The Future of Cognitive Therapy

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A volume honoring the memory of Scott Lilienfeld by necessity would critically consider the future of cognitive therapy. It is not because one emphasis of his work was on the benefits and limitations of cognitive therapy, but because Scott focused on errors in thinking that might lead clinicians to apply methods unsupported by science, regardless of how well-meaning they may be. The scope of work on these biases in clinical practices ranges from influential volumes covering the entire corpus of clinical practice (i.e., Lilienfeld et al., 2015) to highly specific appraisals of methods with dubious scientific merit (i.e., dolphin-assisted therapy for autism; Marino & Lilienfeld, 1998).

While Scott was generally favorable toward cognitive therapy (or, more broadly, cognitive-behavioral therapy), he noted that clinical psychology, like all health sciences, should be attentive to the potential that any treatment may have adverse effects, and thus would be suitable for critical scrutiny (i.e., Lilienfeld, 2007). One of us (DM) had the opportunity to co-author works with Scott, and the experience had a profound professional impact. One central feature to our collaboration was identification of cognitive errors and logical fallacies. And it is this central theme that is the core of the present chapter. Specifically, the aim of this chapter is to honor Scott's legacy by discussing how cognitive therapy must include an explicit role for logical fallacies, and methods for clinicians to avoid them, in delivering treatment. This includes an expanded role for examining the connection between language and human cognition. This connection is well known in other sciences (i.e., linguistics) but generally deemphasized or ignored altogether in the training of cognitive therapists.

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Cognitive Therapy: A Brief Overview

Cognitive therapy in its current form is built on two complementary frameworks. One emphasizes the identification of thinking errors that individuals make in reaction to everyday situations. The dominant conceptual work underpinning cognitive therapy comes from Beck et al. (1979), Ellis (1962), and Meichenbaum (1977). While there are distinctions among the three conceptualizations from Beck, Ellis, and Meichenbaum, the core feature is identification of specific spontaneously occurring (i.e., "automatic") maladaptive patterns of thinking, and guiding clients to alter these patterns. The underlying premise is that the spontaneously occurring thoughts and interpretations are influenced by more deeply held (i.e., "core") dysfunctional beliefs and ideas, and that when a given situation (e.g., a poor grade) is interpreted in light of such cognitions (e.g., "I will never amount to anything"), it spurs distress (e.g., depression). Accordingly, distress is alleviated through therapeutic challenges to the veracity of these patterns of thinking. Collectively, the advent of this approach heralded the "cognitive revolution" that swept through the broader field of psychology in the 1960s and 1970s and even turned some behavior therapists into cognitive-behavior therapists. Detractors suggested that the arrival of the cognitive revolution was simply a reification of hypothetical constructs (i.e., Greenwood, 1999), whereas others modified their laboratory theories to account for the causal role ascribed to thoughts (such as the learned helplessness theory of depression; Alloy et al., 1984).

A central feature in cognitive therapy, as described by Beck, Ellis, and Meichenbaum, is to identify and isolate words and phrases that may emerge from daily events. These words and phrases in turn lead to emotional reactions. To facilitate treatment, these words and phrases are targeted by the clinician, and clients are instructed to challenge these in their daily lives through direct disputation from evidence. Thus, if a client engages in "black or white thinking," they would be trained to identify a *range* of options rather than focus exclusively on the polar extremes. Clients who might "discount the positive/amplify the negative" would be taught to understand that the negative side of an argument comes with possible benefits that have been overlooked (discounted). For "overimportance of thoughts," a client would be guided to illustrate how thoughts need not be heeded or may not be indicative of anything about the client's personal characteristics. These are just a few of many ways that cognitive therapists might aid clients in challenging and correcting cognitive errors.

Cognitive therapy, in the form described by Beck, Ellis, and Meichenbaum, came to be fully integrated into behavior therapy when experimental and treatment research showed that it was difficult to separate cognition from behavior. On the one hand, cognitive interventions, such as behavioral experiments (to test the validity of old and new ways of thinking), often include features that resemble exposure therapy, a behavioral technique (i.e., Bennett-Levy et al., 2004). On the other hand, direct behavioral interventions have been shown to lead to changes in cognitive distortions (i.e., in OCD; Abramowitz et al., 2005). In its current form, cognitive therapy has been extensively applied, although presently empirical support

emphasizes the combination of cognitive therapy with behavioral therapy (Newman et al., 2021). On closer inspection in the research literature, there is not as much evidence to support the sole use of cognitive therapy as its supporters might assert. For example, in a recent patient-level meta-analysis, Furukawa et al. (2021) found that Internet-delivered cognitive therapy had an effect size no different from other non-specific therapies. Further, the clinical practice guidelines for depression published by the American Psychological Association concluded there was insufficient evidence to recommend cognitive therapy (McQuaid et al., 2019). This is significant considering that depression was the first condition for which cognitive therapy was systematically evaluated, in comparisons against medication (discussed in Hollon & Beck, 2013).

As research into cognitive distortions grew, it was increasingly recognized that not only were there spontaneously occurring thoughts, which may give rise to emotional reactions, but also environmental factors prompted a bias toward (or away) from accurate information. This in turn leads to biases in how information is encoded, processed, and recalled, which in turn impact judgments. Clinical scientists drew on basic cognitive experimental work to adapt laboratory methods in assessing biases in attention, memory, and judgment in relation to different emotional states (i.e., MacLeod et al., 1999). The careful accumulation of principles of cognitive biases that distort memory processes and associated downstream behaviors influenced some practitioners of cognitive therapy as described by Beck, Ellis, and Meichenbaum by highlighting ways to educate and target anticipated cognitive errors that could in turn be targeted in treatment. More recently, computer-based interventions to target these automatic processes (i.e., attention retraining, Cisler & Koster, 2010; Knowles et al., 2016; Price et al., 2016) have been developed with some beneficial effects on anxiety and depression (Hallion & Ruscio, 2011).

Training in Cognitive Therapy

As with any psychotherapeutic method, training in proper implementation is crucial for it to benefit the client. Many clinicians report that they practice cognitive therapy in some form. For example, in a survey of over 2000 therapists, approximately 69% reported using cognitive therapy (discussed in Brown, 2013). As noted earlier, cognitive therapy has increasingly been subsumed under the more general cognitive-behavioral therapy heading, and as a result it is more difficult to determine proportions of clinicians who administer cognitive therapy alone. Indeed, the merging of cognitive therapy with behavior therapy was viewed as a natural outcome given the methods of cognitive therapy involve at least some behavioral targets (such as via behavioral experiments; i.e., Bennett-Levy et al., 2004), and since behavioral interventions often include some cognitive interventions to address reticence for engagement (such as in exposure therapy; Richard & Lauterbach, 2006). However, it is reasonable to assume that cognitive therapy may be practiced more frequently than behavior therapy among self-described CBT practitioners. One

reason for this assumption is that, at least in the case of anxiety alleviation, clinicians often express reservations due to typically unfounded concerns about risks to clients (Farrell et al., 2016).

Aside from the aforementioned behavioral experiments, cognitive therapy includes several therapeutic strategies that require considerable training in proper implementation. At its core, the approach involves cognitive disputation and restructuring. Cognitive disputation involves identifying dysfunctional beliefs held by the client, and challenging these beliefs for their accuracy. For some clinicians early in their training or who are new to this approach, cognitive disputation could be simply interpreted as identifying ways the client is wrong in their beliefs. This would be one central clinical error, and has been identified as a factor in client dropout (Kim et al., 2016). The clearest way to avoid clinical errors of this sort is through careful training. In order to properly apply cognitive therapy, it would be maximally effective to begin early in graduate training, through coursework, and follow with clinical applications at each level of training. As there is increasing recognition that many therapists did not have the opportunity to receive formal training in cognitive therapy, post-graduate training has begun to be offered, in some highly specialized areas. For example, the International Obsessive Compulsive Disorder Foundation has a behavior therapy training institute, and a corresponding expert consultation program, to ensure more clinicians can deliver specialized care for the disorder. There has been a recognition that structured training, and not just attending a few workshops, is essential for the health of the broader cognitive-behavioral therapy movement (McKay, 2014).

Looking to the Future

Language and Thought in Cognitive Therapy—Client Targets

Considering the fundamental unit of intervention in cognitive therapy is the adjustment of words and propositions, it is natural to expect that cognitive theorists would stress the linguistic models of how language itself shapes thought (such as the Sapir-Whorf hypothesis; discussed in Joseph, 1996). Interestingly, in preparing this chapter, there was comparably little found to suggest the cognitive theorists who formulated the clinical interventions that forms the basis of cognitive therapy were influenced by linguistic models of language and thought. The closest found was in Ellis (2001), who advocated a specific mode of speaking, called E-Prime (or E′). E′ emphasizes that, by eliminating the verb *to be* and all its conjugations, one can think and write with greater clarity. It also, according to Ellis, removes the possessive qualities on an individual's identity, freeing them for a wider range of personal understanding and growth. To illustrate, if one says, "I cannot do that because it is not in my nature," the verb *to be* (the word "is" in this case) is doing the emotional work in the self-statement and serves as a behavioral inhibitor. Editing the

self-statement phrase to eliminate *is* would lead to a statement more about preferences rather than a veridical and defining quality. To be clear, the E′ movement aims to minimize the use of the verb "to be" and to narrow the way personal pronouns lead to possessive qualities. This would not include necessarily specific personal pronoun references or physical attributes. It demands of the speaker that language rely on situational grammar rather than possessive qualities. To further illustrate, assume someone feels anxious in a situation. They might be inclined to state "I am an anxious person," which gives them the overriding quality of being anxious. Regardless of the frequency with which one might feel anxious, E′ would recommend the speaker refer to their anxiety state as being a result of a situation, rather than due to an enduring quality.

The E′ approach to addressing emotional distress has been investigated in a small body of research. For example, Oltean and David (2020) found that the more individuals relied on the verb *to be*, the more they endorsed general negative affectivity. In a laboratory investigation of anger reactions, participants who had anger induction with greater frequency of the verb *to be* (i.e., qualities of the perpetrator) showed greater levels of anger responses and more difficulties in recovering from anger than those with an E-Prime-based induction (David, 2013). More work is called for to further determine the emotion eliciting and maintaining features of this highly specific language concept, but it suggests that it is not merely semantics to address how one "speaks to themselves" when it comes to therapy.

Highlighting the dimensions of language itself in shaping thought calls attention to granular elements of how a client might talk to themselves (i.e., think) that therapists could harness in treatment. As cognitive therapy is, in the end, highly oriented toward self-talk, drawing on the science of linguistics appears to be an essential component. Rational Emotive Behavior Therapy (REBT), a form a cognitive therapy, has emphasized that emotional distress emerges from demanding inner language, such as the use of the words "should," "ought," and "must" (Ellis & Harper, 1975). To address this problem, Ellis directly targeted these specific words and urged clients to re-state their inner talk. So, a client might say "Well, drivers really should stick to the speed limit!" to which a REBT therapist might recommend the client reword to "It would be preferable that drivers stick to the speed limit." This highly structured targeting of inner language forms the basis of cognitive disputation in the REBT model. In a more general way, Beck's approach to cognitive therapy emphasized identifying the specific beliefs that would correspond to emotional distress and challenge the central premises of that thought. Sticking with the speed limit example from above, in cognitive therapy derived from Beck's model, the therapist might urge the client to ask themselves whether it is absolutely required to adhere to the speed limit, or could there be a band of acceptable violations to this rule (such as emergency personnel, or maintaining the flow of traffic even if it is slightly above the limit). These general approaches to disputation have been the basis for cognitive therapy. However, these also assume that specific words, and their use in some sentences, evoke emotional reactivity.

The aforementioned analysis of cognitive therapy assumes a primarily language-based emotional experience, and implies deliberate thought. However, even

linguists note that some thoughts are so immediate that there is limited language-based mediation (Pederson, 2010). If cognitive therapy is to continue to advance, it appears that a necessary direction will be to address the fact it has always been a targeted inner-language-based intervention, one whose primary aim is to help clients "edit" their spontaneous and more carefully reasoned thoughts to alleviate emotional distress. Ellis was the most explicit in the extent that treatment was aimed at targeting inner language, including through exercises that directed the client from external statements to inner language with the "rational barb." This exercise involves instructing collaboration between therapist and client in determining a rational alternative to the inner dysfunctional belief. Following this, the therapist states the original belief out loud, and the client counters that belief out loud. After several trials, the therapist continues to state the belief out loud while the client merely whispers the rational counter. Finally, the exercise ends with the therapist stating the belief and the client reciting their rational alternative silently.

There are some mini-movements in mental health care broadly that have attempted to harness linguistic science by shaping emotional experiences through metaphors and metonymy (Eynon, 2002). These movements have not yet caught on, however, possibly given the high degree of conceptual complexity. The delivery of cognitive therapy employing a method reliant on linguistic science would necessarily demand clinicians be capable to monitor the self-directed statements of their clients far more closely than they may already and guide them through a painstaking process of self-editing, both within and between sessions. However, as it appears the basic emotional demands resulting from the everyday use of the verb *to be* appear to have, heading in this direction would be in keeping with the broad philosophical underpinnings of cognitive therapy and would represent an important refinement in the practice. This would tie cognitive therapy directly to recent movements in psychotherapy research and also potentially serve as a unifying framework with other approaches in psychotherapy where language has been examined based on content and emotional processes (i.e., Russell & Stiles, 1979) rather than solely on assumed generalized words and phrases.

Psychotherapy research has emphasized language processes between therapist and client, and that language can be predictive of effective therapeutic processes (discussed in Wiltshire et al., 2020). It would also directly highlight cross-cultural dimensions of how cognitive therapy might be practiced. By expressly and consistently acknowledging the direct interaction between language and thought, clinicians would be sensitized to the unique characteristics of their clients' inner language and associated emotional responses. At the present time, the application of cognitive therapy is often far more general and assumes that clients are likely to experience emotional unrest through a specific set of common words, or the insertion of those words into phrases, such as the aforementioned "should," "ought," and "must" in REBT. However, a more nuanced application of cognitive therapy would assess for putative idiographic words and phrases that might be part of a client's inner language that is in turn the target of disputation.

Recent research would suggest that this linguistic analysis in cognitive therapy has unique predictive value for symptom change. Hernandez-Ramos et al. (2022),

using text message content analyses, showed that depression-oriented language diminished as symptoms remitted among Latino participants. Further, the specificity of text content associated with depressed language was associated with level of participant fluency in an English-language society. Research of this sort could be relied upon to expand the ways to guide therapists in how to help clients edit their inner language in order to better address their emotional experiences.

Language and Thought in Cognitive Therapy—Clinician Targets

As noted here, one aspect of the future of cognitive therapy involves focusing on the interplay between language and thought through what we have termed "self-editing." How the client gets to the point of self-editing to a degree that alleviates emotional distress and leads to behavior change is at the mercy of how the clinician conceptualizes and draws out the self-talk. It has long been recognized that the questions asked by clinicians can lead to conclusions that were presupposed by the therapist rather than represent the presenting clinical problem. This was most evident during the early 2000s when false memory syndrome (FMS) was recognized as a problem spurred by the lines of questions from therapists who assumed their client's psychopathology was due to repressed memory of trauma (discussed in McNally, 2003). The presence of FMS, and how it comes about, suggests that clinicians may fall prey to a range of logical fallacies that interfere with clinical judgment. Confirmation bias is probably the most salient logical fallacy to apply in understanding FMS. Below, confirmation bias, as well as several others, is highlighted in how cognitive therapy may be best advanced.

Scott Lilienfeld recognized the hazards of logical fallacies in everyday practice, as many pseudoscientific practices emerged from problematic assumptions of clinicians. Understanding how our own logical fallacies interfere in treatment decisions was deemed essential and considered an important component of training therapists (Bowes et al., 2020) and for students of psychology generally (Lilienfeld et al., 2009).

There is a plethora of logical fallacies, some which are formally identified and others which represent patterns of thinking that fall into categories (discussed in Risen & Gilovich, 2007). There are several candidate fallacies that would appear ideal for therapists to have top of mind when engaged in treatment.

Confirmation Bias In the course of initial assessment, therapists identify symptoms to be targeted in treatment. In order to craft interventions, this demands identification of putative mechanisms that would inform the treatment conceptualization. In the case of cognitive therapy, this means that therapists must elicit, and possibly infer, beliefs that may result in emotional distress and problematic behavior. In doing so, clinicians are in a position to guide the client to some beliefs that might be viewed as problematic, thus confirming the a priori *beliefs of the clinician* about the underlying cognitive dimensions that might contribute to the presenting problem. This would be an illustration of how confirmation bias might lead clinicians to pur-

sue treatment plans that center of specific beliefs in the client. Training clinicians to be aware of the risks of forming beliefs regarding the client's inner language without adequate support would be useful in guarding against this.

False Dilemma/False Dichotomy In the course of treatment, clients are guided to evidence for or against their primary underlying cognitions that are associated with distressing emotions and behaviors. In this guidance, it would be easy for a clinician to present two opposing situations or concepts, with seemingly few alternatives. For some pliable clients, this could leave out other plausible scenarios that could also be fruitfully employed in alleviating distress. In training cognitive therapists, it would be necessary to demonstrate cognitive flexibility in conceptualizing the presenting client problem and present scenarios in ways that are not rigidly constructed (such as "this, or that" format).

Straw Man Argument This fallacy occurs when someone distorts the position of another person, and then attacks that position as though it were the same as the one stated by the other person. For example, a common clinical situation for individuals with generalized anxiety is that they do not tolerate uncertainty well (Shihata et al., 2016). If a client identifies an area where they may find uncertainty hard to tolerate, a clinician might employ the straw man argument to suggest that additional situations are hard to tolerate and begin to guide the client to challenge those, on an assumption these are applicable. This point might easily fail later when applied by the client, but successive sessions could then be devoted to how the client needs to apply the concepts more rigorously/thoroughly/frequently in the service of alleviating distress. The straw man argument might be employed when clients present problems that clinicians struggle to understand, or how to develop disputation strategies. In order to alleviate the cognitive demand on the clinician, the straw man is a handy method for constructing an argument the therapy can actually dispute. It fails the client, but provides the clinician a way to feel that an intervention was administered. In training clinicians in cognitive therapy, avoiding the straw man argument would involve practice in maintaining focus on the ways problem situations emerge for the clients while avoiding the temptation to stray from the data into areas that would support pre-conceived hypotheses entertained by the clinician.

Confusing Correlations with Causation This occurs when a clinician assumes a causal relation between two events when they merely covary with one another. For instance, it is possible that contamination fear associated with obsessive-compulsive disorder is based on the belief that contaminants are all around, and thus washing must be vigorous to remove the contaminants. That is, the washing is caused by the perception of contaminants. On the other hand, it is also possible the individual was taught that washing vigorously was necessary, without explanation, and later on the justification for the extreme washing was constructed. Thus, the washing and the belief are merely correlated, and the thought is not directly related to the action.

The entire cognitive therapy enterprise is based on training clients to serve as their own scientists to appraise situations for their evidence. It assumes that cognitions have a causal impact on mood and emotion. Therefore, in the cognitive therapy

model, the aforementioned washing behavior due to contamination fear would be defined as emerging from a belief regarding the means to remove perceived contaminants. However, this relation is not always present, regardless of how strongly the cognitive therapist adheres to the theory. Thus, understanding the causal fallacy in addressing client needs is essential for sound and comprehensive care. Training and supervision of therapists to address this fallacy would thus involve strengthening their understanding of correlative relationships, and how to assess for these in lieu of assuming causal relations.

These are some leading logical fallacies for clinicians to guard against, although hardly an exhaustive consideration of the topic. In training future cognitive therapists, it would be instructive to include detailed knowledge and understanding of how an introspective cognitive therapist might watch for these fallacies and consider alternative approaches.

It appears, however, that attention is being paid to the importance of logical fallacies in cognitive therapy, just not by clinicians. Instead, philosophers have turned their attention to errors in thinking and judgment by clinicians (i.e., Irwin & Bassham, 2003; Murguia & Diaz, 2015). It is probably fitting that philosophy has begun to critically examine the central tenets of cognitive therapy from the therapist's side of the room. After all, Ellis drew heavily on the philosophy of Epictetus in shaping his rational-emotive therapy methods, specifically through the statement, "Nothing is good or bad. Only saying so makes it so."

Conclusions

In this chapter honoring the memory of Scott Lilienfeld, we focused on two important directions that might represent the future of cognitive therapy—formal attention to nuances of language in shaping thought and logical fallacies committed by clinicians. Scott's scholarship demanded rigorous thinking and was carefully considered in its development. Thus, these two areas would also truly honor his memory by demanding greater rigor in thought and treatment implementation. Indeed, Scott so carefully considered the innumerable ways clinicians might commit errors in execution and conclusions about treatment benefits that he and his colleagues developed a taxonomy of explanations for describing ineffective therapies and their seeming benefits (Lilienfeld et al., 2014). We hope this chapter impels further work that is inspired by the legacy Scott left behind.

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