the first page contains brief information about the nature, aims and procedure of the research, the second is a certificate of consent should you agree to take part.

The purpose of the project is to investigate if two types of activities have any influence on ruminative and intrusive thoughts (RATs). RATs are repetitive, upsetting, and may involve, images or impulses of internal origin that suddenly appear. They can be irrational, unrealistic, foreign to one’s general character, or just generally unwanted and can be difficult to control. Rumination is where people focus on their thoughts, and often the causes and consequences of them. Because I am looking at often unpleasant thoughts you could experience negative feelings during the research. It is anticipated that there will be no lasting negative effects to these experiences, and there is a built in containment procedure at relevant stages of the procedures.

You will be asked to identify your RATs and asked to complete some standard psychological questionnaire measures at each of the following stages:

There will be a two-week period where we ask you to monitor your RATs, and record them on diary sheets we provide.

You will then be offered a session where you will be shown a technique that may or may not have a positive or negative effect on RATs. There will then two week period where we ask you to utilise the technique daily. We ask you to monitor your RATs, and record them on diary sheets we provide.

Then you will be asked not to use this first technique for a period of two weeks. We ask you to monitor your RATs, and record them on diary sheets we provide.

Next, you will then be shown another technique that may or may not have a positive or negative effect on RATs. There will then two week period where we ask you to utilise the technique daily. We ask you to monitor your RATs, and record them on diary sheets we provide.

You will then be asked not to use this second (or first technique) for a period of two weeks. We ask you to monitor your RATs, and record them on diary sheets we provide.

You will then be asked to re-introduce the first technique for a period of two weeks. We ask you to monitor your RATs, and record them on diary sheets we provide.

There will be a de-brief session at the end of stage 6 with a short interview about your impressions of taking part in the research. The researcher will arrange mutually convenient appointments (and remind you of them). The contents and conclusions of the interview will be checked with you after analysis.

Participation is entirely voluntary, you can drop out of the research project at any time.
If there is a negative effect that you feel unable to cope with, you will be offered external sources of help and further support. The results of the research may help you decide if any of the techniques are useful in reducing unwanted effects of ruminative and intrusive thoughts. If you wish, a summary of the research finding will be forwarded to you in due course.

The research project has been approved by the Research and Ethics Committee of the University of Manchester, and the principle supervisor is Dr. Terry Hanley who may be contacted at terry.hanley@manchester.ac.uk

Certificate of Consent

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research.

Print Name of Participant

Signature of Participant

Date

Thank you for your help in agreeing to help with this research.
ADVERT  Take part in a research project into negative thoughts

Do you have negative thoughts that get “stuck in your head” and you have difficulty in taking your mind off them?

Participants over 18 years of age with these are invited to take part in a Manchester University research project which looks at two methods of reducing these negative thoughts.

The research is being conducted as part of professional doctorate in counselling psychology, and will occur over an eight week period. The commitment is to attend two sessions where you will receive training in two treatment methods for negative intrusive thoughts. Throughout the eight week period, you will be asked to monitor and record your negative thoughts and fill out some questionnaires. The researchers will guide you as to how and when to record the thoughts.

If you are interested in taking part, please contact

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Oldham
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01245 787875
07977 400678
nadim.i.siddiqui@gmail.com
www.cognitive-behaviour-therapy.co.uk

The research supervisor is Dr Terry Hanley
terry.hanley@manchester.ac.uk
APPENDIX 4

Some examples of positive and negative cognitions (thoughts)

<table>
<thead>
<tr>
<th>Negative cognitions (RATs)</th>
<th>Positive cognitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t deserve love</td>
<td>I deserve love; I can have love</td>
</tr>
<tr>
<td>I am a bad person</td>
<td>I am a good (loving) person</td>
</tr>
<tr>
<td>I am terrible</td>
<td>I am fine as I am</td>
</tr>
<tr>
<td>I am worthless (inadequate)</td>
<td>I am worthy; I am worthwhile</td>
</tr>
<tr>
<td>I am shameful</td>
<td>I am honourable</td>
</tr>
<tr>
<td>I am not loveable</td>
<td>I am loveable</td>
</tr>
<tr>
<td>I am not good enough</td>
<td>I am deserving; I am a good person,</td>
</tr>
<tr>
<td>I deserve only bad things</td>
<td>I deserve good things</td>
</tr>
<tr>
<td>I cannot be trusted</td>
<td>I can (learn to) trust myself</td>
</tr>
<tr>
<td>I cannot trust my judgement</td>
<td>I can trust my judgement</td>
</tr>
<tr>
<td>I cannot succeed</td>
<td>I can succeed</td>
</tr>
<tr>
<td>I am not in control</td>
<td>I am now in control</td>
</tr>
<tr>
<td>I am powerless</td>
<td>I now have choices</td>
</tr>
<tr>
<td>I am weak</td>
<td>I am strong</td>
</tr>
<tr>
<td>I cannot protect myself</td>
<td>I can (learn) to take care of myself</td>
</tr>
<tr>
<td>I am stupid</td>
<td>I have intelligence</td>
</tr>
<tr>
<td>I am insignificant (unimportant)</td>
<td>I am significant (important)</td>
</tr>
<tr>
<td>I am a disappointment</td>
<td>I am okay the way I am</td>
</tr>
<tr>
<td>I deserve to die</td>
<td>I deserve to live</td>
</tr>
<tr>
<td>I deserve to be miserable</td>
<td>I deserve to be happy</td>
</tr>
<tr>
<td>I cannot get what I want</td>
<td>I can get what I want</td>
</tr>
<tr>
<td>I am a failure</td>
<td>I can succeed</td>
</tr>
<tr>
<td>I have to be perfect</td>
<td>I can be myself</td>
</tr>
<tr>
<td>I am permanently damaged</td>
<td>I am (can be) healthy</td>
</tr>
<tr>
<td>I am ugly</td>
<td>I am attractive/loveable</td>
</tr>
<tr>
<td>I should have done something</td>
<td>I did the best I could</td>
</tr>
<tr>
<td>I did something wrong</td>
<td>I learned (can learn) from it</td>
</tr>
<tr>
<td>I am in danger</td>
<td>It is over, I am safe now</td>
</tr>
<tr>
<td>I cannot stand it</td>
<td>I can handle it</td>
</tr>
<tr>
<td>I cannot trust anyone</td>
<td>I can choose who to trust</td>
</tr>
<tr>
<td>I cannot let it out</td>
<td>I can choose to let it out</td>
</tr>
<tr>
<td>I do not deserve</td>
<td>I can have (deserve)</td>
</tr>
</tbody>
</table>
APPENDIX 5

Overview of research model and phases

<table>
<thead>
<tr>
<th>i</th>
<th>ii</th>
<th>iii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>VTDT Phase 1</td>
<td>Baseline</td>
</tr>
<tr>
<td>Week 1</td>
<td>Week 1</td>
<td>Week 1</td>
</tr>
<tr>
<td>MCQ-30, MCQ-30, MCQ-30, MCQ-30, MCQ-30,</td>
<td>TCQ, GHQ</td>
<td>TCQ, GHQ</td>
</tr>
<tr>
<td>Daily RATs</td>
<td>Daily RATs</td>
<td>Daily RATs</td>
</tr>
<tr>
<td>Diary</td>
<td>Diary</td>
<td>Diary</td>
</tr>
<tr>
<td>Daily SUDs</td>
<td>Daily SUDs</td>
<td>Daily SUDs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>iv</th>
<th>v</th>
<th>vi</th>
<th>vii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thought Suppression</td>
<td>Baseline</td>
<td>VTDT Phase 2</td>
<td>1 Month Follow Up</td>
</tr>
<tr>
<td>(Formalised TAU) Phase</td>
<td>Week 1</td>
<td>Week 1</td>
<td>Week 1</td>
</tr>
<tr>
<td>MCQ-30, MCQ-30, MCQ-30, MCQ-30,</td>
<td>TCQ, GHQ</td>
<td>TCQ, GHQ</td>
<td>TCQ, GHQ</td>
</tr>
<tr>
<td>Daily RATs</td>
<td>Daily RATs</td>
<td>Daily RATs</td>
<td>Daily RATs</td>
</tr>
<tr>
<td>Diary</td>
<td>Diary</td>
<td>Diary</td>
<td>Diary</td>
</tr>
<tr>
<td>Daily SUDs</td>
<td>Daily SUDs</td>
<td>Daily SUDs</td>
<td>Daily SUDs</td>
</tr>
</tbody>
</table>

Qualitative Semi-structured interview at 1 month follow up.

Key: MCQ-30 = Meta-Cognitions Questionnaire 30, TCQ = Thought Control Questionnaire, GHQ = General Health Questionnaire, RATs = Identified Ruminative and Intrusive Thought, SUDs = Subjective Units of Distress. Highlighted areas = interventions.
APPENDIX 6

Please record RATs as they occur, and the Subjective Unit of Distress (SUDs) at time of occurrence.

<table>
<thead>
<tr>
<th>Day</th>
<th>Slept for (hours)</th>
<th>8-9 am</th>
<th>SUDS</th>
<th>9-10 am</th>
<th>SUDS</th>
<th>10-11 am</th>
<th>SUDS</th>
<th>11-12 am</th>
<th>SUDS</th>
<th>12-1 pm</th>
</tr>
</thead>
</table>

Abridged for illustration, times go on to midnight on actual hand-out.
APPENDIX 7

META-COGNITIONS QUESTIONNAIRE 30
MCQ-30
Adrian Wells & Samantha Cartwright-Hatton (1999)

This questionnaire is concerned with beliefs people have about their thinking. Listed below are a number of beliefs that people have expressed. Please read each item and say how much you generally agree with it by circling the appropriate number. Please respond to all the items, there are no right or wrong answers.

<table>
<thead>
<tr>
<th>Gender: ......................</th>
<th>Age: ...............</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Worrying helps me to avoid problems in the future</td>
<td>Do not agree</td>
</tr>
<tr>
<td>2. My worrying is dangerous for me</td>
<td>1</td>
</tr>
<tr>
<td>3. I think a lot about my thoughts</td>
<td>1</td>
</tr>
<tr>
<td>4. I could make myself sick with worrying</td>
<td>1</td>
</tr>
<tr>
<td>5. I am aware of the way my mind works when I am thinking through a problem</td>
<td>1</td>
</tr>
<tr>
<td>6. If I did not control a worrying thought, and then it happened, it would be my fault</td>
<td>1</td>
</tr>
<tr>
<td>7. I need to worry in order to remain organised</td>
<td>1</td>
</tr>
<tr>
<td>8. I have little confidence in my memory for words and names</td>
<td>1</td>
</tr>
<tr>
<td>9. My worrying thoughts persist, no matter how I try to stop them</td>
<td>1</td>
</tr>
<tr>
<td>10 Worrying helps me to get things sorted out in my mind</td>
<td>1</td>
</tr>
<tr>
<td>11. I cannot ignore my worrying thoughts</td>
<td>1</td>
</tr>
<tr>
<td>12. I monitor my thoughts</td>
<td>1</td>
</tr>
<tr>
<td>13. I should be in control of my thoughts all of the time</td>
<td>1</td>
</tr>
</tbody>
</table>
THOUGHT CONTROL QUESTIONNAIR (TCQ)

Most people experience unpleasant and/or unwanted thoughts (in verbal and/or picture form). Which can be difficult to control. We are interested in the techniques that you generally use to control such thoughts.

Below are a number of things that people do to control these thoughts. Please read each statement carefully, and indicate how often you use each technique by circling the appropriate number. There are no right or wrong answers. Do not spend too much time thinking about each one.

When I experience an unpleasant / unwanted thought:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Almost always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I call to mind positive images instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>I tell myself not to be so stupid</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>I focus on the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>I replace the thought with a more trivial bad thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>I don’t talk about the thought to anyone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>I punish myself for thinking the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>I dwell on other worries</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>I keep the thought to myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>I occupy myself with work instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>I challenge the thought’s validity</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>I get angry at myself for having the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>I avoid discussing the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>I shout at myself for having the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>I analyse the thought rationally</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>I slap or pinch myself to stop the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>I think pleasant thoughts instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>I find out how my friends deal with these thoughts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>I worry about more minor things instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19</td>
<td>I do something that I enjoy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20</td>
<td>I try to reinterpret the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21</td>
<td>I think about something else</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22</td>
<td>I think more about the more minor problems I have</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23</td>
<td>I try a different way of thinking about it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24</td>
<td>I think about past worries instead</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25</td>
<td>I ask my friends if they have similar thoughts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26</td>
<td>I focus on different negative thoughts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27</td>
<td>I question the reasons for having the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28</td>
<td>I tell myself that something bad will happen if I think the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29</td>
<td>I talk to a friend about the thought</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30</td>
<td>I keep myself busy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
APPENDIX 9

General Health Questionnaire (GHQ-28)

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
</tr>
</thead>
</table>

Please read this carefully. We should like to know if you have had any medical complaints and how your health has been in general over the past few weeks. Please answer ALL the questions on the following pages simply by underlining the answer that you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those you had in the past.

It is important that you try to answer ALL the questions.

Thank you very much for your co-operation.

Have you recently:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Better than usual</th>
<th>Same as usual</th>
<th>Worse than usual</th>
<th>Much more than usual</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Been feeling perfectly well and in good health?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>A2</td>
<td>Been feeling in need of a good tonic?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>A3</td>
<td>Been feeling run down and out of sorts?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>A4</td>
<td>Felt that you are ill?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>A5</td>
<td>Been getting any pains in your head?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>A6</td>
<td>Been getting a feeling of tightness or pressure in your head?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>A7</td>
<td>Been having hot or cold spells?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>B1</td>
<td>Lost much sleep over worry?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>B2</td>
<td>Had difficulty in staying asleep once you are off?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>B3</td>
<td>Felt constantly under strain?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>B4</td>
<td>Been getting edgy or bad-tempered?</td>
<td>Not at all</td>
<td>No more than usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>B5</td>
<td>Been getting scared or panicky for no good reason?</td>
<td>Not at all</td>
<td>Same as usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>B6</td>
<td>Found everything getting on top of you?</td>
<td>Not at all</td>
<td>Same as usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
<tr>
<td>B7</td>
<td>Been feeling nervous and strung-up all the time?</td>
<td>Not at all</td>
<td>Same as usual</td>
<td>Rather more than usual</td>
<td>Much more than usual</td>
</tr>
</tbody>
</table>
Have you recently:

C1 Been managing to keep yourself busy and occupied?  
   - More so than usual
   - Same as usual
   - Rather less than usual
   - Much less than usual

C2 Been taking longer over the things you do?  
   - Quicker than usual
   - Same as usual
   - Longer than usual
   - Much longer than usual

C3 Felt on the whole you were doing things well?  
   - Better than usual
   - About the same
   - Worse than usual
   - Much more than usual

C4 Been satisfied with the way you’ve carried out your task?  
   - More satisfied
   - About same as usual
   - Less satisfied than usual
   - Much less satisfied

C5 Felt that you are playing a useful part in things?  
   - More so than usual
   - Same as usual
   - Less useful than usual
   - Much less useful

C6 Felt capable of making decisions about things?  
   - More so than usual
   - Same as usual
   - Less useful than usual
   - Much less capable

C7 Been able to enjoy your normal day-to-day activities?  
   - More so than usual
   - Same as usual
   - Less useful than usual
   - Much less than usual

D1 Been thinking of yourself as a worthless person?  
   - Not at all
   - No more than usual
   - Rather more than usual
   - Much more than usual

D2 Felt that life is entirely hopeless?  
   - Not at all
   - No more than usual
   - Rather more than usual
   - Much more than usual

D3 Felt that life isn’t worth living?  
   - Not at all
   - No more than usual
   - Rather more than usual
   - Much more than usual

D4 Thought of the possibility that you might make away with yourself?  
   - Definitely not
   - I don’t think so
   - Has crossed my mind
   - Definitely have

D5 Found at times you couldn’t do anything because your nerves were too bad?  
   - Not at all
   - No more than usual
   - Rather more than usual
   - Much more than usual

D6 Found yourself wishing you were dead and away from it all?  
   - Not at all
   - No more than usual
   - Rather more than usual
   - Much more than usual

D7 Found that the idea of taking your own life kept coming into your head?  
   - Definitely not
   - I don’t think so
   - Has crossed my mind
   - Definitely has

A  B  C  D  TOTAL
Adapted Version of Client Change Interview Schedule

Interview Strategy: This interview works best as a relatively unstructured empathic exploration of the client’s experience of the research study. Think of yourself as primarily trying to help the client tell you the story of his or her of the research study they have taken part in. It is best if you adopt an attitude of curiosity about the topics raised in the interview, using the suggested open-ended questions plus empathic understanding responses to help the participants elaborate on his/her experiences. Thus, for each question, start out in a relatively unstructured manner and only impose structure as needed. For each question, a number of alternative wordings have been suggested, but keep in mind that these may not be needed.

- Ask client to provide as many details as possible
- Use the “anything else” probe (e.g., "Are there any other changes that you have noticed?"): inquire in a non-demanding way until the client runs out of things to say.

Introduction given to clients: After each phase of treatment, clients are asked to come in for up to an hour-long semi-structured interview. The major topics of this interview are any changes you have noticed since the research study began, what you believe may have brought about these changes, and helpful and unhelpful aspects of the research study. The main purpose of the interview is to allow you to tell us about the research study and the research in your own words. This information will help us to understand better how the research study worked; it will also help us to improve future work. This interview is audio-recorded for later transcription. Please provide as much detail as possible.

Interview Schedule:

1. General Questions: [about 5 min]
   1a. How are you doing now in general?
   1b. What has the research study been like for you so far? How has it felt to be in the research study?
   1c. What medications are you currently on? (interviewer: record on form, including dose, how long, last adjustment, herbal remedies).

2. Changes: [about 10 min]
   2a. What changes, if any, have you noticed in yourself since the research study started? (interviewer: Reflect back change to client and write down brief versions of the changes for later. If it is helpful, you can use some of these follow-up questions: For example, Are you doing, feeling, or thinking differently from the way you did before? What specific ideas, if any, have you gotten from the research study so far, including ideas about yourself or other people? Have any changes been brought to your attention by other people?)
   2b. Has anything changed for the worse for you since the research study started?
   2c. Is there anything that you wanted to change that hasn’t since the research study
started?

3. **Change Ratings**: [about 10 min] (Go through each change and rate it on the following three scales:)

3a. For each change, please rate how much you expected it vs. were surprised by it? (Use this rating scale:)
   (1) Very much expected it.
   (2) Somewhat expected it.
   (3) Neither expected nor surprised by the change.
   (4) Somewhat surprised by it.
   (5) Very much surprised by it.

3b. For each change related to RATs, please rate how likely you think it would have been if you hadn’t been in the research study? (Use this rating scale:)
   (1) Very unlikely without the research study (clearly would not have happened).
   (2) Somewhat unlikely without the research study (probably would not have happened).
   (3) Neither likely nor unlikely (no way of telling).
   (4) Somewhat likely without the research study (probably would have happened).
   (5) Very likely without the research study (clearly would have happened anyway).

3c. How important or significant to you personally do you consider this change with respect to your RATs to be? (Use this rating scale:)
   (1) Not at all important.
   (2) Slightly important.
   (3) Moderately important.
   (4) Very important.
   (5) Extremely important.

4. **Helpful Aspects**: [about 10 min] Can you sum up what has been helpful about your participation in the research study so far? Please give examples. (For example, general aspects and specific events).

5. **Attributions**: [about 5 min] In general, what do you think has caused the various changes with respect to your RATs that you described? In other words, what do you think might have brought them about? (Including things both outside of the research study and in the research study).

6. **Resources**: [about 5 min]
   6a. What personal strengths do you think have helped you make use of the research study to deal with your problems? (what you’re good at, personal qualities).
   6b. What things in your current life situation have helped you make use of the research study to deal with your problems? (family, job, relationships, living arrangements).

7. **Problematic Aspects**: [about 15 min]
   7a. What kinds of things about the research study have been hindering, unhelpful, negative or disappointing for you? (For example, general aspects, specific events).
   7b. Were there things in the research study which were difficult or painful but still OK or perhaps helpful? What were they?
7c. Here is a copy of the data collected from you during the study. Please take as long as you like to look at it. After viewing this data, are any of the previous responses you made to the above questions different to when you first made them?

8. **Limitations**: [about 5 min]

8a. What personal weaknesses do you think have made it harder for you to use the protocols you learned during the research study to deal with your problems? (things about you as a person).

8b. What things in your life situation have made it harder for you to use the protocols you learned research study to deal with aspects of problems in your life? (family, job, relationships, living arrangements).

9. **Suggestions**. [about 5 min] Do you have any suggestions for us, regarding the research or the research study? Do you have anything else that you want to tell me?

APPENDIX 11

**Rumination questionnaire**

**Instructions:**
For each of the statements located on the next two pages, please indicate your level of agreement or disagreement by circling one of the scale categories to the right of each statement. Use the scale as shown below:

<table>
<thead>
<tr>
<th>Strongly Disagree 1</th>
<th>Disagree 2</th>
<th>Neutral 3</th>
<th>Agree 4</th>
<th>Strongly Agree 5</th>
</tr>
</thead>
</table>

1. My attention is often focused on aspects of myself I wish I'd stop thinking about.................................................................

2. I always seem to be "re-hashing" in my mind recent things I've said or done.................................................................

3. Sometimes it is hard for me to shut off thoughts about myself. ........................................

4. Long after an argument or disagreement is over with, my thoughts keep going back to what happened.................................................................

5. I tend to "ruminate" or dwell over things that happen to me for a really long time afterward. .................................................................

6. I don't waste time re-thinking things that are over and done with. ........................................

7. Often I'm playing back over in my mind how I acted in a past situation........................................

8. I often find myself re-evaluating something I've done.................................................................

9. I never ruminate or dwell on myself for very long.................................................................

10. It is easy for me to put unwanted thoughts out of my mind.................................................................
11. I often reflect on episodes in my life that I should no longer concern myself with.

12. I spend a great deal of time thinking back over my embarrassing or disappointing moments.

Based on Trapnell & Campbell (1999).

Admission criteria:
Score range 48 – 60 illustrates rumination on 12 questions.
Volunteers with minimum score of 24 will be recruited.
Sample size 10.
Final interview conducted by independent qualified counsellor with no association with the research project.
APPENDIX 12

EXAMPLE OF CODING FROM SEMI-STRUCTURED INTERVIEW

Example of coding from semi-structured interview transcript extracts. Coding layer in bold and highlighted. Participant content in italics.

Q5. What do you think has caused the various changes with respect to your RATs that you described? In other words, what do you think might have brought them about?

Participant 3

Part of was that during the study, I came to recognize that my thoughts seemed to have a life of their own. They pop up into my head, sometimes at awkward times. Pretty annoying sometimes.

Participant 7

Sometimes I felt like it’s like having two heads, one that’s me and one that me but not me, but a voice inside. Trying to shut it up is frustrating and a pain... it won’t shut up.

Participant 8

I realize that sometimes I am my own worst enemy, but I can’t help it happening.

INTERVIEWER QUESTION: “WHAT HAPPENS?”

Self-doubt? Sort of questioning myself when I don’t really need to.

INTERVIEWER QUESTION: “IN WHAT WAY?”

Sort of it emerging from nowhere, it’s hard to explain.

INTERVIEWER QUESTION: IF YOU COULD TRY:

It’s my thoughts, it’s... like a commentary, it must be me, but not me.