

Running head: PRAGMATIC CASE STUDIES OF SECOND- AND THIRD-WAVE
PRAGMATIC CASE STUDIES OF SECOND- AND THIRD-WAVE COGNITIVE
BEHAVIORAL INTERVENTIONS: CLARIFYING MECHANISMS OF CHANGE

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ABSTRACT

This project focuses on clarifying the differences between the cognitive-behavioral techniques of cognitive restructuring and of cognitive defusion. Two questions were explored: (1) do cognitive restructuring and cognitive defusion function through different psychological pathways, and (2) do these techniques lead to different psychological impacts? The project consists of systematic case studies of three clients. The data are exclusively qualitative, being obtained from semi-structured clinical interviews, session notes, and video tape recordings of sessions. For each of the case studies, instances of cognitive restructuring and cognitive defusion were examined through the lens of both of these techniques' respective psychological theories, that is, Beck's cognitive theory and relational frame theory. The similarities and differences that emerged between these techniques were then used to develop a unifying theory of the phenomenological differences and similarities between cognitive restructuring and cognitive defusion. Analyses indicate that both cognitive defusion and cognitive restructuring use the same psychological pathway, but in different ways. Specifically, both techniques present an argument for why thoughts are not reflections of reality, and then coach the individual on how to interact with their thoughts accordingly. However, the arguments used by the two interventions differ, in that cognitive restructuring allows the possibility that the thought may be a reflection of reality, while cognitive defusion does not. Clinical implications for this framework are identified and discussed.

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*Pragmatic Case Studies of Second- and Third-Wave Cognitive Behavioral Interventions:
Clarifying Mechanisms of Change*

Principal Investigator: Will Buerger, PsyM

I. Objectives

This dissertation consists of a series of systematic case studies of three patients who have received cognitive behavioral treatments from the author, all of which included either a cognitive restructuring or a cognitive defusion intervention component. The purpose of the study is to elucidate the similarities and differences between these two ostensibly unique interventions.

II. Background and Rationale

History of Clinical Psychology, and the Development of CBT and ACT

The field of clinical psychology has seen significant developments over the past fifty years. In spite of being a relatively young field, it has evolved from an extension of philosophy, making highly speculative claims, to a widely-accepted discipline with a myriad of empirically supported treatments for a variety of mental health problems. This path includes the study of operant and classical conditioning, accompanying the advent of behaviorism; the cognitive revolution harboring in the advent of cognitive behavioral therapy (CBT) and its accompanying emphasis on thoughts and their structure; and recent additions of acceptance and mindfulness techniques, originating in Eastern philosophy.

This path has not been unidirectional, and professionals often disagree on what constitutes a “step forward,” within the field. Needless to say, an exploration of the different interpretations and values of the various approaches to clinical psychology is beyond the scope

of this paper. However, focusing on one specific point of contention allows us insight into the importance of being deliberate in defining not only what constitutes a treatment package, but also an active mechanism of treatment. Such information provides further clarification to the path psychology has taken over the previous fifty years, and, by extension, the direction it might go in the future.

The selected point of contention is the difference between the techniques of cognitive restructuring and cognitive defusion, which are the primary means through which a cognitive behavioral therapist will advise a client to interact with their thoughts. In brief, cognitive restructuring refers to the process by which an individual examines the validity of their thoughts, in an effort to identify alternative ways of thinking that are accompanied by less distress, or greater overall functioning. Cognitive interventions that arise from this process therefore generally take the form of telling oneself that “X isn’t a reflection of reality. I can find solace in Y, which is a more realistic interpretation of the circumstances.” Cognitive defusion refers to the process by which an individual strives to see their thought as “just a thought,” rather than a reflection of reality (i.e. de-fuse the connection between thoughts and reality). Cognitive interventions that arise from this process therefore take the form of “X is just a thought. I can find solace in knowing that it does not have to mean anything more.” Cognitive restructuring and cognitive defusion are attributed to Beck’s Cognitive Therapy and Acceptance and Commitment Therapy (ACT), which could be considered examples of the second- and third-wave (respectively) of cognitive behavioral therapy (Beck, 2011; Hayes, 2004; Hayes, Strosahl & Wilson, 2012). This terminology of the “waves” of CBT was first coined by Hayes (2005), who posited that his approach to understanding and interacting with thoughts (i.e. the “third wave”)

made use of a different psychological pathway than the cognitive therapy approaches (e.g. cognitive restructuring) that preceded it.

These descriptions of the foundations and cognitive interventions associated with traditional CBT and ACT highlight what is often seen in the field not as variations on a common theme, but instead as fundamentally different ways of understanding and interacting with thoughts and emotions. This argument for a distinction between ACT and traditional CBT has been made both implicitly and explicitly. Implicit arguments can be seen in the description of different “waves” of CBT, as well as the use of different terminology for the interventions. Explicit arguments can be found in the words of the intervention’s founders and proponents. For instance, Hayes suggests that “third-wave” interventions “build on the first- and second-wave treatments, but seem to be carrying the behavior therapy tradition forward into new territory,” (Hayes, 2004, p. 639) and that ACT ought to be seen as a “distinct and unified model of behavioral change...” (Hayes et al., 2013, p. 180) Such statements act to distinguish “third-wave” cognitive behavioral treatments, presenting them as fundamentally unique and distinct psychological interventions.

This distinction can also be seen in distinctions that Hayes, Strosahl, and Wilson (2012) make in describing the impact of ACT and CBT. Specifically, the authors suggest that challenging the content of thoughts “could also make the thought more important and central, perhaps even causing it to impact behavior more, not less.” (Hayes, Strosahl, & Wilson, 2012, p. 50) This excerpt suggests that while cognitive defusion allows individuals to see their thoughts as less than reflections of reality (i.e. de-fuse from them), traditional CBT techniques (e.g. cognitive restructuring) run the risk of increasing the perceived reality of thoughts. The implication is that by engaging with thoughts, we allow the possibility that they have something

valuable to tell us. Hayes, Strosahl, and Wilson (2012) suggest that this can be problematic, as it lends validity to an invalid construct, much like how arguing with a fool can make their claims appear more legitimate.

CBT and ACT: Mediators of Change & Proposed Differences

This topic of what makes psychotherapies “unique” is essentially a discussion of mediators, or “possible mechanisms through which a treatment might achieve its effects.” (Kraemer, Wilson, Fairburn, & Agras, 2002, p. 878). These mediators are what are responsible for change in therapy and are therefore what determine whether two treatments are different in a substantive, clinically significant manner. The conceptualizations of cognitive restructuring and cognitive defusion provided above therefore implicitly suggest that they make use of different mediators.

However, some authors have found fault with this argument, suggesting that it is inaccurate to treat these interventions as entirely separate and distinct. One such proponent is Hoffman (2008), who stated the following: “Unfortunately, however, many ACT proponents claim that ACT and ACT techniques are incompatible with the CBT model on a fundamental level. Instead of referring to mindfulness-oriented CBT or acceptance-based CBT approaches, the basic CBT model is rejected and replaced by the so-called third wave treatments that are based on post-Skinnerian and behavior-analytic models.” (p. 284) Hoffmann goes on to argue for decreasing the distance between these two concepts, suggesting that we abandon the language of “waves,” and instead embrace the continuous and iterative nature of science.

Yet even Hoffmann, who does not define these treatments as entirely separate and distinct, points to what he sees as fundamental differences in their mediators of treatment. In their exploration of the potential mediators of treatment, Hoffmann and Asmundson (2007)

suggest that, “Aside from differences in the philosophical foundation, the critical difference between CBT and ACT on the strategic level is that CBT techniques are primarily antecedent-emotion focused, whereas ACT and other mindfulness approaches are primarily response-focused.” (p. 2) They therefore posit that traditional CBT focuses its efforts on altering cognitive patterns such that negative emotions are less likely to occur, while ACT focuses on reducing the suffering caused by emotions which have already occurred.

Other authors focus on the apparent difference in how the individual is told to engage with their thoughts. Such a position is adopted by Yovel (2014), who observes that “In CR (cognitive restructuring) negative cognitions are targeted in a logical disconfirmation process and are subsequently changed. In contrast, in CD (cognitive defusion) the content of thoughts is not directly challenged, and instead clients are encouraged to accept the occurrence of the thoughts without attempting to modify them.” (p. 490) A distinction is therefore made between how the individual responds to the thoughts, and whether they seek to alter their content or instead accept them in their current state.

Still other authors land somewhere in the middle, suggesting that while the treatments may have some differences, they are likely overstated. Such a position is held by Arch and Craske (2008), who state the following: “As the social cognition literature suggests (e.g., Tajfel, 1982), group comparisons tend toward amplification and dichotomization of differences between one’s own group and an outside group. Comparisons of ACT and CBT sometimes reflect this tendency.” (p. 263)

The variety of proposed active mechanisms provides some insight into the difficulty in identifying mediators of change. This can also be seen within the history of not only the debate over how disparate we ought to consider the mediators of traditional CBT and ACT, but also the

clarification of what these mediators are in the first place. Arch and Craske (2008) allude to this in their exploration of the topic, observing that “CBT researchers have proposed mechanisms ranging from reductions in the number of negative thoughts and worries, modification of anxiety and fear-related beliefs/schemas, increases in perceived control over anxiety-related symptoms, and reductions in behavioral avoidance.” (p. 273) Arch and Craske go on to detail the ways in which proposed mediators of outcome often do not stand up to empirical scrutiny, thereby suggesting that proposed differences in mediation are not enough to assume actual difference in mediation (e.g. in CBT for social phobia: Hofmann, 2004; CBT for social anxiety; Smits et al., 2006; and CBT for depression and anxiety: Burns and Spangler, 2001). There is therefore confusion not only over what qualifies as a difference between mediators, but also how they ought to be defined in the first place.

This is an important topic to clarify for a number of reasons. For one, in order to improve our treatments, we must first understand how they work, and be able to identify their active mechanisms of treatment. This position is also captured within the NIMH’s research domain criteria (RDoC), which focuses on identifying therapeutic mechanisms rather than categorical classifications of disorders and their accompanying treatments (Cuthbert & Insel, 2013). Unfortunately, the tools of inquiry in experimental psychology are not well-equipped for resolving these questions, which relate to construct definition rather than measurement.

Difficulties in Defining and Measuring Mediators of Change

The aforementioned evolution of clinical psychology has been largely driven by the proliferation of randomized controlled trials (RCTs), the gold-standard for evidence of a treatment’s effectiveness. RCTs work by randomly assigning participants to multiple conditions, with the only differences (i.e., independent variable(s), or IVs) being those which the study seeks

to monitor. The assumption is that by randomly assigning a large number of participants to each condition, any variation between participants (aside from those variables which are being examined as IVs) will be evenly distributed between the two conditions. We can then have a high degree of certainty that any differences in the outcomes of the conditions (i.e., changes in the dependent variable(s)) can be attributed to changes to the IV, rather than the random variation that occurs between participants.

Although this approach has driven a tremendous amount of innovation within the field of psychology, it is not without its limitations. First, each RCT tells us which condition received superior results, but not how it achieved them. It is therefore something like the end score of a sports game, which tells us who won, but not what plays or strategies led the winning team to its victory. This is a problematic absence, as it prevents clinicians from altering interventions to make them more effective and efficient.

This shortcoming is sometimes addressed by the application of dismantling studies, or studies that look to isolate certain aspects of a particular treatment, in order to measure whether they have a significant impact on their intended outcome. Some researchers have suggested that running side-by-side dismantling studies might be one way of clarifying the differences between traditional CBT and ACT, and implicitly, their accompanying cognitive techniques. For instance, Arch and Craske (2008) suggest that “Assessing the same mediators across both treatments, including measures that are hypothesized as specific to each, facilitates the examination of shared and distinct processes of change across ACT and CBT.” (p. 271)

However, there are shortcomings to this approach as well, as it fails to address whether the differences in the components being measured are substantive or semantic. One might hope that such a distinction could be made by examining the difference in outcome of each technique,

as techniques that differ only in semantics should share common outcomes. However, it is impossible to discern whether similar outcomes are the result of two different processes that are equally efficacious, as well as whether different outcomes are the result of the same processes, albeit with one executed less efficaciously.

This distinction may seem pedantic, as one could argue that what matters is not whether the interventions are fundamentally different, but instead whether they differentially impact treatment outcome. This concept is also captured by Arch and Craske (2008), who suggest that “If ACT and CBT demonstrate different pathways and processes of change, do they differentially impact outcome? Or are these two therapies simply different ways of arriving at the same level of symptom and overall life improvement?” (p. 274) However, one could also argue that this question holds very pragmatic implications. For, as discussed above, clarifying the core mediator of change in an intervention will allow us to craft interventions which are more effective and efficient.

Research on Differences in the Mediators of Change of CBT and ACT

These limitations can also be seen within the extant literature on the proposed mediators of both ACT and CBT. First is a study by Deacon, Fawzy, Lickel, and Wolitzky-Taylor (2011), which examines the effectiveness of both cognitive defusion and cognitive restructuring in ameliorating the impact of negative thoughts about body shape. Participants were randomly assigned to practice either cognitive restructuring or cognitive defusion and provided with information on the rationale for each proposed treatment. Measures of body image concerns were provided both immediately following the treatment rationale (the “rationale phase”) and one week following, after participants had practiced utilizing the technique over the following week (the “homework phase”).

Participants in the cognitive defusion condition practiced the “milk exercise,” in which a negative self-referential word is rapidly repeated. This technique was first studied by experimental psychologists in the early 20th century and has been shown to be an effective method of reducing the distress associated with negative thoughts (Masuda, Hayes, Sackett, and Twohig, 2004; Masuda et al., 2009, 2010; Severance & Washburn, 1907). In contrast, participants in the cognitive restructuring condition were coached on how to identify and dispute unrealistic or unhelpful beliefs regarding body image, as adapted from the empirically supported CBT manual for binge eating and bulimia nervosa (Fairburn, Marcus, & Wilson, 1993).

Data analyses suggested that both cognitive defusion and cognitive restructuring were effective in generating improvements in measures of body image concerns, producing results which were statistically comparable. However, these analyses also revealed differences in the rate at which the two techniques took effect. Deacon et al. (2011) found that cognitive defusion led to more immediate effects, as seen in the significantly greater improvements in body image measures at the rationale phase. However, the cognitive defusion condition displayed inferior results at the homework phase, where cognitive restructuring resulted in significant improvements as a result of practicing during the homework week, while cognitive defusion did not. The authors suggested that this lack of improvement may have been caused by a misunderstanding of the concept of cognitive defusion, as “some individuals may have used this technique in an attempt to suppress or dispute the veracity of their negative thoughts rather than accepting and defusing from them.” This description therefore assumes a difference in the mediators of change between the respective treatments, a hypothesis which seems to find support in the differences in treatment outcomes.

Similarities and differences were also found within the mechanisms of how each

intervention appeared to function. Specifically, the authors predicted that participants in both the cognitive defusion and cognitive restructuring conditions would experience reductions in distress, due to reductions in the perceived accuracy of negative body image-related thoughts. However, individuals in the cognitive defusion condition rated thoughts of gaining weight as less important than those in the cognitive restructuring condition, ratings which were predictive of reduced distress rates. The opposite was true for the cognitive restructuring condition, where increased importance of thoughts of being fat (i.e. importance of not having the thought of being fat) were predictive of reduced distress.

Deacon et al. (2011) suggest that these differences are reflective of the difference in mechanisms of change in each intervention. In other words, cognitive restructuring and cognitive defusion present different ways of responding to unhelpful thoughts, approaches which constitute fundamentally different approaches of either accepting (cognitive defusion) or actively challenging (cognitive restructuring) unhelpful thoughts.

However, Deacon et al. (2011) also allude to a potential alternative explanation, which introduces the concept of “teaching to the test.” For if it were true that these interventions do not represent different mechanisms, but instead different ways of describing a common mechanism, then it would also be expected that participants would provide differing descriptions of said common mechanism. Remnants of this hypothesis can be seen in the authors’ observation that, “The increased importance of not having the thought of being fat evident in the cognitive restructuring condition may simply indicate compliance with the instructions for implementing this technique.” (Deacon, Fawzy, Lickel, & Wolitzky-Taylor, 2011, p. 230)

This concept of “teaching to the test” is also reflected in a study by Forman et al. (2007b), which looked to examine the effectiveness of both ACT and cognitive therapy (CT; a

cognitively-oriented variant of traditional CBT) in treating anxiety and mood disorders within an outpatient setting. The study's analysis of CT rather than traditional CBT makes it an ideal study upon which to base our examination of the mediators of change, as it isolates the mechanism in question, cognitive restructuring. The study randomly assigned 101 undergraduate students seeking services at a university counseling center to receive either ACT or CT, provided by 23 doctoral students in CBT-oriented psychology programs. The authors hypothesized that the two interventions would function using different mediators of change, in that CT would be mediated by "the ability to identify and report on internal experiences," and ACT would be mediated by "experiential acceptance and current-moment awareness." (Forman et al., 2007b, p. 779)

Forman et al. (2007b) found CT and cognitive defusion to be equally effective in impacting measures of depression, anxiety, quality of life, life satisfaction, and clinician-rated global functioning. The study also analyzed mediational variables, assessing whether scores on proposed mediators and treatment outcome variables differed by treatment condition. The authors ultimately found that hypothesized mediators accounted for changes in each of the respective conditions, with "experiential avoidance," "acting with awareness," and "acceptance" mediating changes in the ACT group, and "describing" and "observing" mediating changes in the CT group (Forman et al., 2007b, p. 772). However, this reintroduces the aforementioned problem of "teaching to the test" that was observed in the case of Deacon et al. (2011), as the differences in these mediational variables may be due to the words participants learned to use to describe the cognitive restructuring and cognitive defusion practices, rather than substantive differences in the practices themselves.

A similar pattern was observed in a study again examining the impact of CT and ACT, this time on food cravings, which were hypothesized to be critical to the maintenance of weight

loss (Forman et al., 2007a). The study provided ninety-eight undergraduate students with transparent boxes of chocolate Hershey's Kisses, and instructed the participants to hold onto, but not eat, the box of chocolates for 48 hours. Participants were also randomized to receive either (a) no intervention, (b) instruction in "control-based coping strategies" such as distraction and cognitive restructuring or (c) instruction in "acceptance-based strategies" such as experiential acceptance and defusion techniques. It is worth noting that these descriptions demonstrate that, similar to Deacon et al. (2011), the authors of this study carried out the study under the assumption that these techniques provided qualitatively different intervention strategies.

In spite of this issue of semantics, the study was able to identify differences in the ways that participants responded to the two treatment strategies. It was found that the effectiveness of the intervention correlated with baseline psychological sensitivity to the food environment, as measured by the Power of Food Scale (PFS). Specifically, acceptance-based strategies were more effective for those participants who reported higher susceptibility to the presence of food, but less effective among those who scored lower on the PFS.

These findings highlight a crucial aspect of this research question, which is that it is likely that these two interventions both share common mechanisms, and also have clinical differences in the ways that they are implemented. The core goal of this study is therefore to isolate the phenomenological processes (both shared and unique) that occur when individuals successfully implement cognitive restructuring and cognitive defusion and identify contextual variables that influence these processes within each intervention. Clinical implications for these findings are identified and discussed.

This position also presents a reflection of the aforementioned focus of redirecting attention away from comparing entire treatment packages, and instead isolating the nature of the

mechanisms of change. Such an approach offers a greater understanding of both mental illness and the interventions we use to treat it, thereby allowing us to craft more effective treatments. This position also holds greater clinical utility, as it offers insight into when each intervention can most effectively be utilized. Such was the focus of this dissertation, which looked to elucidate the nature of these two psychotherapeutic interventions, thereby providing insight into the scenarios in which each can most effectively be utilized, as well as ways that each might be improved.

The systematic case study design is particularly well suited for examining this question of treatment mechanisms. Qualitative analyses of cases involving both cognitive restructuring and cognitive defusion allowed us to more closely examine these interventions, providing a more microscopic lens than that of traditional RCTs, including information on how the client and therapist experience an intervention and its effects from a phenomenological point of view. This dissertation only made use of qualitative data, and will therefore be speculative in nature, as avoiding the limitations of RCTs described above also caused us to lose the ability to have statistical confidence in the validity of our statements. However, our findings provide a foundation upon which to quantitatively examine the nature of these techniques, and the clinical scenarios in which they can be most effectively utilized.

Before we can compare the mechanisms of change of cognitive restructuring and cognitive defusion, we must first find a common language with which to compare these two interventions. Otherwise, we will fall into the same trap detailed above, describing differences that reflect variations in psychological theory and terminology, rather than phenomenological processes. We must therefore delve deeper into these psychological theories, in order to isolate

the phenomenological processes that are being obfuscated by their respective psychological theories.

The Influence of Theoretical Lenses on Proposed Mediators of Change: Cognitive Theory and Relational Frame Theory

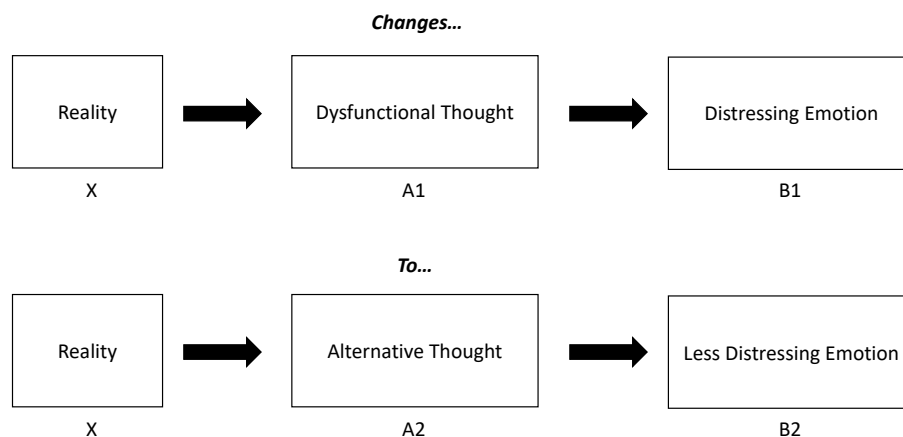
Cognitive restructuring is based upon Beck's Cognitive Theory, which posits that psychopathology is the result of maladaptive beliefs that lead to painful emotions and ineffective behaviors (Beck, 2011). Cognitive restructuring seeks to ameliorate the influence of the thoughts that emerge from these maladaptive beliefs by arguing against their validity, the assumption being that "when dysfunctional thoughts are subjected to objective reflection, one's emotions, behavior, and physiological reaction generally change." (Beck, 2011, p. 32) Cognitive restructuring includes a number of strategies that one could use to challenge these dysfunctional thoughts, including examining their validity, exploring the possibility of other interpretations, and decatastrophizing the problematic situation. However, what all have in common is that they focus on the cognitive interpretation of the external events. Put another way, "*The situation itself does not directly determine how they feel or what they do; their emotional response is mediated by their perception of the situation.*" (Beck, 2011, p. 31) Cognitive restructuring therefore places the focus on the content of the thought, and the way that it is making claims that are irrational, or at least unhelpful.

In contrast, cognitive defusion comes out of a foundation of relational frame theory (RFT) (Hayes, Strosahl, & Wilson, 2012). RFT does not present a governing theory of psychopathology in the same way as cognitive theory. However, it does suggest that in order to understand thought, we ought to focus not on the discrete units of human experience (e.g., "Thought A leads to Emotion B"), but instead on the "relational frames" that govern the

relationship between these discrete units (Hayes et al., 2013). As such, cognitive defusion conceptualizes the source of the distress not as the maladaptive and potentially unrealistic propositions being reflected within the thought (e.g. “I am worthless”), but instead on the “fusing” of the thought and the reality that it seems to reflect (e.g. that the thought “I am worthless” is accompanied by experiencing oneself as worthless). Cognitive defusion therefore suggests that individuals ought to view thoughts as mental phenomena rather than logical propositions to be argued for or against (e.g. “This thought that I am worthless is just a thought. It doesn’t mean anything about me”). Put another way, cognitive defusion encourages the individual to perceive a “bad thought as a thought, no more, no less.” (Hayes, Strosahl, & Wilson, 2012, p. 20)

The proposed differences between these two techniques is therefore that cognitive restructuring asks the individual to engage with the content of the thought (i.e. see that the thought is not accurately reflecting reality), while cognitive defusion has the individual instead engage with the relational frame that connects the thought to reality (i.e. see that the thought is unrelated to reality). This difference is presented visually in Figure 1.

COGNITIVE RESTRUCTURING:



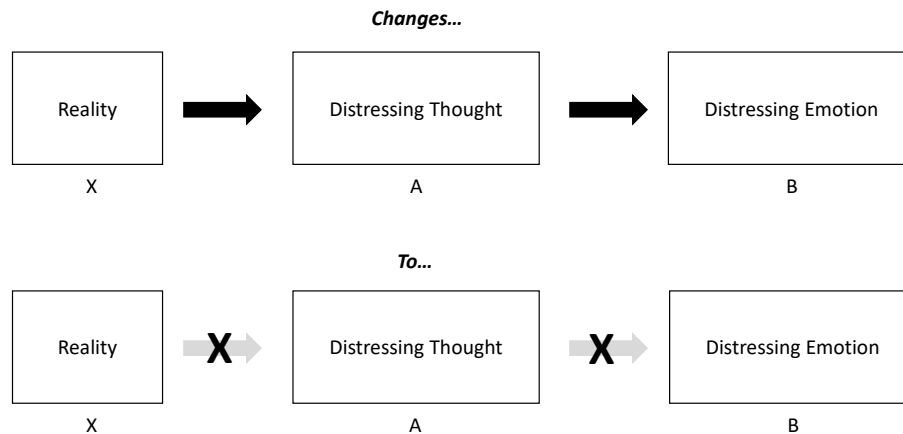
COGNITIVE DEFUSION:

Figure 1. Proposed mediators of change in cognitive restructuring and cognitive defusion.

This figure demonstrates that, in both cognitive restructuring and cognitive defusion, the clinician is trying to prevent a thought (A) that emerges from reality (X) from leading to an aversive emotion (B). In cognitive restructuring, A1 is being changed so that instead of leading to an aversive emotion (B1), it leads to a less distressing thought (A2) and accompanying emotion (B2) (e.g. “I’m not a failure, everyone makes mistakes (A2), leads to improved mood (B2)”). In cognitive defusion, it is proposed that the connection between the thought and reality (A and X), or “relational frame,” is being removed, thereby preventing A from leading to B (e.g. “The thought that I am worthless (A) is just a thought. It does not correlate to an external reality (i.e. does not have to lead to suffering (B)).

As detailed above, cognitive restructuring’s proposed focus on the content of the thought rather than the relational frame that connects it to reality is what Hayes, Strosahl, and Wilson (2012) suggest differentiates it from cognitive defusion, and makes it potentially less effective in certain scenarios. The question presented to this dissertation was therefore twofold, namely, (1)

do cognitive restructuring and cognitive defusion function through different psychological pathways, and (2) does this lead to different psychological impacts?

This difficulty in clarifying the differences between two variables is the challenge of all scientific endeavors, and as such it can be addressed using the scientific method. Specifically, by applying Beck's cognitive theory and relational frame theory to both cognitive restructuring and cognitive defusion, this dissertation controlled for the confounding influence of psychological theory. The similarities and differences that emerged between these techniques were then used to develop a unifying theory of the phenomenological similarities and differences between cognitive restructuring and cognitive defusion.

III. Methods

This dissertation involved a systematic case write-up of three clients, each of whom was seen in therapy over a period ranging from six months to 12 months. The clients all signed a standard informed consent form before therapy began, allowing for videotaping of the case and sharing with other members of the treatment clinic. The clients also signed the additional, IRB-approved "Consent Form to Participate in a Clinical Research Study," which is attached in Appendix A. The format of the case studies followed the "pragmatic case study" method developed by Fishman (2005), and illustrated by case studies published in the journal, *Pragmatic Case Studies in Psychotherapy*.

This study analyzed exclusively qualitative data, which was obtained from semi-structured clinical interviews, session notes, and video tape recordings of sessions. Qualitative analyses focused on the decisions I made, including the reasons for selecting a particular intervention (i.e. cognitive restructuring or cognitive defusion), as well as the clinical impact of

this particular intervention. Particular focus was given to clarifying whether this decision was made for clinical reasons (i.e., one intervention would be more likely to be successful than another), or semantic reasons (i.e., the intervention would be more likely to resonate with the framing of previous clinical work).

It is worth noting that all of the client's described in this study were treated using principle- rather than protocol-based approaches. This decision was made due to the structure of the outpatient clinic, which was not restricted by session limits, and therefore allowed the flexibility of implementing idiographic cognitive-behavioral interventions. This approach presented a potential limitation, as one could argue that the techniques that were practiced were not bonafide cognitive restructuring or cognitive defusion.

However, the intention of this dissertation was to examine the mediators of change for these interventions, not their efficacy or effectiveness. What was important was therefore that my interventions made use of the same mediators as the cognitive restructuring and cognitive defusion techniques described within the protocols, rather than the exact same wording or structure. A principle-based approach also required me to provide justification for why I was selecting a specific intervention at a particular point in treatment. As such, this approach offered additional insight into potential mediators of these techniques. Finally, a principle-based approach made it possible for me to incorporate multiple interventions into one treatment plan, thereby allowing their similarities and differences to be compared, with client variables held constant.

Each of the three clients was selected because they met this criteria of receiving treatments that included both cognitive restructuring and cognitive defusion interventions. Additionally, initial reviews of the treatment plans for each client offered insight into different

hypotheses regarding whether the differences between cognitive defusion and cognitive restructuring were substantive or merely semantic. Specifically, the case of Sam suggested that there were clinical scenarios for which cognitive defusion was indicated and cognitive restructuring was contraindicated; the case of Sarah lent support for the argument that the two interventions were interchangeable; and the case of Jack suggested that cognitive restructuring and cognitive defusion were interchangeable in some clinical scenarios and led to clinically significant differences in others. The insights offered by each of these three clients are examined in Section V, “Transcription Analyses,” and synthesized in Section VI, “Discussion.”

IV. Overview of Clients

Client 1: “Sam”

Identifying information.

Sam was a 27 old Caucasian male, presenting to treatment with symptoms of obsessive-compulsive disorder (OCD). At the time of treatment, Sam was enrolled in law school, and was in the process of studying for the bar exam. He was also employed at a summer position at a local law firm, where he worked five days a week. In spite of his busy schedule, Sam presented as highly motivated for treatment, where he hoped to continue to engage in exposure-based therapy, which had helped to reduce his symptoms of OCD in the past.

Presenting problem.

Sam reported sexually-based obsessions as the primary difficulty that had caused him to seek treatment. These obsessions appeared to be elicited by a number of different environmental factors, the most salient of which was the presence of ethnic minority infants. His anxiety tended to take the form of worries that he had done something sexually inappropriate to an infant, which

included both direct sexual acts and indirect contamination (e.g. that he had unintentionally transmitted harmful materials to an infant). This anxiety was also accompanied by heart palpitations, sweating, nausea, and fear that he may lose control over his actions.

It is worth noting that while these symptoms could also be explained as symptoms of a panic attack, they were better explained by obsessive compulsive disorder, as the anxiety was shown to be caused by cognitions related to having performed inappropriate acts, rather than catastrophic misinterpretation of bodily sensations (Austin & Richards, 2001; Clark, 1986). Sam estimated that these periods of anxiety occurred approximately twenty to thirty times a month. These symptoms had caused him to avoid situations in which he believed he might come in contact with an infant or a member of an ethnic minority population.

Sam also endorsed using music to distract himself from his obsessive thoughts, as well as forcing himself to “cut” the thought process, during which he would identify the thought as “just-an-OCD-thought,” and stop engaging with the compulsive rumination that often followed. This technique was therefore functionally identical to cognitive defusion. Although Sam had some success using these techniques in moments of distress, he stated that “in the moment,” the anxious thought occupied “100%” of his mental resources. This anxiety caused him a significant amount of distress and had a detrimental impact on his social and professional life (e.g. he avoided certain social and work environments, and often experienced anxiety during interactions with his peers).

History of presenting problem and treatment.

Obsessive-compulsive disorder.

Sam’s symptoms of OCD have changed over the years. Symptoms appeared to have first caused Sam distress when he was ten years old and would “throw tantrums” when asked to go

places that he did not want to go (e.g., to the mall, where he anticipated a higher likelihood of being exposed to an ethnic minority infant). Sam stated that this distress was caused by “mostly contamination, but it’s hard to put a finger on.”

Sam’s symptoms of anxiety became exacerbated between ages 12 and 15, shortly after his father died of an unexpected heart attack. Sam was present when this occurred, and subsequently received supportive psychotherapy targeting the symptoms of depression and anxiety that accompanied this loss (e.g., decreased mood, increased anxiety related to contamination fears). He stated that he did not find this treatment to be particularly useful, and that he harbored resentment towards his previous clinicians, whom he felt had been ineffective in their efforts to ameliorate his symptoms of anxiety. Although Sam described being present when his father died as “traumatic,” he stated that he did not currently meet any symptoms of posttraumatic stress disorder and did not have any memory of experiencing them in the past.

Sam’s contamination fears changed form when he was between the ages of 14 and 15, during which they became particularly focused on fears of sexual contamination. Specifically, Sam began to experience anxiety that he had performed an act that would be considered sexually inappropriate, such as molesting an infant or contaminating them by transferring sperm through bodily contact. This would result in a number of compulsive checking behaviors, such as asking others to verify that he had not done anything inappropriate.

This anxiety continued into high-school, when Sam avoided consuming all forms of alcohol, due to his anxiety that he may do something sexually inappropriate. Sam’s symptoms continued to change form towards the end of his time in college, during which he lived in a low-income neighborhood that caused constant and significant feelings of fear, due to it being populated primarily by ethnic minorities, including a number of children. These fears became

significantly exacerbated following a day when he was masturbating in his room and noticed a group of young ethnic minority children playing outside of his window, which caused Sam to become very anxious that they had caused him to become aroused. This anxiety caused a significant amount of distress for approximately one week, during which he seldom left his room, and would remain on the phone while leaving the house, so that the person on the other end of the line (usually his girlfriend) could reassure him that he had not done anything sexually inappropriate with a minor. Although he no longer engages in this particular compulsion, he continues to experience significant distress in situations where ethnic minority infants are present.

At the time of treatment, Sam continued to avoid sexual activity, engaging in masturbation or sexual intercourse only when he deemed it “necessary” (i.e., when he fears that he may soon have a nocturnal emission). Sam also had an anxiety-reducing behavior that he engaged in after masturbation or sex, which lasted approximately fifteen minutes and included washing his body and the area in which he had ejaculated. Although this anxiety appeared to be related to his obsessions regarding performing a sexually inappropriate act on an infant (e.g., he found it much more distressing to be around an infant on a day during which he had masturbated, and therefore may be contaminated), Sam stated that he was “not bothered” by these symptoms, and that they “never” interfered with his life.

Sam had previous experience with exposure and response prevention (ExRP), having engaged in multiple imaginal exposures with a previous provider. Sam gained some remission from his symptoms through these treatments and continued to utilize techniques that he learned in previous CBT treatments. For instance, Sam described “cutting” his thought processes (more details will be provided in Section V, “Transcription Analyses”) when he noticed them becoming

ruminative (i.e., when he began engaging in cognitive compulsions), thereby demonstrating the response-prevention techniques he practiced during his previous treatments.

Sam also attempted to reduce his symptoms of anxiety by avoiding situations in which they might become activated. For instance, Sam seldom attended crowded areas or neighborhoods that he knew to be populated primarily by ethnic minority populations. If he found himself confronted with distressing stimuli in spite of these efforts, he would often try to physically remove himself from the situation, such as by sitting in a chair that was farther away from a group of children. He also occasionally made use of distraction techniques, such as by listening to music when he noticed himself engaging with obsessive thoughts.

In the past, Sam had made use of safety objects, such as a container of hand sanitizer that he used to carry around with him and would use to clean areas that he was worried may be contaminated. However, he had run out of sanitizer at the time of the intake assessment and stated that he did not feel the need to purchase another bottle. Sam had also previously engaged in a compulsive anxiety-avoidance behavior, in the form of counting “5, 10, 5” after experiencing an obsessive thought. However, Sam no longer used this compulsive behavior at the time of treatment.

These symptoms of anxiety had a dramatic impact on Sam’s life over the years. Most notably, they had impacted his interpersonal relationships “tremendously,” preventing him from attending social events or pursuing lasting relationships. Sam stated that it had also influenced his professional life, as he was much less likely to pursue a position in a workplace where children may be present.

Social phobia (rule-out).

Sam also endorsed symptoms of social anxiety, stating that he often felt fearful and nervous when in social situations where he may be observed or evaluated by others. When in these situations, Sam stated that “(I) think about every word I say.” He identified his concern as looking strange to other people and said that he often experienced sweating and trembling or shaking when in these situations. The situations he identified as the most anxiety-provoking were parties, public restrooms, talking to people in positions of authority, and initiating a conversation, which he stated he would “never do.” Party-related concerns were caused by the aforementioned anxiety of losing control or being placed in a situation where he may unknowingly consume alcohol or drugs. In contrast, his fear of public restrooms was more heavily influenced by his fear of contamination than by interpersonal interactions. These anxieties also appeared to have become exacerbated after the client’s current girlfriend suggested that others sometimes find him “abrasive.”

At the time of treatment, Sam had two friends in his law school, although one dropped their class together and therefore no longer saw Sam on a regular basis. Sam stated that his social anxiety was not causing him a significant amount of distress, as he did not feel a desire to have many friends. He also stated that his social anxiety had “not really” influenced his professional aspirations or successes.

General anxiety disorder (rule out).

Sam was also screened for symptoms of generalized anxiety disorder. Sam endorsed a number of sources of anxiety, including finishing his schoolwork (ranked a 10/10), worrying about the health of his family (6/10) and his mother (8/10), and concerns related to his finances (10/10). Sam also stated that he spent the “majority” of his day feeling worried. These worries

have also been accompanied by feelings of restlessness (8/10), fatigue (8/10), irritability (10/10), and difficulty falling asleep (10/10). Sam stated that this keeps him from participating in social events, and that “he is worried throughout the day.” However, further review of these worries revealed that they were relatively normative for his current vocational role (a student in law school), and that they did not appear to be causing clinically significant distress.

Social and family history.

At the time of treatment, Sam had been involved in a six-year relationship with his girlfriend. He had also lived in his girlfriend’s parent’s home for the past three years. As mentioned above, Sam stated that he had few friends, and regularly interacted with only two people in his law school program, one of whom recently dropped out of their shared class. However, Sam also stated that he felt little desire to make more friends, as he seldom found social interactions to be comforting or rewarding. This general discomfort with interpersonal relationships had been present throughout Sam’s life, as evidenced by the fact that he neither maintained nor sought out many friendships throughout elementary school, middle school, and high school.

Sam’s father died of an unexpected heart attack when Sam was a teenager. Sam stated that his symptoms of OCD (which, at the time, were primarily focused on contamination) worsened after his father passed away. This event also influenced his tendency to worry about his mother’s health, a concern that he rated as an 8 out of 10 in excessiveness. While Sam described having a stable relationship with his mother, he also detailed how she could be critical of his anxiety and mental health problems, stating that “a man wouldn’t worry about such things.” These statements appeared to have influenced his self-perception, as he occasionally expressed guilt and shame for being unable to control his anxiety.

Family psychiatric history.

Although no members of Sam's family had been formally diagnosed with any mental health difficulties, he did state that both his father and mother struggled with anxiety. He described both his father and mother as being "obsessive," and specifically as being very concerned with order and cleanliness. Sam said that he was unaware of the mental health history of his extended family.

Trauma history.

Although Sam did not endorse any current symptoms of trauma, he did state that he was present when his father passed away due to an unexpected heart attack, which occurred while they were both in the kitchen, Sam recalled experiencing a great deal of shock and fear, as he and the rest of his family had been under the impression that his father was in good health.

Medical history.

Sam did not endorse any medical problems or concerns, for either himself or his significant others. Throughout treatment he was prescribed Prozac, which he described as helping a "tremendous amount." Specifically, Sam stated that since taking the medication, he found himself ruminating less and experiencing a significant decrease in his anxiety.

Current medications.

Prozac, 40mg

Biopsychosocial formulation.

Sam's symptoms of OCD were most likely influenced by a biological predisposition for anxiety, as perhaps reflected in his mother and father's difficulties with anxiety. This predisposition appeared to have been influenced by environmental factors, such as his girlfriend's comments that he can come off as "abrasive," and the ethnic minority children he

lived around and saw while masturbating. Sam had been able to manage the anxiety that was once elicited by perceived “contamination” by tolerating his anxiety and preventing himself from engaging in safety behaviors. However, he had been responding to his sexually-based fears with behavioral avoidance, providing negative reinforcement that relieved his symptoms, but maintained the underlying anxiety.

DSM-V diagnosis.

Sam meets the diagnostic criteria for Obsessive Compulsive Disorder (300.3).

Treatment plan.

Given Sam’s primary diagnosis of OCD, I decided to implement an exposure and response prevention (ExRP) intervention, because of its strong empirical support as a treatment for OCD (Barlow, 2014; Foa, Yadin, & Lichner, 2012). I decided to follow a principle-based rather than protocol-based ExRP approach, due to the additional latitude it would grant Sam and I in responding to unanticipated barriers or obstacles to treatment. This decision was made possible by the structure of the clinic, which had a policy of allowing treatment to continue for an indefinite period of time, provided the clinician could provide a rationale for why continued treatment was clinically indicated. Sam and I therefore worked together to design an exposure hierarchy, and schedule weekly homework assignments composed of (initially) in-vivo exposures and (later) imaginal exposures.

Cognitive defusion was incorporated into the treatment as a way of targeting Sam’s compulsions, which were primarily cognitive in nature (e.g. ruminating on various reasons that he could not have performed the feared behaviors). This technique was presented as an effective way of responding to his anxiety-provoking thoughts during those times when he was unable to engage fully in an exposure exercise. Additionally, Sam was discouraged from engaging in

cognitive restructuring as a way of reducing his anxiety, as this would effectively be a cognitive compulsion that would exacerbate his anxiety over time. Distinctions between these three ways of responding to his anxiety-provoking thoughts (exposure, cognitive defusion, and cognitive restructuring, i.e. “engaging,” “cutting,” and “challenging”) are explored in greater detail in Section V, “Transcription Analyses.”

As such, I did not follow protocol-based cognitive defusion, but instead incorporated cognitive defusion techniques into treatment. Nonetheless, this decision was based upon literature suggesting that ACT was effective in addressing obsessive rumination within OCD (Towhig et al., 2010), and was endorsed as an effective idiographic interview by multiple licensed clinical psychologists with whom I consulted.

Course of treatment.

As one might expect given his self-referral and history of success with ExRP, Sam presented to treatment with a great deal of motivation. He was aware of the rationale and structure of ExRP and had an idea of what his initial exposure hierarchy might look like. While these previous experiences provided him with insight and motivation, they also presented barriers to treatment. Specifically, Sam stated at the beginning of treatment that he was unwilling to engage in imaginal exposures, something which had caused him a great deal of distress during his time with his previous provider. I initially suggested that imaginal exposures be placed near the top of his hierarchy, rather than removed from treatment entirely. However, this suggestion was withdrawn after Sam stated that he was unwilling to begin treatment if imaginal exposure was included in the hierarchy.

I decided it was most effective to introduce the topic later in treatment, after Sam had engaged in a number of successful exposures. This approach proved successful, as Sam would

later agree to engage in imaginal exposures.

The early stages of treatment therefore saw Sam engaging primarily in in-vivo exposures, going to locations that he had identified as “unsafe.” These included crowded stores such as CVS and Walmart, in specific locations where he knew children (and in particular, ethnic minority children) were likely to be present. Upon entering these locations, Sam was encouraged to observe his anxiety, as well as his urges to engage in avoidance and cognitive compulsions (including cognitive restructuring). Given that Sam's obsessions and compulsions were both primarily cognitive in nature, a particular focus was placed on how Sam responded to his anxiety-provoking thoughts.

It became apparent early in treatment that Sam needed specific instruction on not only what situations to enter, but also how specifically to respond to the cognitive compulsions that were providing short term-relief, but ultimately exacerbating his symptoms (Foa, Yadin, & Lichner, 2012). Subtle differences in the way Sam responded to these thoughts could lead to either an increase or a decrease in his ability to tolerate his symptoms of OCD. Upon reviewing the available literature and consulting with my supervisors, I concluded that the best approach was to highlight the function of different ways of responding to his anxiety-provoking thoughts, isolating ones that would be helpful and unhelpful. In developing this intervention, I relied upon the overarching theory that thoughts or behaviors that allowed Sam to avoid the distress that accompanies uncertainty would ultimately exacerbate Sam's symptoms, while those that prevented him from avoiding this distress would increase his ability to tolerate it and make it less likely to be elicited in the future (Barlow, 2014; Foa, Yadin, & Lichner, 2012; Rego, 2016).

This led me to create a written set of instructions, detailing three potential ways of responding to cognitive compulsions, and the extent to which they were likely to be therapeutic

or detrimental. Specifically, these included (1) “This could be true, and I need to stay with the anxiety that accompanies this uncertainty, which I can tolerate” (i.e. “Engaging” or Exposure; Very helpful); (2) “This could be true, and I can tolerate the uncertainty of it being so, but I’m going to redirect my attention elsewhere because I have other things I need to do,” (“Cutting” or Cognitive Defusion; Somewhat helpful) and; (3) “This is unlikely to be true, because....” (“Challenging” or Cognitive Restructuring; Detrimental)

This sheet acted as the framework for the following months of therapy, during which Sam continued to work his way through an escalating series of exposures, eventually habituating himself to the aforementioned contexts of stores and neighborhoods that were deemed “unsafe,” and escalating to the imaginal exposures that he had originally stated he would not perform. The exposure hierarchy was revisited multiple times during the therapy, in order to adjust for improvements in Sam’s ability to navigate and tolerate anxiety-provoking situations, as well as incorporate changes in life circumstances (e.g., adding driving through an “unsafe” neighborhood with the windows down, once a change in job led to a different commute). This time also saw Sam’s obsessions and compulsions taking different forms, such as a concern that he had run over someone while driving through said neighborhood. Exposures were selected to address these changes in symptomatology. However, the aforementioned guide detailing three different ways of responding to anxiety-provoking thoughts was implemented throughout the treatment.

Treatment outcome.

Sam was seen for a total of 35 sessions over 10 months. By the end of the treatment, Sam had reduced his use of cognitive and behavioral compulsions (e.g. a clinically significant reduction in the amount of time spent ruminating on reasons a feared outcome had not occurred,

and cleaning his body following a feared event), and was able to tolerate being in situations that he had previously avoided (e.g. various stores, workplaces, and homes in “unsafe” neighborhoods). However, Sam continued to experience significant distress in a number of areas of daily living, such as when considering being intimate with his long-term partner or experiencing nocturnal emissions, distress that negatively impacted his ability to engage fully with his work. As such, Sam was referred for continued ExRP treatment with another student clinician within the outpatient clinic.

Client 2: “Sarah”

Identifying information.

Sarah was a 17-year-old Caucasian female, with a diagnosis of cerebral palsy. Although Sarah was able to walk unassisted, she was physically handicapped in that she had difficulty walking, and often could not climb stairs if the weather was cold, due to her joints becoming tense. Although Sarah’s cognitive capabilities were not influenced by her cerebral palsy, she did have a strengthened moro reflex, meaning that she had a heightened startle response in response to loud noises. At the time of intake, she was enrolled in her junior year of high school, where she was very engaged with charity organizations related to children with developmental disabilities, and specifically cerebral palsy. At the beginning of treatment, she lived at home with her mother, father, and younger sister.

Presenting problem.

Sarah presented to treatment with symptoms of anxiety and emotion dysregulation, particularly when presented with unpredictable loud noises (e.g. fire alarms and storms) or bright visual stimuli (e.g. lightning). She also stated that she had felt “like a burden” for her entire life and was disappointed in herself for not fitting “a perfect mold.” Sarah also struggled with

symptoms of depression, with her most recent episode lasting for several weeks. Her low moods seem to be influenced by her tendency to criticize herself when she believed she had not fit the “perfect mold.” This belief appeared to primarily be connected to her physical limitations, which had caused her family significant financial difficulties, as a result of surgeries targeted at reducing her physical limitations. These physical limitations were also the target of bullying by her peers, including individuals who she had initially believed to be her friends.

History of presenting problem and treatment.

Sarah stated that she had always felt like a burden to her family, because of the increased physical demands of her cerebral palsy, as well as a perceived pressure to “do well.” She believed that this pressure was instilled in her by her father, who often emphasized the importance of getting good grades. Although, at the time of the intake, her father had stopped placing as great an emphasis on this topic, she still believed that this pressure had contributed to her tendency of criticizing herself, including for her difficulty regulating her emotions. Sarah therefore expected herself to be able to control her emotional reactions to aversive stimuli and became self-critical when she was unable to do so. These self-critical thoughts then fed back into her negative mood state, increasing the severity and length of her depressive episode.

Sarah received the assistance of aides throughout much of her time in school. These aides would accompany her throughout the school day and take her outside or to the guidance office in the case of a fire alarm, or any other event that might cause her a significant amount of anxiety (e.g. a storm). The aides also attempted to prevent Sarah from having what she described as a panic attack, which occurred only if she was made aware of an impending loud noise (e.g. fire alarm). Sarah had also never been able to sleep during storms, an issue which she addressed by listening to music or wearing earmuffs. Sarah reported that her father believed that

his tendency to provided reassurance and emotional support in the past may have prevented her from developing an ability to control her emotions without being soothed by others.

It is worth noting that Sarah flooded her home four years ago, after using a toilet that she was unaware was broken. This led to the reconstruction of her house, which was interrupted after her family was fined for using unauthorized workers. These events placed a significant financial burden on Sarah's family, and resulted in Sarah having to move into the basement. Although it is unclear how much this incident impacted Sarah, she stated that she experienced a great deal of shame and self-criticism following these events.

Sarah previously received psychotherapy from another student clinician within the same outpatient clinic. This treatment lasted approximately two years, and focused on teaching emotion regulation and acceptance skills, as taught within an ACT framework. Sarah stated that she found these techniques helpful, and that they helped her to accept her depression and anxiety without self-criticism. However, this treatment ended in the spring, and by the end of the summer Sarah noticed herself again becoming frustrated and intolerable of her emotional reactions. She therefore resumed treatment at the ADC, in order to receive treatment for her continued emotion dysregulation and panic attacks.

Social and family history.

At the time of the intake, Sarah lived at home with her mother, father, and younger sister (age 13). Her mother worked as a doctor and suffered from multiple sclerosis (her illness would cause her to leave her job approximately halfway through treatment), and her father was involved in Sarah's charity efforts (i.e. those targeting causes related to cerebral palsy). Her father also worked as a musician, occasionally touring across the country with his band. Sarah did not seem to be particularly close with her sister, describing her as being interested primarily

in dancing and texting with her friends, and stating that she therefore feels that they have little in common. Sarah reported that her relationship with her mother is not much closer than her relationship with her sister. She said that her mother used to feel responsible for her cerebral palsy but described this as an inference she had made based on her mother's behavior, rather than a belief that had been explicitly endorsed by her mother. It is worth noting that Sarah's mother lost her first child, who died at 6 weeks of age, and her second child at birth.

Sarah had few friends and spent most of her time alone. Early in treatment, she started a relationship with a boy with a developmental disability, whom she met through her charity work at school. Sarah stated that she had more friends when she was younger, but that many of these ended up cutting off contact with her. Sarah stated that these former friends stopped talking to her because of her physical disability, an experience that she described as being highly distressing, and said that she still harbors resentment towards her former friends. Sarah also described being friends with another girl, who also used to jump out and scare her, activating her heightened startle response. Sarah cut off ties with this individual after being scared by her repeatedly, and stated that, in hindsight, she wished she had not ended their friendship. Sarah's father had stated at the beginning of treatment that he believed she would benefit from increasing her social network. However, Sarah did not identify with this treatment goal when it was brought up during a subsequent session.

Family psychiatric history.

Sarah reported no history of psychiatric illness within her family.

Substance use history.

Sarah endorsed no history of substance use.

Trauma history.

Sarah reported receiving a traumatic brain injury during her birth, the day after which she experienced a brain hemorrhage, resulting in cerebral palsy. This condition had caused significant distress in the client, most notably in the form of her moro reflex persisting beyond the normative four months of age (Ropper, 2005), which caused her to have a heightened startle response to auditory and visual stimuli.

Medical history.

Sarah was delivered after her mother's water broke at 26 weeks. She was diagnosed with cerebral palsy the day after her birth, when she had a brain hemorrhage. The side effects of her cerebral palsy were primarily physical in nature, impacting her movement and mobility. It is also possible that her brain hemorrhage impacted her emotional lability, but this could be neither confirmed nor denied without additional neurological data.

Current medications.

Sarah was not taking any medications at the time of treatment.

Biopsychosocial formulation.

Sarah was born with a form of cerebral palsy that impacted her physically, influencing her gait and causing it to be particularly difficult for her to navigate her environment. Her cerebral palsy did not influence her cognitively but did present her with challenges in relating to non-handicapped peers. Additionally, Sarah was raised in a family that placed high demands on her academic performance and expected her to be able to independently manage her negative emotions. These environmental factors may have led Sarah to become acutely aware of her limitations, and the way in which they had prevented her from living up to her own expectations. This pattern of high expectations seemed to have contributed to Sarah's symptoms of anxiety

and depression. When confronted with an opportunity to “do well” (e.g. not panic in the face of a fire alarm), Sarah experienced anxiety, anticipating failure, and experiencing depression when this expectation was realized.

DSM-IV-TR diagnosis.

Sarah met criteria for Persistent Depressive Disorder (300.4) and Specific Phobia (300.29). Rule-out Panic Disorder (300.01). Although Sarah’s symptoms of emotion dysregulation were accurately characterized as panic attacks, they predictably follow instances such as storms and fire alarms. Her symptoms were therefore better explained as reflective of specific phobia, rather than panic disorder.

Treatment plan.

Sarah’s panic attacks were the primary cause of her distress, and her stated reason for seeking treatment. Exposure and response prevention (ExRP) was therefore selected as the most effective intervention, given the evidence supporting its application in the treatment of panic attacks (Barlow & Craske, 2006). Treatment began by providing Sarah with psychoeducation on the nature of anxiety, and the way that avoidance increases its severity and prevents habituation. Sarah and the therapist then worked together to develop and begin implementing an exposure hierarchy. Most of these exposures involved the use of a device that was purchased by Sarah and could create an extraordinarily loud alarm (up to 120 decibels). Sarah or the clinician would set the alarm for a random period of time, and Sarah would monitor and tolerate the anxiety that accompanied her anticipation of the loud noise, and the moro reflex that would follow.

Cognitive restructuring and cognitive defusion interventions were also incorporated into treatment to target the negative self-judgments that exacerbated Sarah’s distress (e.g. telling herself that she “shouldn’t be getting so upset,” which in turn would increase her distress,

leading to a pattern of increasing emotion dysregulation). The treatment therefore had two primary modes of intervention, being ExRP to promote habituation of the anxiety response, and cognitive interventions (i.e. cognitive restructuring and cognitive defusion) to target the negative self-evaluations that contributed to this increasing distress.

Course of treatment.

Given Sarah's primary presenting problem of panic attacks, the initial treatment plan focused on providing an Exposure and Response Prevention (ExRP) intervention. Sarah had never received ExRP prior to this treatment and expressed reservations about engaging in such a treatment. This began by creating an exposure hierarchy, in which we identified a set of scenarios that Sarah would work her way through, allowing a process of habituation to occur. A loud alarm was bought for just this purpose, and initial exposures included having the client spend 10 minutes sitting with the alarm, having it go off on the "medium" setting. Sarah was asked to not watch the clock, in order to recreate the unpredictability that often led to anticipatory anxiety and panic attacks.

It became apparent early in treatment that this conceptualization was missing a significant component, namely the role of emotion invalidation. Specifically, the client would often become anxious during the exposures, and would become very frustrated with herself for being unable to remain emotionally regulated. This would often manifest in the form of self-critical thoughts, which would subsequently cause the client to become increasingly agitated and self-critical, ultimately feeding back into the cycle by creating additional emotion dysregulation and self-criticism. Treatment therefore incorporated self-validation and acceptance of her emotions, which served the purpose of reducing the secondary emotions that followed the primary emotion of anxiety, which was already being addressed by the ExRP.

The second half of treatment therefore focused on continuing to work her way through her exposure hierarchy, while also addressing the secondary emotion of shame that followed her difficulty regulating her emotions. These efforts to address the role of self-criticism were also the primary area within which cognitive restructuring and cognitive defusion were utilized, in an effort to combat the self-critical thoughts that would feed her cycle of emotion dysregulation.

This phase also saw the clinician and client identifying the role of Sarah's family in invalidating her emotional experience, by criticizing her inability to calm down or suggesting that whatever was causing her distress "wasn't a big deal." The clinician and client therefore worked on identifying ways that the client could incorporate interpersonal effectiveness skills into her work, communicating her experience to her parents. This ultimately culminated in all of Sarah's immediate family (i.e. her father, mother, and sister) attending her second to last session, during which Sarah and the clinician detailed their conceptualization of her difficulties and accompanying treatment plan and identified ways that Sarah's family might be able to assist in these efforts.

Treatment outcome.

Sarah was seen for a total of 26 sessions over 7 months. She demonstrated significant gains through psychotherapy, as evidenced by a reduction in the frequency and severity of her panic attacks, an increase in scenarios which she was able to tolerate, and an increase in emotional self-validation. By the end of treatment, Sarah was able to tolerate exposures of increased intensity (i.e. random loud noise generator at a higher setting, for a longer period of time), with decreased subjective units of distress (SUD). This habituation extended to Sarah's daily living activities, as she reported a decrease in the frequency and intensity of her panic attacks and symptoms of anxiety in the lead up to storms and fire drills.

Additionally, by distancing herself from her self-critical thoughts regarding her emotions, she had effectively increased her emotional self-validation. In other words, Sarah was able to experience anxiety in anticipation of a loud noise, without making additional cognitive judgments, such as, “you are being overly emotional.” She therefore became practiced at both cognitive restructuring and cognitive defusion techniques. These improvements extended to her symptoms of depression, which were often preceded by negative assessments regarding her efforts or abilities. Additionally, the family session that occurred before the final session suggested that there might be the potential for this decrease in negative evaluations to extend to her family, who were receptive to the conceptualization detailed by Sarah and the clinician (i.e. that her depression and symptoms of anxiety were exacerbated by negative self-judgments), as well as ways that they might be able to assist in this process (i.e. by encouraging effective, nonavoidant behavior without criticizing her initial emotional reaction). This session also saw the family offering their own perspective on her improvements, which they considered to be significant, and most evident in the decrease in her panic attacks and crying.

At the end of treatment, Sarah did not express a need for continued care. However, she was provided with a referral for counseling services at the college she would soon be attending, should she decide to seek out additional mental health services in the future.

Client 3: “Jack”

Identifying information.

Jack is a 34-year-old Caucasian male, who, at the time of treatment, was employed by a law firm, where he performed clerical work. He was previously enrolled in the United States Military, where he was responsible for monitoring the condition of intercontinental ballistic missiles (ICBMs). Jack left the military after his OCD symptoms became exacerbated following

the attention to detail required by his work with ICBMs. He lived with his girlfriend, whom he had been dating for two years.

Presenting problem.

Jack referred himself to the clinic after his psychiatrist suggested that he seek out a cognitive behavioral therapy provider. He presented to treatment with multiple symptoms of OCD, primarily surrounding a need for excessive cleanliness and worry about being a bad boyfriend.

Jack stated that his obsessions regarding cleanliness had become less severe over previous years, and no longer resulted in significant distress. Jack attributed this improvement to working in a less stressful environment, and taking medication targeting his anxiety (clomipramine). Despite this, Jack did report that he continued to worry that dirty objects may “contaminate” their surroundings, and that he washed his hands multiple times a day in order to alleviate this anxiety. This hand washing compulsion followed a consistent schedule, in which Jack would wash his hands three times for approximately five minutes, after which he would wash his forearms. Jack stated that he was able to refrain from washing his forearms if he found himself in a public area where this may be considered strange, but that this refraining caused him to experience considerable anxiety. Although Jack stated that his obsessions regarding contamination were no longer severe, they had caused his hands to become uncomfortably dry, a side effect that he addressed using moisturizing lotion.

Jack’s primary reason for seeking treatment were his intrusive worries, which centered on the fear that he had been a bad boyfriend. For instance, one session saw Jack being overwhelmed with worry that he had encouraged a waitress’s warmth by being flirtatious, while another saw him expressing fear that his attraction to females other than his girlfriend made him

unfaithful. These thoughts were followed by a compulsive desire to tell his girlfriend about the offending cognitions, which he acted on more often than not. However, Jack rarely provided an explicit description of these thoughts, and instead had a tendency to say to his girlfriend, “I am upset about ‘the usual’” when these thoughts arose. “The usual” therefore acted as a placeholder for the offending thought or action and provided Jack with a way to communicate to his girlfriend that he was concerned that he may have wronged her, without explicitly stating what he believed he had done. Jack stated that he found this less distressing than either telling his girlfriend the offending thought or saying nothing to her. This tendency to communicate his worries to his girlfriend (either explicitly or by saying “the usual”) had a significant negative impact on their relationship, as she had stated multiple times that she would prefer that he remain silent.

Jack also reported that he felt “a little bit” depressed, endorsing symptoms of lethargy and anhedonia. He stated that he did not realize this until his girlfriend and his psychiatrist suggested that he may be struggling with depression. Jack also endorsed thoughts of wanting to hurt others, although this seemed to take the form of intrusive thoughts. Jack stated that he did not have any concern that he would actually act on these thoughts.

History of presenting problem and treatment.

Jack previously received psychological treatment from his psychiatrist, whom he has been seeing for the past six years. Jack’s psychiatrist attempted to address his symptoms of OCD by using a number of psychodynamically-oriented interventions, including hypnosis. However, the psychiatrist suggested that Jack seek out CBT treatment after these approaches were unsuccessful in ameliorating Jack’s symptoms of OCD.

Jack reported that his symptoms of OCD first became apparent in 2004, when he was in college. He stated that his girlfriend at the time would often remind him to wash his hands, leading him to become preoccupied with issues of cleanliness. These symptoms became exacerbated after Jack entered the military, where his responsibilities included frequent monitoring of ICBMs, with little room for error.

Social and family history.

At the time of treatment, Jack lived at home with his girlfriend, whom he had been dating for approximately two years. Jack's mother passed away, leaving him to care for his father, who suffered from dementia, and his sister, who was receiving chemotherapy for cancer. Jack stated at multiple times during treatment that he resented his extended family members for not making more of an effort to help him care for his father and sister. Jack's sister's condition worsened throughout his time in treatment, culminating in her passing away approximately three months prior the end of my time working with Jack.

Family psychiatric history.

Besides his father's dementia, Jack did not report any other significant mental illnesses within his immediate or extended family.

Current medications.

Jack is currently prescribed clomipramine (100 mg) for his symptoms of OCD.

Biopsychosocial formulation.

In line with a cognitive behavioral theory of OCD, Jack's symptoms of OCD were hypothesized to be the result of classical and operant conditioning (Barlow, 2014). Specifically, Jack's anxieties related to fastidiousness and maintaining good hygiene most likely began with his college girlfriend's insistence that he maintain good hygiene, and the attention to detail

required by his work with the U.S. military. These anxiety-provoking stimuli (e.g. his girlfriend's criticism or the fear of performing an error at work) were then associated with neutral stimuli (e.g. hygiene or errors unrelated to his girlfriend or work) through classical conditioning. Avoidance of these stimuli was maintained through operant conditioning, and ultimately led to the exacerbation of his symptoms of anxiety. Although Jack was able to manage the anxiety related to cleanliness by developing a system of hand-washing that was socially appropriate in most settings, his approach for managing the anxiety that accompanied his intrusive sexual thoughts had been less adaptive. His need to undo his perceived wrongs by telling his girlfriend "the usual" had resulted in significant distress within their relationship, and further increased his motivation for treatment.

DSM-5 diagnosis.

Jack meets diagnostic criteria for Obsessive Compulsive Disorder (300.3)

Treatment plan.

Exposure and response prevention was selected as the primary mode of intervention, due to its established evidence base in treating OCD (Foa, Yadin, & Lichner, 2012). Jack and the therapist constructed an exposure hierarchy and a schedule of exposures that Jack would engage in each week. Initial exposures included telling his girlfriend what he ate for lunch (a low-level exposure) and intentionally lying to her (a high-level exposure).

Similar to Sam, cognitive defusion was incorporated as a method by which Jack could effectively stop engaging in compulsive cognitive patterns (e.g. "I could not have been flirting with the waitress, because my girlfriend would have noticed and commented"), without interfering with habituation by engaging in avoidance (e.g. "I can't think about this because I

can't handle it"). However, distinctions between these interventions were not drawn as explicitly (i.e. "Cutting, exposing, challenging") as they were in the case of Sam.

Course of treatment.

Jack came to treatment at the encouragement of his girlfriend, who was the focus of the majority of his obsessions and had therefore experienced the detrimental impact of his OCD-related thoughts and behaviors. It became apparent during the initial therapy sessions, which focused on identifying goals for treatment, that Jack shared his girlfriend's desire to be able to have a relationship that was not negatively impacted by his obsessions and compulsion. However, he also had not previously participated in ExRP, and had reservations about engaging in highly distressing exposures. These reservations likely contributed to his tendency to not complete all of his exposure homework, which consisted primarily of imaginal exposures to the possibility that he may have been dishonest to his girlfriend. Jack was instructed to identify and tolerate his anxious thoughts, rather than challenge them. He was also advised to distance himself from his anxious thoughts (i.e. engage in cognitive defusion techniques) during those times when he was unable to fully engage in exposures. Jack's approach to responding to obsessive cognitions therefore mirrored Sam's, albeit without the specific responses being explicitly defined and carried around on a sheet of paper.

Jack's exposures were primarily imaginal in nature because of the distress that his obsessions caused his girlfriend, thereby causing her involvement in therapy (which would have likely been necessary for in-vivo exposures) to be contraindicated. This concern was confirmed after Jack's girlfriend attended one of his sessions and became visibly distraught after engaging in an exposure involving him trying to tolerate lying to her about what he had for lunch. Jack's girlfriend stated that watching him have such difficulty being honest with her made her worry

about what other things he might be hiding from her. The decision was therefore made to cease Jack's girlfriend's direct involvement in exposures, until she necessary for treatment to proceed (i.e. in the case in which Jack had habituated to all other exposures).

Jack's partial completion of his exposure homework continued throughout the middle phase of treatment, which saw him identifying obsessional thoughts and practicing daily exposures of sitting with these anxious thoughts and feelings without challenging them, as described above. Jack and I soon agreed upon recording in-session exposures, and scheduling times that Jack could listen to them over the following week, in order to increase the likelihood of exposures being completed and ensure that the anxiety elicited by these exposures would be significant and consistent.

In spite of these adjustments, Jack would often arrive to treatment having completed only half of his exposures, often conducting them in a manner that was less than ideal (e.g. listening to the exposures in his car, while driving). He demonstrated moderate treatment gains during this time, working his way towards more challenging exposures, and significantly decreasing his use of cognitive and behavioral compulsions (e.g., ruminating on reasons that he had not been duplicitous towards his girlfriend, or saying "everything's covered" as a way of alleviating the anxiety that he had committed a lie of omission). Jack and I remained in agreement that we would likely be able to achieve greater treatment gains if we could find a way to achieve a more consistent exposure schedule.

The final stage of treatment continued to focus on identifying new, more challenging exposures, while also troubleshooting barriers to consistent homework completion. It was therefore common for the first half of each session to be spent discussing ways to address Jack's partial completion of his exposure homework, and the second half spent conducting said

exposures, so as to not reinforce their avoidance. These discussions included identifying dates after which treatment would be discontinued if exposures were not completed more regularly, dates that were intended to both provide a motivator for engaging more actively in treatment, and to prevent an accumulation of failures with an ExRP protocol. Jack never passed these dates without completing the agreed upon exposure schedules, and he was therefore referred to another student clinician at the ADC after I left the externship. The final in-session recorded exposure that Jack completed had him tolerating the uncertainty that he may not love his girlfriend, an exposure which he described as the “worst” (i.e. most difficult) of his time in treatment.

Treatment outcome.

Jack was seen in treatment for a total of 32 sessions over 10 months. Although he benefited from therapy, his improvements were not as clinically significant as Sam or Sarah. By the end of treatment, Jack had not made use of his safety behavior (e.g. saying “Everything is covered”) in a number of weeks and was able to engage in exposures that he had previously stated he would not perform (e.g. the final exposure of sitting with the uncertainty that he does not love his girlfriend). This had also extended to a significant decrease in his subjective impairment, as evidenced by a decrease in the frequency and severity of his anxious rumination, and increased satisfaction in his relationship, as reported by both he and his girlfriend. However, Jack continued to avoid conversations with his girlfriend, and continued to engage in anxious rumination during the day. These continued difficulties were likely influenced by Jack’s partial engagement in the exposure therapy.

Jack was referred to treatment with another student clinician within the clinic, after demonstrating a willingness and ability to reengage with his exposure hierarchy. During the final session, the clinician was explicit in emphasizing the detrimental impact of multiple starts

and stops of treatment, and difficulties adhering to an exposure protocol. The new student clinician and Jack agreed to begin meeting and working on constructing a new exposure hierarchy, with the added contingency that they would end treatment if Jack was unable to remain consistently engaged in ExRP.

V. Transcription Analyses

A Difference in Outcome: Evidence of a Substantive Difference Between Cognitive Restructuring and Cognitive Defusion

I will begin with an excerpt from the case of Sam, which provides the clearest illustration of the differentiation between cognitive defusion and restructuring made by Hayes, Strosahl, and Wilson (2012). It offers an example of Sam and I discussing the distinction between three different cognitive responses to Sam's obsessive thoughts, two of which were framed as adaptive, and one of which was identified as maladaptive.

Specifically, Sam's treatment plan differentiated between "engaging," "cutting," and "challenging." "Engaging" captured the process of exposing oneself to the anxiety that accompanies an obsession and allowing it to habituate through the process of exposure and response prevention. Sam would therefore identify the thought that was eliciting anxiety (e.g. "You just did something sexually inappropriate"), and focus his attention on this anxiety, without trying to either prove or disprove the anxiety-provoking thoughts (e.g. "You may have done something sexually inappropriate. You need to sit with and tolerate the anxiety that accompanies this fear.") Sam was encouraged to repeatedly be aware of cognitive efforts to disprove (or "engage with") the anxiety-provoking thought (e.g. "You probably didn't do anything, because someone would have said something," or "Don't think about such distressing things."), and

instead redirect his attention (i.e. “re-expose” himself) to the anxiety-provoking thoughts. Sam was encouraged to respond to his anxiety-provoking thoughts in this manner when engaging in his scheduled in-vivo and imaginal exposures.

“Cutting” referred to the process of cognitive defusion, in which Sam noticed the anxiety-provoking thought, and “cut” his engagement with it, deliberately ceasing his ruminative engagement with the thought process. For instance, if presented with the thought “You just did something sexually inappropriate,” he might respond by thinking, “This is just a thought. It’s irritating, but it’s just a creation of your mind. So, don’t engage with it. Just let it go and redirect your thoughts elsewhere.” This therefore fits the definition of cognitive defusion, as it saw Sam engaging with the relational frame connecting his thoughts to reality (i.e. “This is just a thought”), rather than the content of thought (i.e. “So don’t engage with it”). Sam was instructed to engage with his anxiety-provoking thoughts in this way when struggling with them outside of scheduled exposures. This decision was made because it quickly became apparent that Sam struggled with anxiety-provoking thoughts throughout the day, and engaging in exposures at all times was untenable, due to both the distress that it would elicit, and the way it might interfere with Sam’s ability to engage effectively with his professional obligations.

“Challenging” referred to the process of arguing with the thought, in an effort to avoid the anxiety that it provoked. This process was alluded to above, in the example of Sam’s efforts to disprove his anxiety provoking-thoughts by telling himself, “You probably didn’t do anything, because someone would have said something.” This maladaptive process could therefore also be referred to as a “cognitive compulsion,” as its function was to reduce the anxiety caused by the obsession, albeit while also creating maladaptive pattern that ultimately exacerbates Sam’s anxiety by encouraging avoidance and preventing habituation (Barlow, 2014; Foa, Yadin, &

Lichner, 2012). This process of “engaging” therefore fits the definition of cognitive restructuring provides above, as it sees Sam looking to change the thought he is presented with (i.e. change “You did something sexually inappropriate” to “You did not do something sexually inappropriate”), rather than weaken the relational frame that connects this thought to reality. This process of “engaging” was discouraged in all situations, as it was likely to exacerbate Sam’s anxiety over time (Foa, Yadin, & Lichner, 2012).

The following exchange provides an example of Sam describing how he understands the difference between “engaging” (i.e. cognitive restructuring) and “cutting” (i.e. cognitive defusion). This exchange occurs during a discussion about a situation in which Sam found himself presented with an unclothed ethnic minority infant in a hospital waiting room.

Sam: Um, so engage is –so I guess it’s wrong but, it happened, and then adding details to it.

Therapist: Mhm.

Sam: To make the anxiety as high as possible. So rather than saying, “maybe yes, maybe no,” to say, “yes.”

Therapist: Mhm. And then cutting it?

Sam: And then, recycling it until it exhausts itself. (*here Sam is still talking about “engaging,” and referring to the process of continuing to redirect his focus towards the anxiety-provoking thought*)

Therapist: Mhm. So that’s, that’s the, um-

Sam: Engaging.

Therapist: What is cutting?

Sam: “Maybe it did, maybe it didn’t. Doesn’t matter, it’s OCD, like you said, it’s predictable. It’s going to continue to be predictable. It’s an unfortunate situation.” So.

Therapist: And then do you leave that thought, or stay with it?

Sam: Um, I try to leave it. If it’s still there, just repeat it again.

Sam's description of "engaging" and "cutting," as well as the absence of "challenging," provides an example of a situation in which cognitive defusion and cognitive restructuring may have drastically different clinical outcomes. In this clinical scenario, "cutting" (i.e. cognitive defusion) allowed Sam to reduce his distress effectively, while "challenging" (i.e. cognitive restructure) acted as a form of avoidance that will exacerbate his symptoms of anxiety over time.

In order to gain insight into the reasons these interventions were invoking different responses, it will be useful to view OCD through the same lens with which we are analyzing cognitive defusion and cognitive restructuring. Specifically, intolerance of uncertainty has been identified as one the primary cognitive misappraisals made by individuals with OCD (Foa, Yadin, & Lichner, 2012; Rego, 2016). One way of understanding this is that OCD is not a disorder of response to feared outcomes, but instead to the *uncertainty* of a feared outcome. In other words, Sam's distress at the prospect of having acted sexually inappropriate towards a child was entirely normative. What was abnormal was his difficulty finding solace in the extraordinarily high probability that this did not occur. Viewed through figure 1, this could be seen as a disorder (or "fusion") of the relational frame connecting thought to reality. For having difficulty accepting the uncertainty of his thoughts is essentially the same as Sam having difficulty accepting that they may not reflect reality.

This also explains why compulsions, whether cognitive or behavioral, were ineffective and ultimately detrimental; they targeted the content of the thought while leaving the abnormally rigid relational frame untouched. Efforts by Sam to change the content of his thoughts (e.g. "You must not have done something sexually inappropriate, because no one has said anything") therefore proved inadequate, as counter-arguments that would likely be ignored by someone who does not struggle with OCD (e.g. "Yes, but what if no one is saying anything because they don't

want to alert you while they wait for the police to arrive?”) were bolstered by an abnormally strong relational frame. This set off a pattern in which each anxiety-reducing alternative cognition was accompanied by an anxiety-provoking counter-argument.

This pattern of engagement with reassurance seeking has been shown to lead to increases in anxiety over time (Foa, Yadin, & Lichner, 2012), and can also be understood using figure 1. For each anxiety-reducing alternative cognition may have strengthened the relational frame of the anxiety-provoking thought, as it implicitly suggested that the anxiety-provoking thought may reflect reality (i.e. that the relational frame has meaning). Were this not the case, and Sam were to believe that the anxiety-provoking thought had no relation to reality (i.e. the relational frame was specious), he would have no reason to expend the mental resources arguing with the thought, and would instead be able to let it go, “like a leaf on a stream.” This therefore provides support to Hayes, Strosahl, and Wilson’s assertion that cognitive restructuring “could also make the thought more important and central, perhaps even causing it to impact behavior more, not less.” (2012, p. 50). This framework would seem to suggest that cognitive restructuring and cognitive defusion are interventions that make use of different psychological pathways, and lead to different outcomes.

A Difference in Semantics: Evidence of a Similarity Between Cognitive Restructuring and Cognitive Defusion with Just a Difference in Name

However, one could also question whether Sam’s “challenging” is a prototypical example of cognitive restructuring, or instead an instance of cognitive restructuring done poorly. For while cognitive therapy initially targets automatic thoughts, it intends to ultimately work its way back, first to intermediate beliefs and then to core beliefs (Beck, 2011). The hope is therefore

that restructuring is working its way to the core belief, rather than repeatedly playing whack-a-mole with automatic thoughts, cutting the weed but leaving its root intact.

An example of this might be a highly successful and well admired journalist, who struggles every day with thoughts that she is inadequate and resented by her peers. Were a cognitive behavioral therapist to try to implement cognitive restructuring by addressing each maladaptive cognition, week after week, it would be easy to argue that they were providing ineffective care. Instead, the more appropriate “cognitive restructuring” intervention would likely be to draw attention to the number of times that the journalist has had these thoughts in the past, and the number of times it has been shown to be untrue. Highlighting the manifestations of this “core belief of worthlessness” could then be used as the “evidence” that the thought is not a meaningful reflection of reality. The journalist would then be encouraged to identify each subsequent thought related to being worthlessness as a manifestation of this schema. Once identified, the journalist could disprove the distressing thought by noting its relation to this core belief of worthlessness (e.g. “There I go again, coming up with another reason that I’m not good enough), without taking the time to argue against the specific content of the thought.

To apply this analogy to Sam, the clinician would most effectively engage in cognitive restructuring by drawing attention to the core belief that appears to be preventing these thoughts from dissipating, rather than trying to combat the same automatic thought that has been addressed multiple times in treatment (here, “What if I did something terrible?”). For Sam, the core belief that is common to nearly all of his anxiety-provoking automatic thoughts would likely be reflective of the concept of thought-action-fusion (Shafran, Thordarson, & Rachman, 1996), or “the tendency to treat thoughts and actions as equivalents.” (Rassin et al., 1999, p. 231) Having identified this core belief, I could then target it through cognitive restructuring, perhaps

by arguing that, historically, his thoughts have been highly unreliable predictors of reality. Having identified this unhelpful pattern of thought, I would then advise Sam to practice noticing and restructuring any automatic thoughts related to this core belief of thought-action-fusion during and between sessions. Instances of thoughts could then be responded to by saying, “You’re treating your thought as though it was the same as reality. And the evidence we’ve reviewed in the past has shown that they are actually quite different. So it’s not reflective of reality, it’s just a thought.”

It is no accident that I have ended this hypothetical scenario with the same phrase (“just a thought”) that was previously used to describe cognitive defusion. For while it provides an example that is in line with cognitive restructuring (i.e., uses evidence to target the content of the core belief, rather than the relational frame that connects this core belief to reality), it could also be seen as a form of cognitive defusion. One could easily see this argument for why Sam’s anxious automatic thoughts are “just a thought” as an effort remove the “fusion” between reality and thought.

This presents a dizzying conclusion, in which cognitive restructuring can be seen as cognitive defusion, provided that the “content” being targeted is that thoughts need not be framed as reflections of reality. This conclusion becomes even more tangled when one considers that this could be seen as the message of *all* cognitive restructuring, which looks to help people “evaluate their thinking in a more realistic and adaptive way.” (Beck, 2011, p.3) The same could be said of the instance of cognitive defusion (i.e. “cutting”) provided above, or that Sam should respond to his anxiety-provoking thoughts by saying, “This is just a thought. It’s irritating, but it’s just a creation of your mind.” For this statement is essentially an alternative cognition for the thought, “You just did something sexually inappropriate.” It is therefore possible that

although cognitive restructuring and cognitive defusion appear to be disparate interventions, they may actually be reflecting two sides of the same coin. For identifying a thought as unrealistic presumably reduces the strength of the “relational frame” between it and reality. Equally, identifying a thought as “just a thought” must change its content.

This example therefore provides an argument against the proposal that cognitive restructuring does not target, and potentially strengthens, the relational frame (Hayes, Strosahl, & Wilson, 2012). For it offers a scenario in which cognitive restructuring would be expected to be detrimental but is instead shown to be therapeutic through its influence on the relational frame. While we therefore have reason to posit that cognitive restructuring and cognitive defusion are not categorically different, in the sense that one influences the relational frame while the other does not, we are still left with the question of whether there might be qualitative differences in the way they lend this influence. For instance, are there situations in which an individual might be more amenable to the influence of one intervention rather than the other? Do they take effect at differing speeds, or with varying effectiveness? In order to gain insight into these questions, it will be helpful to look at an instance that includes a more traditional use of cognitive restructuring than the scenario detailed above.

A Difference in Argument: Cognitive Restructuring and Cognitive Defusion as Alternative Justifications for the Speciousness of the Relational Frame

The following excerpt from the case of Sarah occurred towards the end of her time in treatment and sees her expressing concerns that she is unprepared for the changes that will accompany her transition to college over the coming weeks. Although this particular concern regarding the changes college would bring had not been voiced previously in therapy, it reflected a similar theme that had been the focus of nearly their entire treatment. Namely, it offered an

example of Sarah responding to internal distress with anxiety regarding the meaning of her thoughts and feelings, and self-criticism regarding her difficulty controlling her cognitive and emotional distress.

As described above, Sarah's emotion dysregulation was targeted by having Sarah recognize and accept distressing emotions and cognitions and respond to them without judgment. The accompanying excerpt contains an example of this intervention, including instances of cognitive defusion, during which I suggested that Sarah view her thoughts as "just thoughts," rather than reflections of a disconcerting reality that she needs to prepare for and resolve. Additionally, during this excerpt I also encouraged Sarah to independently identify and implement the cognitive techniques practiced through their treatment to manage this distress. This emphasis on encouraging Sarah to adopt responsibility for her wellbeing was also influenced by her focus on her family's role in invalidating her difficulty responding to her emotions, as well as the physical limitations of her cerebral palsy condition. For while there appeared to be validity to the belief that others had contributed to her emotion dysregulation, it had also been shown to act as a treatment obstacle, preventing Sarah from engaging fully with emotion regulation skills.

Therapist: You're feeling scared.

Sarah: One thing I don't think my family will ever understand is, no matter how many times I visit the school, I don't think this feeling is gonna go away until I actually go there and start, you know, feeling comfortable there, as a student there. You know, I don't know what it's like, like that yet. And I've been there, like, three times already, and whenever I go there I love it, but...I, I just feel this, I still feel this fear, 'cause I know it's gonna be different from what I've known, pretty much my entire life.

Therapist: What does it mean that the fear's there?

Sarah: I'm just...afraid of the situation. I, I can't...I think that's it. I'm just afraid of, the unknown, not knowing what's in front of me.

Therapist: Mmhmm. Does it mean you're unprepared?

Sarah: Not necessarily, but... whenever I feel this kind of fear I always feel like I'm unprepared.

Therapist: Mhm.

Sarah: I always feel pretty much defenseless.

Therapist: So feeling unprepared maybe follows the fear?

Sarah: Yeah, I guess... My friend and I were just joking about it earlier. We were in her car, on the way back from lunch together. She said, "do you have a time machine so I could go back to when high school started?" And I was like, "no, sorry." And she was like, "how did it go back so quickly?" And I kind of joked with her, I was like, "Well look at you! Just a few weeks ago you were saying to me, that, you know, you were all excited about it, you were saying let's get our diploma and get out of here-

Therapist: Mhm!

Sarah: -and now all of a sudden you're turning around and saying you don't want it now?!

Therapist: Those can both coexist.

Sarah: Yeah.

Therapist: Well, what would it be like, right now, in this moment, to apply what I'm talking about? Sort of to, to, look at what you're feeling, and accept it as a feeling that you're having... Start there. And then to see some of the implications that are coming out of it. Those don't have to be true, they can just be a feeling.

Sarah: So what you're saying is that it could mean nothing as to what would end up happening later?

Therapist: Yeah, I think that is what I'm saying. You know, there's a thought that you're sort of having-

Sarah: It wouldn't be the first time my mind messed with me. So tired of it.

Therapist: Well, it's taking the, uh, fear that you're feeling, and saying that it's a sign that things aren't going to go well... Is it possible to distance yourself from that thought, while also accepting that, uh, sort of not getting frustrated at yourself for having the feeling that maybe came before it?

Sarah: No, I don't think like it is right now, I feel I can still- it's still too early, I mean, honestly, I mean... I feel, I feel that if I, if I did that, and I mean, I'm not saying it can't help me. But, I feel that if I do that, I'll end up undermining the, uh, um, the changes that are gonna happen. Because I know there are going to be some changes in my life that I want to be prepared for.

Therapist: Mmm.

Sarah: I mean, not necessarily to be afraid of them. That, that's one thing that I would like to remove, but-

Therapist: Mmhm.

Sarah: I mean, changes frighten me a lot! What else can I say?

Therapist: No, it's very scary! ... It sounds like there's a way it feels like the worry is sort of- if you weren't to worry, you wouldn't be prepared.

Sarah: That, that's what it feels like.

Therapist: How does worry help you prepare?

Sarah: I don't know. Like, if I'm worrying about storms, if I'm not concerned about storms at all, I could end up forgetting my headphones, and go to sleep, and then a loud crash wakes me up.

Therapist: Mmhm.

Sarah: I, I just don't want to be, I just don't want a rude wakeup call. I want to be prepared for anything. And, for me, unfortunately, being prepared has become synonymous with being worried about something.

Therapist: Mmhm! It's an interesting analogy, to the storms. I think you're right.

Sarah: Yeah, so. I just, I just feel like. I just hate how it's all connected, and, I'm just so unsure, I, I feel like- (*beginning to cry*)

Therapist: I think this is the acceptance part. It's ok that this is hard, you know, it's ok that there's part of you that's really pretty rough on yourself. And it's ok that it's taking time to make that part shut up a little bit....To have some compassion for yourself. I think you're working very hard at this.

Sarah: I can say I'm doing all I can, but, sometimes people in my life can say to me, you know, you're doing your best, but you know your best isn't good enough!

Therapist: So, that's, uh- that one makes me dizzy, because it's almost circular. Because in order for your best to be good enough, you have to accept it. You know, it's like, that voice that says it's not enough is the part that we're trying to fix. It gets very tricky.

Sarah: I get beaten down by my own parents, because I'm nervous around storms, and they think I should move past this. I feel like my best is never good enough!

Therapist: Mhm

Sarah: I'm constantly try to- I'm constantly trying my best, but my best is never good enough for anybody!

Therapist: Well, I think that's why-

Sarah: That's pretty much what I went through all year with my child development teacher! I did my best at something, it's never good enough! I'm afraid- I'm afraid- I'm afraid of running into people who are like that.

Therapist: People who don't see you're- people who don't-

Sarah: -See that I'm really trying. That I'm really doing what I can.

Therapist: People who introduce judgments onto your experience.

Sarah: Exactly.

Therapist: Well why don't we look within yourself? Let's put people to the side for one minute. What would it be like to be that voice you wish they were? What would you say to yourself?

Sarah: You're doing what you can do. You know, you are trying your hardest, and I mean- It's not going to be good enough for everyone, but you don't forget about comments about you- sort of thing.

Therapist: Mhm. So that's sort of what you can say to that thought that pops up. When it says, "you're just messing this one up, (Sarah)"

Sarah: My own parents say stuff like that to me. And it hurts!

Therapist: Mhm! And I think that's why we might want to do a joint-session- why I think we *do* want to do a joint session.

Sarah: Yeah. Next week?

Therapist: Yeah, I'm down!

Sarah: Ok.

Therapist: Um, but I also think it's important, within yourself to start to sort of foster that voice.

Sarah: Yeah.

Therapist: What would it be like, if you had that voice in you, that could sort of beat the other one down? How do you imagine that?

Sarah: Well, I kind of have, or at least I've started. I mean, I feel like my self-confidence has gotten better.

Therapist: Yeah! It has.

Sarah: I, I still, I still uh, bag myself like you wouldn't believe.

Therapist: Oh, I believe it.

Sarah: But, it's gotten easier to accept certain things.

Therapist: You know, I was thinking before with the worry- the thing about being prepared, is that it tends to make things scarier... Wait, that's not quite true.

Sarah: (Laughs)

Therapist: The thing about *worrying that one isn't prepared* is that it makes things scarier.

Sarah: Yeah.

Therapist: See the thing you said about the storms, right?

Sarah: Yeah.

Therapist: "I don't have my headphones, I'm not ready for a storm."

Sarah: Right.

Therapist: The headphones may or may not be something that you want to keep for the rest of your life, but I do think that saying, “I need the headphones there’s going to be a storm, I need the headphones, there’s going to be a storm,” we’re also sort of teaching you that storms are something that are very scary.

Sarah: Right.

Therapist: And so, to just jump over to college, there’s the worry “I’ve got to be prepared for college, I’ve got to be prepared for college. If I don’t worry about this, then I’m not going to be prepared.” It’s a good way of teaching yourself that you’re not going to be prepared for college...And right now, if there’s that voice saying, “Dammit, why are you doing this?”...Is that there? I’m just going off your facial expression.

Sarah: (Laughing) Now I’m thinking you’re a mind-reader.

Therapist: (Laughing) No! What, what can you say to it?

Sarah: Leave me alone?

Therapist: Uh-huh. Leave me alone is good too. There’s kind of a couple ways to go about this, you can try to argue with it, point out that it’s point is invalid, or you can just sort of tell it to shut up.

Sarah: Mmm.

Therapist: ...How are you feeling?

Sarah: Ok. A little better.

Therapist: Good.

This excerpt provides an example of a switch from cognitive defusion to cognitive restructuring. I began by proposing that Sarah “distance” herself from her thoughts about being unprepared for college, suggesting that they “don’t have to be true, they can just be a feeling.” This is therefore a form of cognitive defusion, as I am not suggesting that Sarah engage with the content of the thought, but instead that she challenge the relational frame between the thought and reality.

However, Sarah presses back against this suggestion, suggesting that it would “undermine” the change that will come when she enters college. Sarah is therefore effectively suggesting that she does not believe the relational frame between the thought and reality to be specious, and that her ruminative thoughts reflect an effective attempt to address a real threat (i.e.

being unprepared for change). Sarah had therefore not yet been convinced that the relational frame was specious.

In hindsight, this is what led me to make a switch to cognitive restructuring, arguing against the content of two specific thoughts, namely that she was not working hard enough, and that her worries about the future were helping her prepare for an impending change. Once this argument has been made, Sara seems more receptive to implementing cognitive defusion, suggesting that she could respond to these self-critical thoughts by telling them to “leave her alone” (as opposed to arguing with them or saying that they’re wrong). In an effort to reinforce the use of both of these cognitive techniques, I then suggest that both can be helpful, or that she can “argue” with these thoughts (i.e. challenge them through cognitive restructuring) or tell them to “shut up” (a description which is hardly by-the-books cognitive defusion but alludes to the same technique).

This pattern draws attention to a number of crucial issues. For one, it introduces the possibility that the difference between cognitive restructuring and cognitive defusion is whether or not they allow a “what if,” or a possibility that a particular thought is a reliable and useful reflection of reality. It also highlights a situation in which cognitive restructuring is clinically indicated, as the client is presented with a thought that has not yet been “resolved.” In other words, I believe that if I had persisted and continued to suggest that Sarah view her fears regarding the changes that would come with college as “just a thought,” I would effectively be trying to argue for ignoring a relational frame that Sarah still believed to be meaningful. Most of Sarah’s previous worries related to her ability to tolerate her emotional experiences, and the reactions of others when she became dysregulated. This example therefore illustrates a different anxiety, rooted in the reality of changing external circumstances (i.e. that she is unprepared for

college, and needs to engage in planning to better prepare herself), an anxiety which she had not yet found to be specious. Suggesting that Sarah engage in cognitive defusion in this scenario would therefore be to provide an argument without justification. For I would be asking her to ignore a threat that she believes to be real (i.e. that she really is unprepared), without providing any evidence that this threat is actually unfounded.

My inability at the end of this exchange to provide specific instruction on when to use cognitive defusion and when to use cognitive restructuring also highlights the importance of this research question of whether these interventions function through different clinical pathways, and lead to different clinical impacts. For while it draws attention to the utility of both of these techniques, it provides the client with little guidance on when to use which technique. Had I possessed a more detailed understanding of the mediators of each technique, I might have been more helpful in providing insight into when to use what intervention. Put another way, “What treatment, by whom, is most effective for this individual with that specific problem, and under which set of circumstances?” (Paul, 1967, p. 111)

This framework provides a working hypothesis for why one might implement cognitive restructuring rather than cognitive defusion, or vice versa. Specifically, clinical scenarios where the individual has not yet been convinced of the speciousness of the relational frame between reality and thought will likely benefit from a cognitive restructuring intervention, while scenarios in which this argument has successfully been made might benefit from a cognitive defusion intervention. In order to examine the validity of this hypothesis, it will be helpful to review an example from an alternative perspective, namely one in which cognitive defusion is selected in place of cognitive restructuring.

A Difference in Argument: Evidence from the Cases of Sarah and Sam

The following excerpt also comes from an interaction with Sarah that occurred \during the session following the previous transcript. It again sees Sarah expressing concerns regarding leaving for college, however this time her focus is on the possibility that she will have a panic attack or express strong emotions in front of others, leading her to be ostracized by her peers.

Sarah: I'm just afraid people are gonna- are gonna judge me based on it. Chances are I'm probably overreacting and they probably won't.

Therapist: Mhm.

Sarah: But the, but just the fact that there's the possibility of that scares me!

Therapist: Well, I, I think that- You- the most important part in what I think just is that your *anticipation* of it-

Sarah: Ohh, here we go again! Ahh, sorry.

Therapist: It's ok.

Sarah: But you know where I'm going with this.

Therapist: Uh-huh...And see I think almost spending time with how the future- we can write all these stories where things go horribly wrong.

Sarah: Yeah.

Therapist: And I think- But I think your relationship with this has changed, a little bit. You know, I think you can see when your mind starts writing these stories.

Sarah: Yeah. (Sighs)

Therapist: Because they're not fun stories!

Sarah: No! No! No! But, I mean, I just feel like there's no way to stop writing them. I, I, not necessarily no way, but, no way that I can see, at least right now, considering where I am in my life.

Therapist: Well, I don't think it's necessarily a matter of stopping. I, I think that you're right. I mean, there's a degree of inevitability to wondering what's next. I mean, I was doing the same thing, last night, I was like, "Well, what's it gonna be like? Am I going to go on the unit, will they make me do-" like, you know, and it wasn't helpful. (*Here, I am referring to my next externship, which I had already disclosed would be on an inpatient unit*)

Sarah: No.

Therapist: But the best I can do is sort of notice I'm doing it and try to stop feeding it.

Sarah: Right.

Therapist: So, it's gonna happen.

Sarah: Right.

Therapist: It's like a hungry little pet, you know-

Sarah: Yeah!

Therapist: And it wants to be fed. And you've just gotta, sort of, starve it a little.

Sarah: Yeah.

Therapist: You won't kill it but-

Sarah: (Laughing) No! No.

Therapist: But it will get tired because it's malnourished.

Sarah: Yeah.

Therapist: (Laughing) Let's see how far I can take that metaphor.

Sarah: (Laughing) Yeah!

Therapist: I think you're gonna be ok.

Sarah: I sure hope so.

Therapist: Mhm.

Sarah: I just, it's, it's so much.

Therapist: Mhm.

Sarah: It's so much!

Therapist: Well even if you're not always ok, that's ok.

Sarah: Ok, that sounded odd!

Therapist: (Laughing) Well, what I meant was, I'm sure that there will be times when your anxiety will get to you and it won't be fun, but this is a process.

Sarah: Yeah.

...

(BREAK: conversation continues for approximately three minutes)

...

Therapist: But the other thing that was jumping out to me about this is, is I think it's another example that- It's that old voice, right? There's a part of you that feels that you are...uhh, I don't know, inadequate, or something like that.

Sarah: Right.

Therapist: So, you look for evidence for it, and when you look for evidence, you sometimes find it.

Sarah: Yeah. And then when I try to counteract that, and say that there's evidence that I am adequate, I can't find it.

Therapist: Mhm. Well, there's, there's a couple ways to go about it. One of them is to listen to the voice that tells you you're inadequate and tell it to shut up, because it's clearly a little-

Sarah: Yeah.

Therapist: Silly (laughing). Not silly in the sense of- but, but

Sarah: No, I understand what you're saying.

Therapist: It's not in-line with reality.

Sarah: I get what you're saying.

Therapist: Um. And the other is to try to argue against it, and I can see a laundry list of things you can fight it with.

Sarah: Yeah.

Therapist: But, I also think that that voice is gonna be pretty good at arguing against those things too.

Sarah: Mmm.

Therapist: You know, like when you told me you raised \$20,000 (*for your charity*) and you're like, "Well, you know, it's not enough to pay-" you know, there's always a counter-argument!

Sarah: Yeah, yeah. Yeah, I remember that day, you really got me there!

Therapist: (Laughing) Yeah, well, it's something your mind does, you know?

Sarah: Yeah. I, I just, I also feel like I spend too much time in my own mind sometimes.

Therapist: Mhm.

Sarah: I feel like, it's hard. It's very hard. I, I, I'm still in my own head. Sometimes I don't like what's going on in my head, and I just want to get out of there!

Therapist: Mhm. Well I actually think that's sort of ok. I think you're probably right that you spend too much time in your own head.

Sarah: Yeah.

Therapist: Not something to feel bad about, but I think that, you know-

Sarah: Yeah. I mean, it's been that way my whole life.

Therapist: Mhm.

Sarah: I've always been trapped with my inner thoughts.

Therapist: Mhm. It's a process, starting to pull away from them.

Sarah: Yeah.

Therapist: And I've seen you, you know, I think you're heading in the right direction.

Sarah: Yeah.

Therapist: But I think your relationship with this has changed.

What is notable about this excerpt is that it provides a scenario that contrasts with the previous interaction with Sarah. It sees Sarah looking to engage in cognitive restructuring, stating that she is afraid people are going to judge her and wants to calculate the chances that this will occur. However, this time I made the decision to direct Sarah away from cognitive restructuring, stating that, "when you look for evidence, you sometimes find it," and "there's always a counter argument." I instead suggest viewing her anxious thoughts as "something (her) mind does," and that she would benefit most from trying to "pull away" from these thoughts, and not "feed" them. I am therefore essentially suggesting that Sarah "pull away" from the content of the thought, and instead see the relational frame as a specious creation of her mind. In other words, I am suggesting that Sarah implement cognitive defusion and avoid using cognitive restructuring.

This decision can be better understood when viewed through the lens of the hypothesis presented above, or the theory that cognitive defusion is clinically indicated if the relational frame between the thought and reality has already been shown to be specious, and cognitive restructuring is clinically indicated if it has not. For in this scenario, it was my opinion that

Sarah was beginning to tread down a path that she already knew led to a dead end. This decision was partially made because this interaction followed the previous excerpt in which concerns related to being prepared for college had already been discussed. Additionally, Sarah's thoughts related more directly to a topic that had been addressed throughout therapy, namely that she would be unable to tolerate her emotions, and that others would judge her negatively for this. Sarah was therefore presenting thoughts for which the relational frame had already been shown to be specious.

In order to understand why it might be detrimental to engage with a thought for which the relational frame has already been shown to be specious, it will be helpful to review learning theory, and specifically the concept of inhibitory learning. Research tells us that people do not so much "forget" old learning as continue to develop new learning, learning that is more salient and easily accessed than old learning (Craske et al., 2014). In other words, "...inhibitory learning models mean that the original CS-US (conditioned stimulus-unconditioned stimulus) association learned during fear conditioning is not erased during extinction, but rather left intact as new, secondary inhibitory learning about the CS-US develops..." (Craske et al., 2014, p.11).

To apply this theory to relational frames, if the individual has already "learned" that a particular thought or belief is unrealistic (i.e. the relational frame is specious), then engaging with the thought as though the relational frame had meaning will be detrimental. For doing so would introduce new learning (i.e. learning that the relational frame has meaning) that will interfere with the previous learning (i.e. learning that the relational frame is specious). In the case of Sarah, allowing her to engage in cognitive restructuring would teach her that the relational frame could have meaning, thereby interfering with the work that had been done throughout therapy.

This position mirrors the argument made by Hayes, Strosahl, and Wilson, that cognitive restructuring “could also make the thought more important and central, perhaps even causing it to impact behavior more, not less.” (2012, p. 50). Analysis of Sam’s transcript had suggested that this position was not entirely valid, due to evidence that cognitive restructuring does in fact target the relational frame and, when done effectively, will weaken rather than strengthen it. However, the theory of inhibitory learning complements rather than negates this claim for two reasons. One, it could again be argued that by engaging with the possibility that she cannot tolerate her emotions, Sarah is engaging in a similar form of “ineffective cognitive restructuring” as the example detailed above. For she is not applying cognitive restructuring to the core of her problem (i.e. that her anxieties regarding her emotions mean that she will be unable to control them, and that others will judge her negatively for this), similar to the example of the journalist who, week after week, seeks reassurance that she is respected by her peers.

Additionally, inhibitory learning theory provides an explanation for why there may also be times that engaging in cognitive restructuring is clinically indicated, namely scenarios in which the relational frame is still believed to be meaningful. For the individual has not yet “learned” that the relational frame between the thought and reality is specious (e.g. in the first excerpt from Sarah, during which she believed that she needed to prepare herself for the changes that would accompany going to college), and there is therefore no “learning” that is being obscured through inhibitory learning. Additionally, the difficulty in scenarios where inhibitory learning is likely to occur is not “cognitive restructuring” per se (as cognitive restructuring done effectively would likely target the pattern of thoughts rather than their content), but instead an error in conceptualization and treatment targeting.

This explanation of how inhibitory learning can help shape conceptualization and treatment targeting could also be used to explain another interaction between Sam and the therapist, in which I make an argument for engaging with the content of the thought (i.e. cognitive restructuring), rather than the relational frame (i.e. cognitive defusion). This excerpt occurs towards the middle of therapy, following a week during which Sam had a nocturnal emission, an experience that would elicit significant distress and functional impairment (Sam would often not go to work following such nights). This led to a discussion regarding masturbation, which I thought may prevent such nocturnal emissions in the future, as well as provide a challenging exposure. The discussion begins with my looking to make a distinction between thoughts that are and are not motivated by OCD, a distinction that can be better understood through the lens of inhibitory learning.

Therapist: So, jumping back to the weird differentiation that we sometimes try to make about your beliefs about it and the OCD. Uh, so what are you thinking about that (*masturbation*)? I mean, I can see very clearly where the OCD is gonna say, “you did this thing, that thought came in your mind, maybe you were aroused,” I can see where it’s gonna say that. Um, is there another part of it that’s not as much the OCD, but is sort of a belief about what it might mean, in some sense?

Sam: Yeah, I think all of it is. Like clouded in some degree of-

Therapist: Mhm.

Sam: -is this a hidden part of me that, you know, is the OCD a face for something much worse?

Therapist: Mhm.

Sam: So.

Therapist: Um, well maybe another way to ask it is if another person, um- I don’t of a context where it would come up- but if a friend of yours where they, or if you heard of someone that did that. Masturbating and an image of an image of an infant came in their head and they sort of wiped it out and kept going and finished. What would you think of that person?

Sam: Um. I, I don’t know. Yeah, um, I would be very thrown off first that somebody else did that.

Therapist: Mhm.

Sam: I feel like it's something that people really aren't supposed to do, first of all. I understand that's-

Therapist: People aren't supposed to do, what, masturbate?

Sam: (Nods)

Therapist: Uh-huh.

Sam: So I would kind of be like, grossed out first. Um, I don't know that I could dig into it enough that I would be able to piece it out and-

Therapist: Mhm...Hm!

Sam: So.

Therapist: Ok. Well, the reason I ask that, right, is because I wouldn't- the OCD part probably wouldn't be as vocal if you were thinking about someone else.

Sam: Oh, yeah, yeah. You wouldn't say, they're-

Therapist: Yeah.

Sam: Yeah.

Therapist: But, that feeling is still there, that this is something that's really, really bad. Maybe bad is a bad adjective, but um- Well, can we spend a minute with that? I mean, what, what- I don't think I've ever asked you that, what are your thoughts about masturbation?

Sam: Uh, that it's very unfortunate.

Therapist: Um. Unfortunate...

Sam: Like, that that urge is there, or, whatever.

Therapist: Well, I - I would certainly feel similarly, I mean it's caused you a tremendous amount of pain. So maybe not for you, but, in general. Like, the act, is it good, bad? I mean, you said you were surprised that other people do that.

Sam: Yeah. Bad.

Therapist: Uh-huh.

Sam: I understand that's weird.

Therapist: Eh, it's not necessarily weird, but what do you think is- what's bad about it?

Sam: Um... I don't know.

Therapist: Well, um-

Sam: Yeah, I, I don't know.

Therapist: Well, I, I guess I'm not trying to say you're right or wrong, but people feel differently about it for a number of reasons. Some people, for religious reasons it's bad, other people, um, it's shallow to be so wrapped in physical attraction, um, people have different thoughts about it.

What follows is a discussion between Sam and I regarding Sam's beliefs about masturbation, beliefs which include that it is dirty, unhealthy, and reflects a willingness to be unfaithful to your partner. I then proceed to engage in carefully challenging a number of these beliefs, (i.e. engage in cognitive restructuring), ultimately identifying the concerns regarding "contamination" as being a reflective of Sam's difficulty with uncertainty (i.e. a symptom of OCD); the belief that masturbation is unhealthy as a maladaptive belief, which could be successfully challenged through psychoeducation (i.e. receptive to traditional cognitive restructuring); and the belief regarding infidelity as an additional maladaptive belief that was precipitated by interactions with his girlfriend. The following excerpt sees Sam and I discussing these beliefs and offers an example of my trying to clarify whether these beliefs are related to or independent of his symptoms of OCD.

Therapist: Yeah. Did she (*Sam's girlfriend*), um, so I know she said porn was a no-no. Did she say anything about masturbation?

Sam: Um, so, I feel like they're a little attached. Like, we still haven't- I don't know what she thinks happens.

Therapist: Mhm.

Sam: You know?

Therapist: Right.

Sam: So she'll know when I have a dream, but, I got- So it's never been discussed.

Therapist: Mm.

Sam: I do feel guilty for, you know, doing it.

Therapist: Mhm. But it seems like it - ok, so porn's no good, and sex kind of stops happening because of some physical (*Sam and his girlfriend do not have sex because of the physical discomfort it causes her*), you know, um- and so then I can see how even without her saying, it can be a natural jump to masturbation in general is bad.

Sam: (Nods)

In this excerpt I am attempting to differentiate between a belief for which the relational frame has already been shown to be specious (i.e. his beliefs about masturbating being bad are a manifestation of his fear of contamination, for which the relational frame has already been shown to be specious) and a belief for which the relational frame has not yet been shown to be specious (i.e. his beliefs about masturbating being bad are a result of his concern that his girlfriend would consider masturbation to be a form of infidelity). This distinction allows me to distinguish between two beliefs that require two distinct interventions. Namely, I ultimately suggest that Sam engage with his contamination-related beliefs (i.e. that masturbation will lead him to become contaminated with harmful material) through exposures and stopping himself from engaging with the thought-action-fusion core belief that may arise (i.e. target the relational frame through cognitive defusion, rather challenge the content of the belief through cognitive restructuring). I also briefly challenge Sam's beliefs regarding fidelity by noting that his girlfriend's concerns regarding pornography may be due to his looking at other women, and that it is possible that this discomfort does not extend to masturbation without pornography (i.e. I engage the content of the belief through cognitive restructuring). This was a brief intervention, which ended with my suggesting that Sam consider discussing this topic with his girlfriend. However, it offers an illustrative example of how the status of the relational frame may be used to determine whether cognitive defusion or cognitive restructuring are clinically indicated.

A Difference in Argument: Implications for Clinical Decision Making

Of course, theories that explain decisions are not nearly as helpful as those that direct them. It might therefore be useful to review one final excerpt between Jack and I, in which this theory (i.e. that cognitive defusion is indicated if the relational frame has been shown to be specious, and cognitive restructuring is indicated if it has not) might have led me to take a different approach. This interaction occurred a day after Jack had put down his dog and was struggling with uncertainty about whether he made the right decision, as well as self-criticism that he felt more sadness following the death of his dog, “Sally,” than either his sister, who died of cancer only months prior, or his grandmother, who died when Jack was a young adult.

Jack: It...It was...yeah, I’ve never- (laughs) This is, I guess it’s bad? I don’t know. Like, when my sister passed, I didn’t-

Therapist: Mhm.

Jack: I didn’t react that way. When my grandmother passed away, like came off the chemo, found out she had passed away, because I was living, I was living with them at the time, I didn’t react like that, like- I guess in those cases, I knew it was coming, but I- In “Sally’s” case I knew it was coming too, but, I think to some extent, it’s a little different? When a human and a, and an animal. Well, and last year (sighs)- You know, I kind of felt like in a way I killed her? I sort of, like, you know obviously there’s such a huge mix of all sorts of emotions, and you know, everything, running the gamut of stuff.

Therapist: Yeah.

Jack: But I guess, like. You know, I kind of watched my sister suffer. You know, I watched my grandmother suffer, kind of, and be out of it, and just like, a shell of themselves kind of thing. And, to some extent, I saw “Sally”...not really suffer, you know what I mean? She never really, there were times where she was out of it and not herself, a little bit, like, you know, depending on medications or stuff, but like, when she would come off the chemo, or when she would have the chemo that week, she was, you know, a little bit different. She wouldn’t eat as much, or eat at all, but for the most part kind of acted, relatively- you know what I mean, so I guess it didn’t, I guess it didn’t quite line up-

Therapist: Were you there when your sister died?

Jack: No. I, I wasn’t there for either- yeah- for either of them. I, I got there, um...I guess within the hour? I’m not sure. Somewhere around there.

Therapist: Yeah.

Jack: So that could be it, yeah.

Therapist: Well, I, I- I guess just generally I was thinking, I don't think it's bad at all, that this was more difficult. I don't even think it's all that strange.

Jack: Right.

Therapist: For a number of reasons, I mean, the main one being that, um...death is difficult because of loss, you know? And, um, I think the loss that you experienced with Sally, you know, passing away is um- it's not that it's more or it's better or worse, it's just, it's, it's, it feels qualitatively different to me. I mean, you've described it as you were just so close to her.

Jack: Right.

Therapist: And that may have not been as much the case with these other ones- and that's ok.

Jack: Right, I mean I was close with my sister.

Therapist: Mhm.

Jack: I was close with my grandmother, but not as close, you know what I mean? Like, I mean-

Therapist: Yeah.

Jack: Just by nature of, um, I don't know, like life or whatever.

Therapist: Well, yeah! Well, you know, I think it's, I think that's totally ok. And also, especially with dogs, who are just such like, beautiful creatures-

Jack: Right.

Therapist: I think they evoke like a bit of this-

Jack: Right, right.

Therapist: -unconditional positive regard for you and it's just-

Jack: Right.

Therapist: But the other thing is the situation surrounding it.

Jack: Right.

Therapist: I think this situation would be very different if you had brought her to the vet, gone home, and got a call three hours later that she had passed away.

Jack: Oh at the vet or something like that?

Therapist: Mhm.

Jack: Oh, yeah, that would be awful.

Therapist: Well, but I think it would be awful, but I also think that, in a way, it would be easier?

Jack: Yeah. Because it wouldn't be me, yeah, I guess to a certain extent-

Therapist: And also, it's got to be so- I mean, I'll be candid. I mean, I've had dogs die, it's been really difficult. But, I've never had to make that decision, and I've never had to watch it.

Jack: Right.

Therapist: You know, to sit with them right before, I mean, that's just-

Jack: Yeah.

Therapist: And I think it's, I think it's a very good thing that they do.

Jack: Yeah! No, I, yeah! I mean they're very compassionate, they're very, you know, understanding. And they even have like, the person who came in and did the final word with this is, you know, I think she's a grief counselor or something. Like, they, they, I mean, were very professional-

Therapist: Yeah.

Jack: And very good, and everything there. Um, but yeah, like the, I uh...I suppose, if we had, if they, you know, if we had spent the time and decided when and called them, said when to come back, that kind of thing, that um, I suppose, you know, I could have done it. And then, you know, I think there's a part of me too that, like second guessed it too, like I should have, you know, maybe I should have gave it more time, but- I think we had a pretty good amount of time with her! In fact, I don't, I can't, it's not, it's not worth thinking about, it's just a bad idea for me to start second guessing stuff. But, uh, yeah.

Therapist: Have you been doing that a lot?

Jack: Uh, maybe at first? Maybe to some extent. I think, I mean, uh, there's definitely a lot of guilt. I think there's a lot of guilt to begin with anyway, through all of it. Um. 'Cause I wasn't always the best owner, for sure. There were uh, and then my other dog-

Therapist: How do you mean?

Jack: Well, there were times where, you know, like I wasn't around. There were a lot, a lot of times where I wasn't around as much.

Therapist: Mhm.

Jack: There were times, uh, years ago where, uh, HOW DO I WANT THIS AT ALL, I, I, you know, like I would let them, um, just the two of them, I wouldn't, I wouldn't maybe necessarily come home at night, and I'd let them crap on the floor, piss on the floor.

Therapist: Mhm.

Jack: Stuff like that. Um, like, and then also, my other, my other dog, um. He, at the, at the point where he was old and, um, not in great shape.

Therapist: Mhm.

Jack: I was, I really didn't have much money, and- So I really didn't, yeah, I could tell that he was, there's a point where I thought he was, like, I, I didn't think he was gonna live that much longer. And I ended up, I took him to the vet, and I said, "I really don't have that much money, but I, you know, I just wanna" I, I kind of figured the vet was gonna say, I thought when I was taking him to the vet I thought it was his last walk. Like the vet wasn't that far away and walked there all the time.

Therapist: Mhm.

Jack: And, uh, I thought that was it. And the vet actually said, he seems like he's, you know, he was ok, you know what I mean? And the vet prescribed him some, some pain medication, just 'cause like, just for his hips or whatever.

Therapist: Mhm.

Jack: And then, he did end up, after that he ended up living- it was, January, so he ended up living until April. So, um, and then he, and then there's the guilt with him too, is that, um, not having on the- and then also- you know I wish I had spent- when I, when I, when he was really, when was not in good shape, I spent a lot of time with him. And then, that was in Baltimore, like that week or whatever. And then, um, I moved back to New Jersey, I moved in with my parents, and, you know they were both-

The conversation continues in this way for approximately five minutes, with Jack providing a number of different reasons that he fears he may have not treated Sally as well as he should have. This excerpt is particularly valuable because, when viewed through the lens of inhibitory learning and relational frames, a clinical error becomes apparent. For the beginning of the interaction appears to be productive, with my cognitive restructuring intervention appearing to decrease Jack's guilt. Jack is initially receptive to my explanations for why the distress that he experienced after putting Sally down is normative, and not evidence of his being a bad brother or grandson. However, by the end of the excerpt the conversation seems significantly less productive. Jack's rate of speech increases, containing a flurry of explanations for why he may have made the wrong decision by putting Sally down. I continue to implement the cognitive restructuring techniques that had been successful only moments ago, but they are met with a series of counter-arguments that seem to increase Jack's uncertainty regarding this decision. The interaction ultimately ends with my pulling away from this topic due to time, and I never identify a reason that my cognitive restructuring has been unhelpful and am therefore unable to provide Jack with any instruction on how similar difficulties might be avoided in the future.

When viewed through the lens of inhibitory learning and relational frames, this decline in

therapeutic effectiveness can be understood more clearly. For this lens posits that relational frames that have already shown to be specious are best targeted using cognitive defusion, while those that have not may require cognitive restructuring. At first, I am effectively working within this theory, challenging the thought (i.e. implementing cognitive restructuring), “that I feel more upset following the death of my dog than my sister or grandmother is evidence that I am a person,” a belief whose relational frame has not been addressed during therapy. I appear to successfully challenge the content of this thought, getting Jack to agree that his sadness makes sense, given that he had a more intimate relationship with Sally than his sister or his grandmother. I then apply cognitive restructuring to another belief that has not yet been addressed in therapy (i.e. for which the relational frame is still perceived to have meaning), namely that Jack did not wait long enough before putting down Sally. Jack appears satisfied with this alternative cognition, stating that he “had a pretty good amount of time with her.” Jack then goes a step further, stating that “it’s not worth thinking about, it’s just a bad idea for me to start second guessing stuff.” This could be seen as an instance of Jack disengaging with the content of the thought, and seeing the relational frame as specious, just as one might hope to see a core belief begin to change following a successful cognitive restructuring intervention (Beck, 2011).

However, I then encourage Jack to reengage with the content of the thought, asking him, “Have you been (second-guessing) a lot?” and “How do you mean, (you weren’t the best owner)?” I am therefore “inhibiting” the learning that Jack just engaged in, by implicitly suggesting that the relational frame may hold meaning. Additionally, Jack’s statement that “it’s just a bad idea for (him) to start second guessing stuff” could be seen as a statement regarding his diagnosis of OCD, rather than this specific anxiety-provoking thought. For Jack’s diagnosis

means that, like Sam, he likely struggles with some form of the thought-action-fusion core belief. Jack's statement that it's a "bad idea" for him to second-guess could therefore be seen as Jack identifying this thought-action-fusion related belief and reminding himself that it's relational frame is specious (i.e. that his experiences in ExRP therapy have shown him time and time again that this is a maladaptive response). I then inhibit this learning by suggesting that he reengage with this uncertainty-related belief (i.e. "How do you mean?"), thereby strengthening its relational frame. This strengthened relational frame can be seen in the anxious rumination that follows, which can be understood as an effort to "ensure that something terrible did not happen." Jack's excerpt therefore acts as a cautionary tale, providing an example of how relational frames and inhibitory learning can play an important role in determining whether our cognitive interventions are helpful or harmful.

VI. Discussion

This dissertation has sought to address two questions, namely (1) whether cognitive restructuring and cognitive defusion function through different psychological pathways, and (2) whether this leads to different psychological outcomes. In other words, does cognitive defusion "build on first- and second-wave treatments, (e.g. cognitive restructuring), carrying the behavior therapy tradition into new territory," (Hayes, 2004, p. 639), or is it a different way of describing the cognitive interventions that preceded it? Our analyses suggest that the answer to question (1) is "no" (although cognitive defusion and cognitive restructuring do appear to make use of the same pathway in different ways), and the answer to question (2) is "yes" (albeit only in certain scenarios).

Our initial framing of cognitive defusion as targeting the relational frame between the

thought and reality, and cognitive restructuring as instead targeting the content of the thought (figure 1) is therefore not entirely accurate. As demonstrated in Sam's initial transcript, the intention of cognitive restructuring is to address the content of the thought as a way of working back to core belief, which could also be seen as reflecting the relational frame (Beck, 2011). Although one could identify cases where a cognitive restructuring intervention may actually strengthen the relational frame (e.g. repeatedly trying to convince the aforementioned journalist that she is respected by her peers), further analysis suggests that this is not a problem with cognitive restructuring, but instead with how cognitive restructuring is being implemented. Cognitive restructuring therefore uses the same pathway as cognitive defusion, which also briefly engages with the content of the thought (e.g. by suggesting the individual negate the proposition made by the thought by telling themselves that it is "just a thought"), en-route to addressing the relational frame (Hayes, Strosahl, & Wilson, 2012). This counteracts the distinction that we initially presented, namely that, unlike cognitive restructuring, "...in CD (cognitive defusion) the content of thoughts is not directly challenged, and instead clients are encouraged to accept the occurrence of the thoughts without attempting to modify them." (Yovel, 2014, p. 490)

That cognitive restructuring and cognitive defusion appear to use the same psychological pathway also introduced an additional difficulty, namely that any instance of cognitive defusion could be described as a form of cognitive restructuring, and any form of cognitive restructuring could be described as a form of cognitive defusion (as demonstrated through the examples of Sam and Sarah). This provides support for arguments minimizing the distinction between these interventions, such as made by Arch and Craske, who noted that, "group comparisons tend toward amplification and dichotomization of differences between one's own group and an

outside group. Comparisons of ACT and CBT sometimes reflect this tendency.” (Arche & Craske, 2008, p. 263)

While this framing draws attention to the way that cognitive restructuring and cognitive defusion make use of the same psychological pathways, it also stretches the definitions of the interventions beyond what is normally meant when individuals refer to these techniques (i.e. the definition provided by above, from Yovel, 2014). Specifically, “cognitive restructuring” is usually used to refer to an intervention that provides a number of logical arguments for why the content of a distressing-thought is unfounded. In contrast, “cognitive defusion” is used when the clinician presents only one counterargument to the distressing-thought. Namely, that the distressing-thought is “just-a-thought,” and therefore unrelated to reality. However, even when framed in these terms, cognitive restructuring and cognitive defusion do not appear entirely unique, as “what makes psychotherapies “unique” is essentially a discussion of mediators, or possible mechanisms through which a treatment might achieve its effects.” (Kraemer, Wilson, Fairburn, & Agras, 2002, p.878). For both cognitive defusion and cognitive restructuring appear to achieve their effects by presenting arguments for why the relational frame between the distressing thought and reality is specious, thereby weakening this relational frame, and the distress that accompanies it.

While cognitive restructuring and cognitive defusion are therefore making use of the same pathway - that is, treating the relational frame between distressing thoughts and reality as specious - this subtle difference in the ways that the relational frame is approached can also have significant clinical impacts. For by engaging in argument with the specific content of the thought, cognitive restructuring is essentially allowing the possibility that the thought does have something meaningful to say about reality (i.e. that the relational frame may not be entirely

specious). In contrast, cognitive defusion's refusal to engage in this same type of argument precludes the thought from being seen as a meaningful reflection of reality. In other words, cognitive restructuring treats thoughts with some semblance of respect, engaging in conversation with them as a way of allowing that they might have something to say about reality. Cognitive defusion never begins the conversation, seeing it as equivalent to arguing with a fool; thoughts are separate from reality, so there is no reason to listen to anything that they might have to say about reality.

Framing the two interventions as such allows us to gain some insight into scenarios where one might be more effective than the other. Specifically, beliefs that the individual has not yet found to be unrelated to reality (i.e. the relational frame has not yet shown to be specious) may be more easily impacted by cognitive restructuring than cognitive defusion, as the latter does not acknowledge that the thought might be reflecting a truth that exists in reality. In hindsight, this is likely the reason that I decided not to try to engage Jack in cognitive defusion after he suggested that the distress he felt following his dog's death made him a callous person and a bad brother and grandson; saying "it's just a thought, let it go," would have likely been ineffective, as Jack may have been hesitant to ignore a highly distressing proposition that had not yet been disproven. Similar to how one might be hesitant to turn their back on a tiger that has not yet been shown to be tame.

On the other hand, beliefs that the individual has already found to be unrelated to reality (i.e. the relational frame has already been shown to be spurious) might be more effectively impacted by cognitive defusion than cognitive restructuring, as the latter can reintroduce the possibility that the belief is a meaningful reflection of reality (i.e. that the relational frame is real rather than specious, as summarized in the concerns of Hayes, Strosahl, & Wilson (2012)). This

is the reason that I likely made a clinical error by continuing to encourage Jack to continue to engage in cognitive restructuring with thoughts for which the relational frames had already been shown to be specious (i.e. the beliefs (1) that he made the wrong decision by putting Sally down, and (2) that “thoughts and actions (are) equivalents.” (Rassin et al., 1999, p. 231). By asking Jack to revisit these beliefs, I was therefore suggesting that the relational frame between the beliefs and reality may hold meaning. Jack’s engagement with these questions may have therefore interfered with the work he had done previously in therapy (i.e. learning that these relational frames were specious) through the process of inhibitory learning.

Furthermore, this theory assumes that thoughts can share a common relational frame. This relates to a central concept within cognitive theory, where automatic thoughts are posited to arise from shared intermediate and core beliefs (Beck, 2011). It is also demonstrated within the aforementioned journalist’s litany of thoughts related to her own inadequacy, which we have already posited share a common relational frame (i.e. that her thoughts of inadequacy are reflective of the reality of her inadequacy). This can also be seen within the previous instance of Jack and Sam’s anxiety-provoking thoughts, in which there was a common belief granting power to the relational frame, namely that thoughts and actions are equivalent. While each specific anxiety-provoking thought had not been addressed in each of these clinical scenarios, the relational frame that they shared had. Continuing to address the beliefs therefore acted against the learning that had been achieved throughout therapy, reinforcing the relational frame in the manner feared by Hayes, Storsahl, and Wilson (2012).

Another way of understanding this concept is to apply the theory of inhibitory learning, or the concept that old learning does not go away but is instead “inhibited” by new learning (Craske et al., 2014). In this scenario, inhibitory learning theory suggests that once a relational

frame has been shown to be specious, continuing to engage with the content of the thought (i.e. continuing to use cognitive restructuring) will cause the individual to maladaptively “learn” that the relational frame may actually hold meaning. However, if the relational frame has not yet been shown to be specious, then engaging with the content of the thought (i.e. using cognitive restructuring) will adaptively “inhibit” the idea that the relational frame holds meaning. This framework may explain the previously mentioned research of Forman et al. (2007a), who found that cognitive defusion was more effective than cognitive restructuring at reducing both chocolate cravings and consumption for individuals who were more influenced by the presence of food (i.e. scored higher on the Power of Food Scale, or PFS). For such individuals may have already had experience seeing the relational frame between their cravings and reality as specious (i.e. “My desire for food does not mean that I need to eat.”), thereby causing cognitive restructuring to be contraindicated.

In other words, cognitive restructuring allows the possibility that the relational frame may be specious, or it may hold meaning. It will therefore provide inhibitory learning on whatever belief is currently present (i.e. that the relational frame is meaningful, or that it is specious). Cognitive restructuring is therefore best implemented in scenarios where the predominant belief is that a maladaptive relational frame is meaningful. In contrast, cognitive defusion only allows that the relational frame is specious. It therefore is best implemented in scenarios where this is also the predominant belief of the individual and may prove less effective in scenarios where the relational frame is still believed to be meaningful.

The primary implication of this framing of cognitive defusion and cognitive restructuring is that it suggests that it is crucial to have an accurate understanding of the client’s perspective on the relational frame connecting their distressing thoughts to reality, and to select interventions

based on the perspective that is being activated at that point in time. This principle-based approach reflects the aforementioned emphasis on, “What treatment, by whom...under which set of circumstances?” (Paul, 1967, p. 111) and provides an argument for making this question the guiding lens through which to view practice.

This emphasis on “when, and for whom” also advises that clinicians consider their own abilities and the preferences of the client when selecting an intervention (Falender & Shafranske, 2016). It therefore need not be the case that a clinician become adept at both cognitive restructuring and cognitive defusion and force them on all of their clients. Instead, he or she might find language within their chosen orientation (i.e. CBT, ACT, or any other intervention) that addresses the functional needs detailed above. It has already been alluded to throughout this paper that there are a number of ways of communicating the same concept using different theoretical languages, and this is no exception. ACT’s emphasis on values could be seen as a way of targeting the content of a thought, while cognitive theory’s reference to core beliefs provides a way of challenging a relational frame without directly engaging with the content of the thought (Beck, 2011; Hayes, Strosahl, & Wilson, 2012).

A therapist practicing cognitive theory could therefore encourage a client who is reengaging with the same relational frame that had been addressed multiple times during therapy to instead view their thoughts as “the same old unhelpful core belief that I’ve fallen into time and time before.” Similarly, a therapist practicing ACT might advise a client who appears to be struggling with letting go of a new, unaddressed relational frame (e.g. perhaps the aforementioned journalist finds confidence in her job, but now looks back on her life and fears that she neglected her family at the expense of her career) by advising them to return to their values, thereby engaging with the thought without moving outside of the theoretical language.

Additionally, situations in which the clinician and client are comfortable using both languages (e.g. the aforementioned scenario of Sarah, who seemed comfortable alternating between arguing with her thoughts and telling them to “shut up”) might find confidence in doing so without fearing that they are using contradictory interventions.

To return to the initial framing of this study, it is important to note that the qualitative nature of this study causes all of its speculations to remain speculative without further quantitative research. However, this framework could be studied by future researchers, perhaps by providing instruction on how to select such interventions (whether from an integrationist or purist approach) and comparing these outcomes against those in which interventions are selected more mechanically. Just as with Jack, who I misdirected due to a lack of insight into how to make this selection, our interventions can only be improved if we understand why they are working.

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Appendix A

Consent Form to Participate in a Clinical Research Study

Title of Study:

*Pragmatic Case Studies of Second- and Third-Wave Cognitive Behavioral Interventions:
Clarifying Mediators of Change*

Principle Investigator: Will Buerger, PsyM

INVITATION TO PARTICIPATE

You are invited to participate in a research study being conducted by Will Buerger, a doctoral student at the Rutgers Graduate School of Applied and Professional Psychology. Mr. Buerger is both the researcher and the clinician in the present psychotherapy research project, which is part of his dissertation. This consent form contains information about the study that Mr. Buerger will go over with you. You will have the opportunity to ask questions and have them answered. When all of your questions have been answered, you will be asked to sign this consent form if you agree to be in the study. A copy of these forms will be given to you to keep for your records.

PURPOSE

The purpose of this study to clarify the similarities and differences between two types of cognitive behavioral interventions, namely cognitive restructuring and cognitive defusion. This process requires the clinician to closely review all audio recordings and detailed session notes from the course of treatment, in order to monitor and analyze the active mechanisms of each of these therapeutic interventions. The study will attempt to identify similarities and differences in these two interventions, so that future clinicians will be able to identify which intervention is called for in a particular clinical scenario.

PARTICIPANT SELECTION

Between 1 and 3 subjects will be selected to participate in this study. You have been selected for this study because you have engaged with either cognitive restructuring or cognitive defusion techniques during your involvement with the Anxiety Disorders Clinic.

Subject's Initials _____

PROCEDURES

To participate, you must be willing to have your therapy sessions and accompanying progress notes analyzed by the primary investigator.

RISKS

If you choose to participate in the study, you will not be exposed to any significant risks. You might have concerns regarding the confidentiality of the information you shared during the course of therapy, information which is often sensitive in nature. However, such information is considered highly confidential, and will only be referred to if (1) it helps clarify the difference between cognitive restructuring and cognitive defusion, and (2) it can be described in such a way that the subjects would not be able to be identified based on the information provided.

Additionally, the investigator will take every precaution to minimize this risk (see Confidentiality below). In addition, your participation in this study in no ways prejudices any future involvement you may have with the Rutgers Anxiety Disorders Clinic.

BENEFITS

The perceived benefits of this research is that future clinicians will be able to more effectively treat their clients, especially those who are seeking to clarify whether to implement a cognitive restructuring or cognitive defusion intervention. The purpose of this study is to clarify the similarities and differences in the active mechanisms of these treatments, so that treatments can be adapted or improved to the benefit of the client.

ALTERNATIVE TO PARTICIPATION

Your participation in the present study are voluntary, and refusal to participate will involve no penalty or loss of benefit to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. Additionally, your ability to return to/continue therapy at the Rutgers Anxiety Disorders Clinic will not be affected by your decision to participate.

CONFIDENTIALITY

The information in the study records will be kept strictly confidential within the limits of the law. Any data collected will be stored securely in a locked cabinet and restricted-access computer and will be made available only to the researcher (and, in case of emergency, other clinic staff) unless you give permission in writing to do otherwise. Any session audio recordings will be de-identified using a number identifier, with only the

Subject's Initials _____

treating clinician access to this information. In addition, any recordings will be erased no later than April 2017. Session notes and treatment summaries will be kept on file at the Anxiety

Disorders Clinic following Clinic procedures and all relevant national, state, and local laws. Finally, all references to you in oral or written reports will be carefully disguised so you cannot be linked to the study.

COST

There are no additional costs associated with the study, as it will be following a typical course of treatment for a client at the Anxiety Disorders Clinic.

CONTACT

If you have questions about the study or the procedures, you may contact the Principal Investigator, Will Buerger, at the Graduate School of Applied and Professional Psychology of Rutgers University, at 152 Freylinghuysen Rd, Piscataway, NJ, 08854, phone number (585) 542-9718. If you would like a summary of the results of the study, please contact the researcher at the above address and contact information. If you have any questions about your rights as a researcher subject, you may contact the Sponsored Programs Administrator at Rutgers University at:

Rutgers University Institutional Review Board for the Protection of Human Subjects Office of Research and Sponsored Programs 3 Rutgers Plaza New Brunswick, NJ 08901-8559

Tel: (848) 932 – 0150 Email: humansubjects@orsp.rutgers.edu

WITHDRAWAL

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty. You may refuse to answer any questions with which you are not comfortable. If you would like to withdraw from the study, please discuss this with the clinician/researcher.

Please sign below if you agree to participate in this research study. You will be given a copy of this form to keep.

Parent/Guardian's Signature

_____ Date _____

Investigator's Signature

_____ Date _____

Appendix B

Outline

1. Proposed differences/schisms/infighting
 - a. ACT
 - i. Overview of techniques/proposed differences
 - ACT overview; tenets and techniques
 - Also, implicit and explicit distinctions from more “traditional” forms of CBT
 - a. *“Why did it take ACT so long to become popular, given that as long ago as 1986 there were randomized controlled trials showing it to be equivalent or superior to traditional cognitive behavioral therapy (CBT) for treatment of depression?” (ACT made simple, p. 33)*
 - ii. Relational Frame Theory (RFT)
 - Book: Barnes-Holmes, Hayes, Barnes-Holmes, & Roche, 2001
 - *“ACT rests on ...(RFT), a theory that now has over one hundred and fifty published peer-reviewed articles supporting its principles.” (ACT made simple, p. 2)*
 - A key assumption of RFT is that “cognitions (and verbally labeled or evaluated emotions, memories, or bodily sensations) achieve their potency not only by their form or frequency, but by the context in which they occur. (Hoffmann & Asmundson, 2007, p. 4)
 - *Include criticisms? Question of how far to dive into this topic. Only pertinent if ultimately can be used as another demonstration of the way in which semantics allow different lens through which to view the same phenomenon (here being verbal behavior). One potential source of criticism/elaboration, Palmer, 2004*
 - b. “Traditional” CBT
 - Question of whether they actually possess different mediators
 - a. *“Future research will need to examine whether ACT techniques target different mediators of treatment change than certain CBT techniques.” (Hoffmann, 2008, p. 284)*
 - b. *“As the social cognition literature suggests (e.g., Tajfel, 1982), group comparisons tend toward amplification and dichotomization of differences between one’s own group and an outside group. Comparisons of ACT and CBT sometimes reflect this tendency.” (Arch & Craske, 2008)*
 - Proposed Unique Mediator #1: utilizing different emotion regulation strategies
 - a. i.e. different stages of the emotion regulation process (Hoffmann, 2008; Hofmann & Asmundson, 2007)
 - b. Suggests that the difference lies in the point at which each intervention seeks to intervene. Also, grants the philosophical/epistemological differences.
 - i. *“Aside from differences in the philosophical foundation, the critical difference between CBT and ACT on the strategic level is that CBT techniques are primarily antecedent-emotion focused, whereas ACT and other mindfulness approaches are primarily response-focused.” (Hoffmann & Asmundson, 2007, p. 2)*
 - Proposed Unique Mediator #2,3,4...
 - a. *Provide alternative mechanisms, perhaps as a way of already attacking the idea that they are separate and distinct?*
 - b. *“CBT researchers have proposed mechanisms ranging from reductions in the number of negative thoughts and worries, modification of anxiety and fear-related beliefs/schemas, increases in perceived control over anxiety-related symptoms, and reductions in behavioral*

avoidance.” (Arch & Craske, 2008, p. 273)

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- c. Summary: differences in proposed mediators within ACT and CBT
 - i. Overview of concept of mediators
 - *“Mediators are variables measured at baseline, mid-, and posttreatment that identify why and how a given treatment works (Kraemer, Wilson, Fairburn, & Agras, 2002).” (Arch & Craske, 2008, p. 271)*
 - ii. Go over proposed mediators
 - ACT says is an ability to separate from thoughts, CBT says is an ability to restructure these thoughts.
 - (pull/reference back to quotations provided above)
 - *“CR and CD seem to be distinct from each other. In CR negative cognitions are targeted in a logical disconfirmation process and are subsequently changed. In contrast, in CD the content of thoughts is not directly challenged, and instead clients are encouraged to accept the occurrence of the thoughts without attempting to modify them.” (Yovel, 2014, p. 490)*
 - iii. Role of schisms/infighting
 - Use to demonstrate the individuals are perceiving significant and fundamental differences between these two constructs
 - Also make clear that while the frustration seems to point to some discomfort with these differences, most authors come short of suggesting that the proposed differences are invalid. Instead, only the way they are communicated.
 - a. *“Unfortunately, however, many ACT proponents claim that ACT and ACT techniques are incompatible with the CBT model on a fundamental level. Instead of referring to mindfulness-oriented CBT or acceptance-based CBT approaches, the basic CBT model is rejected and replaced by the so-called third wave treatments that are based on post-Skinnerian and behavior-analytic models.” (Hoffmann, 2008, p. 284)*
 - b. *“Finally, a request: Let us please abandon the terms new wave and third wave. Science is a continuous process of growth and expansion. Waves just come and go. They are fun and can make you wet, but they have nothing to do with science and they do not help our patients.” (Hoffman, 2008, p. 284)*
 - c. *“However, many of these presumed weaknesses of CBT are based on incorrect perceptions about the nature of CBT.” (Hoffmann & Asmundson, p. 2)*
 - d. Extant literature on these proposed mediators within ACT and CBT
 - i. Forman (2007)
 - ACT vs. CT in college counseling for depression, anxiety, quality of life, life satisfaction, and clinician rated global functioning. Found *no significant differences* between ACT and CT on any of these outcome measures
 - However, some mediator analysis
 - a. *“Specifically, changes in “experiential avoidance,” “acting with awareness,” and “acceptance” mediated changes in the ACT group relative to the CT group, whereas “describing” and “observing” one’s experience appeared to mediate outcomes for the CT group.” (Arch & Craske, 2008, p. 273)*
 - ii. Deacon (2011)
 - CD vs. CR in a sample of individuals distressed by negative thoughts about their body shape. Both produced substantial improvements that “generalized well beyond the specific thoughts

targeted for treatment.”

- Importantly, clear differences in treatment process, with CD obtaining more immediate results, and CR more prolonged, slow improvement. CR was also more helpful in the in-the-moment homework assignments
- a. *“As hypothesized, defusion produced larger reductions in body image concerns immediately following the rationale and training. Our findings suggest that practicing this technique with self-referential negative thoughts in the context of a cognitive defusion rationale produces immediate and meaningful changes in the emotional impact of the thoughts and related stimuli.” (Deacon, 2011, p. 229)*
- b. *“Although participants receiving cognitive defusion largely maintained their improvements following the homework week, there was little apparent benefit of using this technique to cope with negative thoughts in the natural environment.” (Deacon, 2011, p. 229)*
- c. *“These findings are consistent with the notion that the benefits of cognitive restructuring increase with repeated practice (Beck et al., 1979).” (Deacon, 2011, p. 229)*
- d. *The cognitive defusion and cognitive restructuring techniques substantially reduced the perceived accuracy of negative body image-related thoughts. As hypothesized, a decrease in the accuracy of the thought of being fat was associated with better outcomes in each condition. (Deacon, 2011, p. 229)*
- e. *“As predicted by theoretical accounts of ACT processes (Hayes et al., 2006), participants in the cognitive defusion condition rated the thought of being fat as less important, and this decreased importance was a significant, unique predictor of reduced distress in response to the thought of being fat. The opposite pattern of findings was evident for cognitive restructuring. Participants in this condition rated “fat” thoughts as more important, and this greater importance significantly predicted less fat distress.” (Deacon, 2011, p. 229)*
- iii. Yovel, 2014
 - Participants recalled negative autobiographical events, ruminated, then implemented either CR or CD
 - Similar outcomes, however (again) endorsed utilization of CR and CD strategies were as expected
- iv. Forman, 2012
 - 174 students at a university clinic, measured
 - Results:
 - a. Mediators were endorsed as predicted
 - i. *“Specifically, movement toward cognitive and affective change strategies (e.g., challenging and restructuring dysfunctional cognitions, distraction from unhelpful thoughts and feelings) facilitated outcome for those receiving CT, whereas movement toward the utilization of psychological acceptance strategies (e.g., viewing thoughts and emotions as acceptable as they are, with no need to alter or reduce them) facilitated outcome for those receiving ACT.” (p. 351)*
 - b. *However, actual measurements of dysfunction and defusion were equal for both!
 - i. *“Decreases in self-reported dysfunctional thinking and increases in patients’ self-reported ability to step back psychologically from their thoughts and view them as mental processes rather than absolute truths (i.e., cognitive defusion) was an equivalent mediator for both treatments.” (p. 351)*
- v. Moffitt, 2012
 - Effectiveness of CR and CD in resisting food craving

- *CD came out as more effective
 - *“Consistent with these expectations, abstinence from chocolate was highest in the defusion group, with participants being over three times more likely to abstain from chocolate than participants in the restructuring group. Also as expected, participants in the CD group reported greater reductions in external eating and increased personal responsibility for eating behaviours than the restructuring and control groups, and greater reductions in overindulgence during the study week than the control group.” (p. 85)*
2. Alternative Perspective
- a. Issues with extant literature
 - i. Issue of wording/“Teaching to the test”
 - *“Assessing the same mediators across both treatments, including measures that are hypothesized as specific to each, facilitates the examination of shared and distinct processes of change across ACT and CBT.” (Arch & Craske, 2008, p. 271)*
 - a. However, the issue with this approach is that may use different words to measure the same construct. Therefore, may simply be “teaching to the test.”
 - Stating that thoughts are to be separated from does not in itself change their label, and changing the thought process changes your relationship to them
 - a. Therefore, process of practicing explicitly with counter-thoughts is the same as in ACT, where it is simply “this is just a thought”
 - b. *“For example, in order to practice cognitive restructuring, patients must achieve a degree of psychological distance from their cognitive experience in order to observe and analyze it.” (Forman, 2012, p. 351)*
 - Additionally, the eventual goal is to separate from the thought, almost automatically, even in CBT
 - a. (find citation for this concept; Beck?)
 - ii. Teaching to the test continued; individuals may not actually be able to identify that which changed within them, as changes occur even when they are not explicitly addressed.
 - *“In a randomized controlled trial for social phobia, Hofmann (2004) found that changes in estimated social cost from pre- to posttreatment mediated reductions in social anxiety at posttreatment and six-month follow-up in the CBT group. The behavioral therapy group showed a similar pattern of results except that the social cost mediation analysis was nonsignificant at follow-up. Hence, cognitive mediation of treatment outcomes occurred in the absence of explicit cognitive strategies for the behavioral therapy group.” (Arch & Craske, 2008, p. 273)*
 - iii. Also, point out that these need not occur at exactly the same time, or with exactly the same efficacy
 - problems with showing differences in mediators by demonstrating differences in outcomes; same mechanism could be introduced at different points, and with different effectiveness
 - a. (this argument only becomes pertinent if you find someone who makes it. surely will, tag for later)
 - i. (Deacon, 2011?)
 - ii. (Arch & Craske, 2008?)
 - 1. *“If ACT and CBT demonstrate different pathways and processes of change, do they differentially impact outcome? Or are these two therapies simply different ways of arriving at the same level of symptom and overall life improvement?” (Arch & Craske, 2008, p. 274)*

2. *“Is there a window of critical timing for measuring mediators in ACT and CBT, and is it the same window?” (Arch & Craske, 2008, p. 272)*
- iv. More general issue that proposed mechanisms have often been shown to be unsupported
 - Pertinent? Or attacking an argument that I don’t need to make?
 - If pertinent, Mogg et al., 2001, as in Arch & Craske, 2008
- b. Proposed alternative mechanisms
 - ACT: Thought → Structural Change → (Accompanied Content Change)
 - CBT: Thought → Content Change → (Accompanied Structural Change)
 or
 - ACT/CBT: Thought → Content/Structural Change
- a. The essential question is therefore can you separate the structural quality of a thought from its content?
 - Demonstrate through case studies
3. Case Studies
 - a. (To be determined)
 - b. Client A
 - i. (Traditional CBT Case)
 - (PCS structure/overview)
 - highlight traditional CBT epistemology/reasons this approach was adopted for this particular client
 - c. Client B
 - i. (Traditional ACT/3rd Wave Case)
 - (PCS structure/overview)
 - highlight traditional ACT epistemology/reasons this approach was adopted for this particular client
 - a. potentially an OCD client? Could be used as a way to work into the reasons certain clients are more effectively treated using certain orientations. Then again, may be better to return to later, since almost always do exposures.
 - d. Implications of Case Studies
 - i. Differences are largely semantic
 - However, these semantic differences matter
 - a. Case of OCD
 - i. Pull in harm reduction analogy? For some individuals, substance (i.e. rumination/restructuring) is simply too dangerous to touch
 - ii. Differences are not exclusively semantic
 - TBD, but will most likely make this argument. If only to point out that are occurring at different paces (i.e. the “training” phase in CD is shorter)
4. Implications for the field (Conclusion/Discussion)
 - a. Largely TBD.
 - b. However, will most likely that these differences are largely semantic in nature, and that what is really occurring is the *practiced relabeling of aversive mental phenomenon as just that, followed by disengagement, and enhanced by the increased behavioral activation which accompanies it.*

- c. Implications for interpreting research, as common processes imply that findings should also generalize.
- d. Implications for the field as the infighting referenced now appears somewhat unnecessary
- e. Implications for the future of research, as the question is what *processes* occur, rather than what *treatment* is best (tie into RDoC)