How Meaning Is Made: Ambiguity Tolerance as a Central, Operationalizable Concept for Psychotherapy Integration

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Abstract

Ambiguity tolerance has been defined as the ability and skill to hold multiple interpretations and meanings of experience in mind simultaneously. Whereas many effective psychotherapy theoretical approaches appear conflicting and disparate in their focus (e.g., unconscious processes, cognitive distortions, reinforcement, radical acceptance, narratives, emotion regulation, etc.), all work to help individuals expand their understanding of their experiences, that is, to not rely on simplistic, overly personalized interpretations of meaning. This article asserts that successful therapeutic approaches essentially work to increase clients' tolerance of ambiguity (albeit from different perspectives), thereby encouraging them to see the complexity and nuance of their situation rather viewing it as simple, black and white, either/or, or easily understood. Thus, all theoretically grounded forms of psychotherapy increase clients' ability to avoid harm and increase connectedness and growth by helping them broaden their understanding of their past experiences and their current stressors. In spite of this overlap in theoretical models of psychotherapy, it can be difficult to know how to operationalize these similarities in approaches. The authors argue that ambiguity tolerance is a common mechanism in psychotherapy and can be easily operationalized through existing (and user-created) measures. The literature on ambiguity tolerance and related constructs is reviewed, and the authors suggest that greater attention to ambiguity tolerance (as a predictor of individual success and a broader mechanism of change in psychotherapy) will allow for more powerful and effective approaches to psychotherapy as well as greater theoretical integration.

Keywords: Ambiguity tolerance, common factors, theoretical integration

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For decades, researchers have investigated key attributes of psychotherapy outcomes, including client expectancy and motivation and the strength of the therapeutic alliance. This research has moved the field forward dramatically (e.g., Ardito & Rabellino, 2011; Gomes-Schwartz, 1978; Greenberg et al., 2006; Horvath & Symonds, 1991; Martin et al., 2000). Through several meta-analyses (e.g., Barth et al., 2013; Leichsenring et al., 2013, 2014; Luborsky et al., 2003), psychotherapy has been shown to be consistently effective, despite the fact that multiple psychotherapy approaches exist with seemingly conflicting theoretical bases (Bögels et al., 2014; Driessen et al., 2013; Leichsenring et al., 2013, 2014; Steinert et al., 2017). In this article, we propose that a central psychological attribute—one that is well known in affective, social, and industrial-organizational psychology and has shown clear positive outcomes—may have important ramifications for psychotherapy outcome research and psychotherapy integration.

Ambiguity tolerance is generally defined as the ability to hold in mind complex psychosocial information without rushing to judgment or a conclusion about its meaning (e.g., McLain et al., 2015; Norton, 1975). This facet, often defined as a psychological trait, has been associated with several positive outcomes in the workplace, including productivity, the ability to work well in teams, creativity in problem solving, and overall psychosocial functioning. It has also been shown to be negatively associated with discrimination, prejudice, and psychological dysfunction (Chen & Hooijberg, 2000; Katsaros, 2014; Tegano, 1990; Zenasni et al., 2008). Ambiguity tolerance has also been negatively associated with depression, anxiety, and stress and positively associated with social functioning and life satisfaction (Caulfield et al., 2014; Gibson et al., 2019; Lally & Cantillon, 2014). In spite of these consistent findings, this measured trait has been mostly absent in psychopathology research and psychotherapy outcome research.

Furthermore, when viewed not just through the perspective of ambiguity tolerance as a personality trait and disposition but also in terms of how people make meaning from complicated life experiences, ambiguity tolerance may be one of the primary mechanisms by which psychotherapy is effective. Indeed, there is experimental evidence that one's own experience of ambiguity tolerance may be situationally manipulated (e.g., Endres et al., 2015; Gibson et al., 2019; Kruglanski et al., 1991). That is, the process of tolerating ambiguity as a developed skill can be viewed as the attempt to understand one's experience in complex, subtle, multifaceted, and nuanced ways rather than through simple, black-and-white, and either/or dichotomous perspectives.

Our primary thesis is that most psychotherapy concerns itself with helping individuals make meaning of complicated psychosocial information, whether that

be dealing with a job loss, loneliness, a difficult romantic partner, or even a phobic reaction to spiders. Furthermore, the way that meaning is made for individuals—from a spectrum of simple, unidimensional, black-and-white interpretations to complex, multifaceted, and nuanced interpretations of experience—predicts whether they are at risk for psychopathology as well as the outcome of psychotherapy. This spectrum represents both a trait of tolerance for ambiguity and a skill that can be developed and fostered in all successful psychotherapy. We also suggest that all psychosocial experiences are ambiguous but that humans are structured to make meaning of experiences quickly and without effort, often without realizing they are doing so. Nonetheless, the degree to which they see the ambiguity of their experiences is related directly to both their risk for developing psychopathology and its amelioration. Finally, by using existing measures of ambiguity tolerance and coding schemes and observational measures of meaning making—from simplicity to complexity—there is an opportunity for researchers to bridge divergent approaches to psychotherapy.

Ambiguity Tolerance and Psychotherapy

How does ambiguity tolerance relate to psychotherapy? Take the example of a parent of three young children who finds out that their partner of 15 years has incurable cancer. Although most people would agree that this is unquestionably a negative life event—with many layers of complexity and stress to follow—this experience and the understanding of its meaning are quite ambiguous. Many people in this situation will immediately form numerous attributions and narratives about it (e.g., "These horrible things always happen to me—this is how life is," "The kids will never be able to survive this loss," "I will be alone for the rest of my life," etc.) that will persist through the events and challenges to follow. These attributed meanings, which are adopted nearly instantly and not always in direct awareness, are referred to in various theoretical approaches as schemas, pathogenic beliefs, depressive attributions, and automatic negative thoughts, among others. Clearly, there are other possible reactions and thoughts about such a situation (e.g., "I don't know how I will handle this, but I have been through difficult things before"; "I know that I need to be there for the kids so they can figure out how to handle this"; "This will be incredibly difficult, but I know I have to face it each day and make sense of it as it unfolds"), and, of course, many individuals will have both types of thoughts. Although some of the differences described here are due to multiple factors (e.g., current stress or depression, tendency toward optimism/pessimism, previous experiences of loss and adversity, etc.), one of the key differences is the person's disposition toward and/or skill in tolerating ambiguity.

In terms of psychotherapy approaches, we posit that all psychotherapy grounded within a theoretical frame will likely work to help people move away from the absolute, black-and-white views of the former attribution examples toward those of the latter. Of course, the way that various approaches do this may be vastly different. We propose that most psychotherapy approaches seek to help individuals develop ambiguity tolerance by creating nuance, complexity, and a multifaceted perspective on their experience, even if ambiguity tolerance is not the stated goal. By attending more directly to this ubiquitous dimension and using existing ambiguity tolerance measures, we think it is likely that a particular approach will be strengthened in this area, and there will be a greater possibility of predicting who will likely benefit from psychotherapy.

In this article, we define ambiguity tolerance; review the critical findings on it and related constructs in affective, personality, and industrial-organizational psychology; summarize the related constructs in psychotherapy outcome research, including how the therapeutic alliance is crucially related to ambiguity tolerance; review how ambiguity tolerance is related to various effective psychotherapy approaches; differentiate it from other similar constructs; and finish with a summary of existing measures and possible important future directions.

Ambiguity Tolerance: Definitions and Findings

Ambiguity tolerance as a construct was first proposed over 70 years ago by Dr. Frenkel-Brunswik (1948, 1949) as a personality and cognitive-perceptual trait that could help researchers understand mechanisms involved in ethnic prejudice and stereotyping. Since then, it and similar constructs have been researched in social-personality psychology (e.g., Haner & Rude, 2015; MacLeod & Mathews, 2012), industrial-organizational psychology (e.g., Eley et al., 2017; Judge et al., 1999; Kuhn et al., 2009; Ma & Kay, 2017), and, to a more limited degree, clinical psychology (e.g., Andersen & Schwartz, 1992). There have been several definitions of ambiguity tolerance over the years, from the concise (e.g., "The tendency to perceive ambiguous situations as desirable," Budner, 1962, p. 49, and "An individual's systematic, stable tendency to react to perceived ambiguity with greater or lesser intensity," McLain et al., 2015, p. 2) to the more elaborate (e.g., "A tendency to perceive or interpret information marked by vague, incomplete, fragmented, multiple, probable, unstructured, inconsistent, contrary, contradictory, or unclear meanings as actual or potential sources of psychological discomfort or threat," Norton, 1975, p. 608). In the various definitions, the construct is thought to be a relatively stable personality trait that is dimensional in nature and forms the basis for how individuals interpret meaning from psychosocial experiences: from

simple, dichotomous, black-and-white interpretations of meaning (low ambiguity tolerance) to complex, nuanced, and multifaceted interpretations (high ambiguity tolerance).

One thing that is clear in the varied and diverse literature on ambiguity tolerance—from correlational, cross-sectional, experimental, and longitudinal designs—is that higher ambiguity tolerance is nearly always associated with positive outcomes. For example, studies in industrial-organizational psychology have shown that higher ambiguity tolerance is related to creativity and problem solving as well as entrepreneurial traits (e.g., McLain et al., 2015; Schere, 1982; Zenasni et al., 2008). In one study of 514 workers from five countries, the self-reported trait of ambiguity tolerance was related to a greater internal locus of control, higher self-efficacy, greater self-esteem, and experiences of positive affect (Judge et al., 1999). In a number of studies looking at ideal fit for medical professionals, researchers found that those higher in ambiguity tolerance were more likely to be resilient and choose more difficult positions (Eley et al., 2017). In other studies, those low in ambiguity tolerance reported more experiences of overall distress and anxiety (Caulfield et al., 2014; Lally & Cantillon, 2014) and negative feelings toward underserved populations or plans to work with underserved populations (e.g., Caulfield et al., 2014; Wayne et al., 2011). Researchers in this field have recently begun assessing how situational factors may increase or decrease the ability to tolerate ambiguity and have found, among other things, that situations that are more ambiguous (such as unstructured interviews) may lead to lower perceptions of ambiguity tolerance (Endres et al., 2015), and where employees perceive less control over their workplace, they may also experience less ambiguity tolerance or report lower levels of the self-reported trait of ambiguity tolerance (Ma & Kay, 2017). In other words, there is evidence that ambiguity tolerance as a personality trait may be malleable based on environment and/or situational factors.

Surprisingly, ambiguity tolerance has not been well studied in psychopathology or clinical psychology research. This means that low ambiguity tolerance has not often been investigated as a risk factor for psychopathology. In a rare exception, a 10-week prospective study looked specifically at ambiguity tolerance and depression and found that individuals who experienced a negative life event and were low in ambiguity tolerance were more likely to develop depression than those who were higher in ambiguity tolerance (Andersen & Schwartz, 1992). One recent study with 290 participants indicated that self-reported ambiguity tolerance was negatively related to depression, anxiety, stress, negative affect, and interpersonal conflict and positively correlated with well-being and social functioning (Gibson et al., 2019). In a second experimental study, it was also found that increasing

participants' tolerance of ambiguity helped them effectively regulate their emotions when recounting past negative experiences (Gibson et al., 2019).

A construct that is related to ambiguity tolerance and has also been framed as an individual difference variable is the need for closure. This was defined by Kruglanski and his colleagues (De Grada et al., 1999; Kruglanski, 1989, 1990; Kruglanski et al., 1991) as the motivational need to come to a decision or firm judgment on a particular situation rather than holding the complexity of the situation in mind before rushing to a decision or judgment. In other words, it reflected a "desire for a definite answer to a question and the eschewal of ambiguity" (De Grada et al., 1999, p. 348). Although this construct has not been as widely studied as ambiguity tolerance, a need for closure is quite similar to a low tolerance for ambiguity. In fact, the Need for Closure Scale has correlated with existing Ambiguity Tolerance measures at > .8, which suggests considerable overlap in these constructs (Gibson et al., 2019). Individuals high in the need for closure have been shown to be more likely to assign and hold on to negative views (such as ethnic stereotypes) than those who are lower in the need for closure and to make a number of cognitive and decision errors (Dijksterhuis et al., 1996; Kruglanski & Freund, 1983). Similar to the industrial-organizational literature, this area of research has shown that a need for closure can also be manipulated by situational factors, including time pressure and self-reported confidence in one's judgment. Both of these increase a need for closure, which can often cause individuals to make more rash and short-sighted decisions.

Another construct that is closely related to ambiguity tolerance is "big picture appraisals" (Haner & Rude, 2015; MacLeod & Mathews, 2012; Schartau et al., 2009), which can be thought of as a specific form of emotion regulation. Research in this area has typically focused on past negative life events (as opposed to focusing on all experiences), and researchers have defined this construct as an awareness of the complexity of one's negative experience in the context of a larger time perspective (e.g., what this experience will mean in 5-10 years), the broader context of one's life in terms of goals and challenges, and the larger connectedness of human experience (Haner & Rude, 2015). In a number of studies, researchers have shown that brief, one-time interventions that focus on the big picture can decrease negative emotion and psychophysiological arousal after recounting a distressing event as well as decrease rumination after an interpersonal rejection. Furthermore, experiencing higher levels of big picture appraisals has been related to fewer symptoms of depression and anxiety (Haner & Rude, 2015; Schartau et al., 2009). This research also dovetails with findings on perspective taking. In a series of studies, Ozlem Ayduk, Ethan Kross, and their colleagues showed that taking a "distanced" perspective on past negative events has numerous mental

health benefits (Ayduk & Kross, 2010; Kross & Ayduk, 2008, 2011; Kross et al., 2012). For example, they showed that seeing one's past negative experience from a distance, "as if it were happening all over again to a distant you," results in several emotion regulation benefits, including decreased distress, lower psychophysiological reactivity, and decreased rumination. These perspectives on how individuals make meaning of complicated and distressing experience helped to create some specificity about what is effective in how individuals regulate emotions effectively through reappraisal (see Gross, 1998).

Self-reported trait measures of ambiguity tolerance and need for closure, early cognitive research in stereotypes, recent research in industrial-organizational psychology, and social-affective work on big-picture and distanced appraisals can seem quite disparate. However, all of these approaches fall under the broader construct of how individuals make sense of their psychosocial environment. We hold that these constructs (both individual difference and situational factors) can be viewed as a process of understanding psychosocial experiences from simple, black-and-white perspectives to complex and nuanced ways. Thus, using ambiguity tolerance as a conceptual model provides a relatively straightforward process for operationalizing how meaning is made.

In fact, there is work outside of psychotherapy that appears to use this way of understanding experience to positively affect change in individuals. Specifically, emotionally expressive writing and written disclosure of emotional experiences have consistently shown that reflecting on and writing about emotional experiences have a number of significant mental and physical health benefits (see Frisina et al., 2004; Pennebaker, 1997; Smyth, 1998; and Ullrich & Lutgendorf, 2002, for reviews). In one meta-analysis of 146 studies, emotional disclosure was shown to be an effective intervention for a variety of populations, disorders, and symptoms. Regarding why emotional disclosure is effective, researchers have come up with a number of conclusions, including about factors related to insight and emotional exposure (e.g., Shim et al., 2011; Sloan et al., 2007). Although this research is not framed as increasing ambiguity tolerance per se, the writing instructions clearly tap into this construct in the broader sense. For example, a typical writing instruction might be: "We would also like you to write about significant experiences or conflicts that you have not discussed in great detail with others. … *You might tie your personal experiences to other parts of your life, like your childhood, your parents, people you love, who you are, or who you want to be.* Again, in your writing, examine your deepest emotions and thoughts" (Sloan et al., 2007, p. 166, emphasis added). In other words, it may be that the underlying mechanism that emotional disclosure (as with the other experimental constructs noted earlier) is

tapping into is the expansion of the individual's understanding of their experience into more complicated, multifaceted, and nuanced thinking.

Related Psychotherapy Outcome Research

Given the consistent positive outcomes for individuals with higher ambiguity tolerance, it is surprising that this factor is not more directly studied in psychotherapy outcome research. Most measured concepts that cut across all modalities in such research only peripherally relate to ambiguity tolerance. One of these is the therapist's interpretation of the client's experience (Rosenzweig, 1936; Stiles et al., 1986). Examples of therapeutic interpretations include psychoanalytic interpretations of the unconscious (Bibring, 1954; Collie, 2008; Epstein, 1994), reality testing, and thought challenging (Christie & Wilson, 2005; Roberts & Kwan, 2018), all of which provide a new frame of reference by which a client can process and understand their experience from a different and more complicated perspective. Bringing in additional perspectives adds to the client's understanding and depth of experience, increasing its complexity and broadening meaning (Shedler, 2010; Strong et al., 2008). In this way, ambiguity tolerance is also related to the concept of mentalizing, which is often defined as the ability to understand why one feels the way one does (Fonagy & Bateman, 2006a, 2006b; Fonagy et al., 2015; Fonagy & Target, 2002; Lecours & Bouchard, 1997). By expanding one's tolerance for ambiguity, many avenues for understanding feelings and experiences open up. These interpretations and perspectives highlight aspects of the experience the client may be overlooking and/or provide new information about the client and their experience. Furthermore, these new perspectives challenge the person to gather new information about their experience, reevaluate their preconceptions, and reintegrate the experience with a new understanding of its complexities (Beitman & Soth, 2006). This then alters the way they perceive new experiences, providing a new lens to understand and make meaning from future experiences.

Similarly, changing a client's expectations is a key focus in many therapeutic modalities (e.g., Duncan & Moynihan, 1994; Greenberg et al., 2006; Stiles et al., 1986). This can be seen, for example, in the corrective emotional experience of psychodynamic theory and exposure therapy as well as behavior modification in cognitive behavioral therapy (CBT). In the former, the goal is to provide a different and safe relationship in contrast to the client's past negative relationships, thereby altering how the person perceives future relationships (Alberti, 2018; Goldfried, 1980; Hartman & Zimberoff, 2004). In the latter, the client confronts the negative expectations or behavioral reactions in a safe space and exposes themselves to

either the feared stimulus or an imagined feared stimulus. They are thereby able to extinguish the paired response and gain a sense of mastery and control over the issue as well as change their expectations about future outcomes (Colori, 2018; Craske et al., 2014). In both forms of therapy, the client experiences a situation in a new way, one that is different from their preconceptions. This invites them to reconsider and change their view of future emotional reactions or outcomes and how they perceive the world.

Additionally, encouraging the client to hold these new positive expectations can help elicit further change. A client's hope and expectation of change has been consistently associated with better outcomes in therapy as well as the increased likelihood of continuing therapy and a greater number of sessions (e.g., Greenberg et al., 2006). Ultimately, the impact of both therapist interpretations and change in client expectations modifies how the client experiences a problem, whether it be old or new (Høglend, 1999). Building the client's ability to hold many facets of an experience allows them to create new meaning from the experience and potentially changes their outlook on future events.

In terms of specific theoretical orientations, each model or approach to psychotherapy has at its core an understanding of the development of psychopathology that, in theory, should expand a client's view of why they are experiencing the problems that they have. Psychodynamic and psychoanalytic approaches have long held to the importance of increasing the client's understanding of the complexity of their experience and situation. Although there are numerous approaches to understanding one's experience (e.g., attachment history, early parent-child relationships, use of a corrective emotional relationship with the therapist), these approaches serve to broaden the client's view of their experience and narrative (e.g., Bernier & Dozier, 2002; Connors, 2011; Shedler, 2010). CBT, on the other hand, does this by focusing on identifying thoughts and actions and modifying them as a means of increasing an understanding of the client's world and, in turn, helping them break out of simplistic black-and-white, good-or-bad thinking (e.g., Beck, 1967, 1979; Beck et al., 2004; Persons, 1989). Within CBT, *decentering*—defined as disidentification from and lowered reactivity to internal experience (Naragon-Gainey & DeMarree, 2017a, 2017b)—is the mechanism for fostering an increased experiencing of the world (Bieling et al., 2012) and is in line with the concept of ambiguity tolerance. Similarly, dialectical behavior therapy (DBT) has at its foundation the importance of strengthening the ability to hold simultaneously seemingly opposing forces, thoughts, or emotions (e.g., Chapman, 2006; Linehan, 1993; Lynch et al., 2006). Acceptance and commitment therapy (ACT) also has foundational aspects that clearly overlap with

increasing ambiguity tolerance, including, for example, change strategies such as acceptance, cognitive defusion, and self as context (e.g., Hayes, 2004).

Of course, it is possible that all of these (and other) theoretical views are not mutually exclusive but instead provide multiple perspectives or lenses with which to view one's experience (Goldfried, 1980; Grencavage & Norcross, 1990; Laska et al., 2014; Norcross, 1987; Norcross & Goldfried, 2005; Weinberger, 1995). Nevertheless, any given approach to psychotherapy may be missing out on equally compelling understandings of a client's experience. That is, as psychotherapists we may benefit from attending to the reality that there are always more complicated and nuanced ways of understanding an individual's experience.

What Ambiguity Tolerance Is Not

There are several existing psychological constructs that share facets with ambiguity tolerance but that are still quite distinct. For example, *intolerance of uncertainty* is a similar construct that has been defined as "a future-oriented dispositional characteristic resulting from negative beliefs about uncertainty and its implications" (Carleton, 2012, p. 939). This construct has been helpful as a key psychological mechanism in anxiety disorders specifically (for a review, see Carleton, 2012). This makes sense because intolerance of uncertainty is framed as a fear of the unknown and concerns with the future and less about understanding past situations or even making meaning of the present moment.

Although intolerance of uncertainty is conceptually similar to our definition of ambiguity tolerance, we see it as different in two key ways: (1) intolerance of uncertainty has at its core a fear of the unknown—of future situations in particular— whereas ambiguity tolerance is concerned with the assignment of meaning to the past, present, and future; and (2) a focus on fear in particular (or intolerance) is more concerned with avoidance of negative aspects of experience rather than focusing on how meaning is made of experience (whether that be negative, neutral, or positive). For example, ambiguity tolerance is concerned with how an individual might make sense of a recent argument with a partner or a positive job evaluation—from simple ("she was in a bad mood"; "I am good at my job") to complex ("There was a lot going on in that argument for both of us, for example …"; "Overall I am doing well in my job, and there are other ways that I can strengthen my skills and work"). Intolerance of uncertainty is less related to these meaning-making activities and more about fear and avoidance of what is not known. That said, much of the way in which intolerance of uncertainty manifests is similar to a low tolerance for ambiguity (e.g., "I need to know what will happen," "I

won't be able to cope if things change") in that the meaning that is ascribed is black and white or absolute. Thus, there is conceptual overlap between ambiguity tolerance and intolerance for uncertainty.

A second construct that is related to ambiguity tolerance, but also quite distinct, is *rumination* (Bieling et al., 2012; Bridges, 2006; Ward et al., 2003). Rumination is defined as "repetitively and passively focusing on symptoms of distress and on the possible causes and consequences of these symptoms" (Nolen-Hoeksema et al., 2008, p. 400) and therefore tends to be the process whereby someone tries to make sense of a situation(s) by perseverating on the content. Rumination has been shown to be a risk factor in psychopathology, especially depression (Nolen-Hoeksema, 1987; Nolen-Hoeksema et al., 2008; Wisco & Nolen-Hoeksema, 2008, 2009; Yook et al., 2010). At first glance, rumination appears related to high ambiguity tolerance given that individuals tend to look to many causes and consequences of distressing memories and experiences. However, rumination is typically further defined in terms of negative, even absolute, thinking and appraisals or "the process of thinking perseveratively about one's feelings and problems rather than in terms of the specific content of thoughts" (Nolen-Hoeksema et al., 2008, p. 400). Additionally, these thought processes can evolve into a certainty of negative future expectancies such that an individual may think, "If life is not everything I thought it was, it must be nothing I thought it was" (Andersen & Schwartz, 1992, p. 276). Thus, rumination involves not an openness to the many interpretations of a specific experience but rather a desire to gain some measure of control over experiences and events when there is no control to be had. In fact, rumination is quite likely to be negatively related to ambiguity tolerance because it is the opposite of "tolerating" the complexity of a situation and instead a desire to settle on a simple (if painful) understanding of meaning.

Another related, yet clearly distinct concept is the *therapeutic alliance* (e.g., Flückiger et al., 2012; Martin et al., 2000), which is typically defined as a bond between client and therapist that promotes collaborative work toward a common goal. This relationship helps the client stay invested in the therapeutic process despite difficulties and anxieties (Horvath et al., 2011; Leibovich & Zilcha-Mano, 2017; Martin et al., 2000). Thus, the therapeutic alliance refers to the relationship between the therapist and client and the degree to which the client feels safe enough to explore complicated material. Because understanding one's experience can be complicated, difficult, and potentially stressful (i.e., we must "tolerate" the complexity of our lived experience), it is easy to see how the therapeutic alliance in psychotherapy is a necessary precursor to the development of ambiguity tolerance. That is, given that experiences are always ambiguous and that individuals likely adapt to the complexity of everyday life through forming simple

heuristics, it is likely that the formation of a positive therapeutic alliance is necessary for effective psychotherapy (e.g., Bohart & Tallman, 2010; Grencavage & Norcross, 1990) because it creates safety that allows the client to challenge novel and even threatening ideas. In order to change—or more precisely, to broaden our understanding of our lived experiences—we must first feel safe enough to explore more nuanced understandings of what has happened and is happening to us.

Finally, another related but conceptually distinct construct is *emotion regulation*, or, more specifically, a form of emotion regulation referred to as *reappraisal*. Reappraisal is generally thought to be an effective emotion regulation strategy typically defined as a rethinking or recontextualizing of negative affectively charged material (Gross, 1998; Gross & John, 2003; Mauss et al., 2007; McRae et al., 2010). An example of reappraisal is a person who is initially angry about loud neighbors but then rethinks the situation because "it will be temporary, and I can handle a little noise." Reappraisal is clearly related to ambiguity tolerance in that the individual attempts to understand their experience from a different (and perhaps more effective) perspective. However, reappraisal may or may not be a process that adds complexity and nuance to one's experience (Ray et al., 2010; Troy et al., 2013) and is clearly done to regulate one's emotions. Ambiguity tolerance, on the other hand, is a broader construct meant to add complexity to one's understanding of the psychosocial world, whether or not it immediately regulates one's emotions.

In general, we believe that ambiguity tolerance is a unique construct because it allows for a relatively straightforward assessment of how meaning is made. It is broad enough to incorporate all time frames (i.e., how one thinks of past events, the present moment, and the future) but specific enough to be operationalized both in terms of a personality trait (i.e., how one tends to create meaning from simple heuristics to nuanced understanding) and as a situational factor (i.e., how the present environment, perceived time pressure, and other factors encourage or discourage nuanced thinking about complicated psychosocial events). It is also well-researched with several existing reliable and valid measures. Furthermore, this construct can incorporate many of the rich findings in the literature on intolerance of uncertainty, rumination, and reappraisal because, at their core, each of these processes tends to focus on how individuals make sense of their psychosocial world. Ambiguity tolerance provides the broader operationalization that links each of these constructs to an understandable theme that can be measured and tested with specific hypotheses that should predict whether a particular interpretation of a psychosocial event leads to more negative affect and psychopathological symptoms or to greater well-being and connectedness.

Measuring Ambiguity Tolerance

We have asserted that ambiguity tolerance is an underlying mechanism in therapeutic outcomes, but how can we measure it in an individual? Researchers have several options available. In terms of trait self-report measures, there are over eight separate measures with various strengths and weaknesses (see Furnham & Marks, 2013 for a review). For example, the original Budner 16-item Tolerance of Ambiguity Scale (Budner, 1962) includes references to specific contexts, and findings have shown expected predictive validity to other intolerance of ambiguity scales and specific contexts as well as good test-retest reliability. However, internal reliability of this scale has been inconsistent, so it has not been used as much in recent research (Benjamin et al., 1996). Another often-used measure of ambiguity tolerance is the Multiple Stimulus Types Ambiguity Tolerance Scale-II (MSTAT-II), a 13-item questionnaire with an internal reliability ranging from 0.79 to 0.82 and good test-retest reliability (McLain, 2009). Higher ambiguity tolerance on this scale has been shown to be negatively related to depression, anxiety, and stress and positively related to well-being and social functioning (e.g., Gibson et al., 2019). One other related empirical measure is the Need for Closure Scale (NFCS), a 42-item measure with high test-retest reliability of 0.86 that has been used with various groups of subjects, showing similar relationships to psychopathology and functioning as self-reported trait measures of ambiguity tolerance (Webster & Kruglanski, 1994).

In addition to validated questionnaires, researchers can manipulate the environment such that participants tend to tolerate ambiguity more or less in various situations. For example, in a study mentioned earlier (Endres et al., 2015), researchers randomly assigned over 300 management students to a study in which their management skills were to be assessed using a low (structured interview), moderate (mild structured interview), or high (unstructured) ambiguity condition. They found that individuals in the structured settings were able to tolerate ambiguity more after the interviews (and reported more ability to tolerate ambiguity) than those who experienced the more unstructured conditions. This is likely because individuals in the structured conditions did not have to process as much ambiguity as those in the less structured conditions (Endres et al., 2015). Other studies have shown that ambiguity tolerance can be manipulated, for example, by placing a time constraint or deadline on participants resulting in decreased ambiguity tolerance, and by adding the evaluation or judgment by others, also reducing an individual's ambiguity tolerance (Curley et al., 1986; De Grada et al., 1999; Kruglanski & Freund, 1983).

In terms of behavioral observation or outcomes in psychotherapy, ambiguity tolerance also lends itself well to coding. For example, researchers or clinicians can simply code a client's sense of meaning of an experience on a spectrum from simple/black-and-white thinking to more complex and nuanced understanding. When a client, for instance, describes their understanding of a relationship breakup or a job loss, this can be coded along a spectrum of simple/black-and-white thinking (e.g., "I was the problem"/"My partner was the problem"; "It was not my fault that I lost my job"/"I am the problem") to more nuanced thinking ("There were several contributors to our breakup—my behavior, my partner's, our financial stressors, etc."; "Several things went into my job loss, including my fit for the job, the company's struggles, my bosses troubles seeing my strengths, etc."). Because mentalizing has been coded in the Adult Attachment Interview (Fonagy et al., 1991, 1998, 2007; Fonagy & Target, 2002), ambiguity tolerance may also lend itself to coding schemes in semistructured assessment contexts. In these ways, the construct of ambiguity tolerance lends itself to broader assessments of psychotherapy outcome or use in clinical practice within individual sessions.

Clinical Implications and Future Directions

We have made the case that ambiguity tolerance is an easily operationalizable construct that has a great deal of potential for understanding mechanisms of change and in future directions of psychotherapy integration. We believe that several important clinical implications arise from understanding the role of ambiguity tolerance in such integration.

First, given the positive effects of ambiguity tolerance in several areas of psychology, and given the fact that all effective therapeutic approaches appear to attempt to increase clients' ambiguity in some way, it is possible that ambiguity tolerance is a large driver of change in psychotherapy. Future research will need to test this hypothesis more systematically to confirm that it is true. Because ambiguity tolerance can be seen as a situationally influenced experience, a skill to be developed, and a personality trait, there are several lines of inquiry to explore. For example, as reviewed here, how one makes meaning of past emotional experiences (from simple to complex interpretations) has a direct relationship to how emotions are processed and perhaps how many symptoms arise. It is also likely that these processes and traits are already playing out in effective and ineffective psychotherapy. That is, it may be that individuals who do best in psychotherapy already have higher levels of ambiguity tolerance (or perhaps those low in ambiguity tolerance have the most to gain).

Second, if ambiguity tolerance is an important change mechanism, this may strengthen existing models of psychotherapy. For example, clinicians may work more flexibly within a given psychotherapeutic model with the goal of expanding their clients' views of the complexity of their experience rather than focusing proximally on a given situation, thought, or interpretation of a simple meaning for a problem or concern.

Third, by definition, if there are always multiple levels of interpretation of an existing problem or concern, and the goal is to increase a client's tolerance for the ambiguity of all psychosocial experiences, then all existing models of understanding human behavior and experience have important possible insights for clients. Indeed, different models may work better or resonate more with some clients than with others. Ambiguity tolerance could thus provide a thread that ties seemingly disparate psychotherapy approaches together. In other words, the construct of ambiguity tolerance holds the possibility of moving the field of psychotherapy toward a goal of integration.

References

Alberti, G. G. (2018). Psychotherapy by alliance and corrective experiences: A possible general model. *Journal of Psychotherapy Integration, 28*(1), 31–45. https://doi.org/10.1037/int0000079

Andersen, S. M., & Schwartz, A. H. (1992). Intolerance of ambiguity and depression: A cognitive vulnerability factor linked to helplessness. *Social Cognition, 10*(3), 271–298. https://doi.org/10.1521/soco.1992.10.3.271

Ardito, R. B., & Rabellino, D. (2011). Therapeutic alliance and outcome of psychotherapy: Historical excursus, measurements, and prospects for research. *Frontiers in Psychology, 2*(270), 1–11. https://doi.org/10.3389/fpsyg.2011.00270

Ayduk, Ö., & Kross, E. (2010). Analyzing negative experiences without ruminating: The role of self-distancing in enabling adaptive self-reflection. *Social and Personality Psychology Compass, 4*(10), 841–854. https://doi.org/10.1111/j.1751-9004.2010.00301.x

Barth, J., Munder, T., Gerger, H., Nüesch, E., Trelle, S., Znoj, H., Jüni, P., & Cuijpers, P. (2013). Comparative efficacy of seven psychotherapeutic interventions for patients with depression: A network meta-analysis. *PLoS Medicine, 10*(5), 1–17. https://doi.org/10.1371/journal.pmed.1001454

Beck, A. T. (1967). *Depression*. University of Pennsylvania Press.

Beck, A. T. (1979). *Cognitive therapy and the emotional disorders*. Penguin Publishing Group.

Beck, A. T., Freeman, A., & Davis, D. D. (2004). *Cognitive therapy of personality disorders* (2nd ed.). Guilford Press.

Beitman, B. D., & Soth, A. M. (2006). Activation of self-observation: A core process among the psychotherapies. *Journal of Psychotherapy Integration, 16*(4), 383–397. https://doi.org/10.1037/1053-0479.16.4.383

Benjamin, A. J., Jr., Mayes, B. T., & Riggio, R. E. (1996). Reliability and factor structure of Budner's tolerance for ambiguity scale. *Journal of Social Behavior and Personality, 11*(3), 625–632.

Bernier, A., & Dozier, M. (2002). The client-counselor match and the corrective emotional experience: Evidence from interpersonal and attachment research. *Psychotherapy: Theory, Research, Practice, Training, 39*(1), 32–43. https://doi.org/10.1037/0033-3204.39.1.32

Bibring, E. (1954). Psychoanalysis and the dynamic psychotherapies. *Journal of the American Psychoanalytic Association, 2*(4), 745–770. https://doi.org/10.1177/000306515400200412

Bieling, P. J., Hawley, L. L., Bloch, R. T., Corcoran, K. M., Levitan, R. D., Young, L. T., MacQueen, G. M., & Segal, Z. V. (2012). Treatment-specific changes in decentering following mindfulness-based cognitive therapy versus antidepressant medication or placebo for prevention of depressive relapse. *Journal of Consulting and Clinical Psychology, 80*(3), 365–372. https://doi.org/10.1037/a0027483

Bögels, S. M., Wijts, P., Oort, F. J., & Sallaerts, S. J. M. (2014). Psychodynamic psychotherapy versus cognitive behavior therapy for social anxiety disorder: An efficacy and partial effectiveness trial. *Depression and Anxiety, 31*(5), 363–373. https://doi.org/10.1002/da.22246

Bohart, A. C., & Tallman, K. (2010). Clients: The neglected common factor in psychotherapy. In B. L. Duncan, S. D. Miller, B. E. Wampold, & M. A. Hubble (Eds.), *The heart and soul of change: Delivering what works in therapy* (2nd ed.) (pp. 83–111). American Psychological Association.

Bridges, M. R. (2006). Activating the corrective emotional experience. *Journal of Clinical Psychology, 62*(5), 551–568. https://doi.org/10.1002/jclp

Budner, S. (1962). Intolerance of ambiguity as a personality variable. *Journal of Personality, 30*(1), 29–50. https://doi.org/10.1111/j.1467-6494.1962.tb02303.x

Carleton, R. N. (2012). The intolerance of uncertainty construct in the context of anxiety disorders: Theoretical and practical perspectives. *Expert Review of Neurotherapeutics, 12*(8), 937–947. https://doi.org/10.1586/ern.12.82

Caulfield, M., Andolsek, K., Grbic, D., & Roskovensky, L. (2014). Ambiguity tolerance of students matriculating to U.S. medical schools. *Academic Medicine: Journal of the Association of American Medical Colleges, 89*(11), 1526–1532. https://doi.org/10.1097/acm.0000000000000485

Chapman, A. L. (2006). Dialectical behavior therapy: Current indications and unique elements. *Psychiatry, 3*(9), 62–68.

Chen, C. C., & Hooijberg, R. (2000). Ambiguity intolerance and support for valuing-diversity interventions. *Journal of Applied Social Psychology, 30*(11), 2392–2408. https://doi.org/10.1111/j.1559-1816.2000.tb02442.x

Christie, D., & Wilson, C. (2005). CBT in paediatric and adolescent health settings: A review of practice-based evidence. *Pediatric Rehabilitation, 8*(4), 241–247. https://doi.org/10.1080/13638490500066622

Collie, A. (2008). Consciously working at the unconscious level: Psychodynamic theory in action in a training environment. *Journal of Social Work Practice in the Addictions, 22*(3), 345–358. https://doi.org/10.1080/02650530802396676

Colori, S. (2018). Exposure therapy. *Schizophrenia Bulletin, 44*(2), 229–230. https://doi.org/10.1093/schbul/sbv049

Connors, M. E. (2011). Attachment theory: A "secure base" for psychotherapy integration. *Journal of Psychotherapy Integration, 21*(3), 348–362. https://psycnet.apa.org/doi/10.1037/a0025460

Craske, M. G., Treanor, M., Conway, C. C., Zbozinek, T., & Vervliet, B. (2014). Maximizing exposure therapy: An inhibitory learning approach. *Behaviour Research and Therapy, 58*, 10–23. https://doi.org/10.1016/j.brat.2014.04.006

Curley, S. P., Yates, J. F., & Abrams, R. A. (1986). Psychological sources of ambiguity avoidance. *Organizational Behavior and Human Decision Processes, 38*(2), 230–256. https://doi.org/10.1016/0749-5978(86)90018-X

De Grada, E., Kruglanski, A. W., Mannetti, L., & Pierro, A. (1999). Motivated cognition and group interaction: Need for closure affects the contents and

processes of collective negotiations. *Journal of Experimental Social Psychology, 35*(4), 346–365. https://doi.org/10.1006/jesp.1999.1376

Dijksterhuis, A., van Knippenberg, A., Kruglanski, A. W., & Schaper, C. (1996). Motivated social cognition: Need for closure effects on memory and judgment. *Journal of Experimental Social Psychology, 32*(3), 254–270. https://doi.org/10.1006/jesp.1996.0012

Driessen, E., Van, H. L., Don, F. J., Peen, J., Kool, S., Westra, D., Hendriksen, M., Schoevers, R. A., Cuijpers, P., Twisk, J. W. R., & Dekker, J. J. M. (2013). The efficacy of cognitive-behavioral therapy and psychodynamic therapy in the outpatient treatment of major depression: A randomized clinical trial. *The American Journal of Psychiatry, 170*(9), 1041–1050. https://doi.org/10.1176/appi.ajp.2013.12070899

Duncan, B. L., & Moynihan, D. W. (1994). Applying outcome research: Intentional utilization of the client's frame of reference. *Psychotherapy: Theory, Research, Practice, Training, 31*(2), 294–301. https://doi.apa.org/doi/10.1037/h0090215

Eley, D. S., Leung, J. K., Campbell, N., & Cloninger, C. R. (2017). Tolerance of ambiguity, perfectionism and resilience are associated with personality profiles of medical students oriented to rural practice. *Medical Teacher, 39*(5), 512–519. https://doi.org/10.1080/0142159X.2017.1297530

Endres, M. L., Camp, R., & Milner, M. (2015). Is ambiguity tolerance malleable? Experimental evidence with potential implications for future research. *Frontiers in Psychology, 6*(619), 1–7. https://doi.org/10.3389/fpsyg.2015.00619

Epstein, S. (1994). Integration of the cognitive and the psychodynamic unconscious. *The American Psychologist, 49*(8), 709–724. https://doi.org/10.1037//0003-066x.49.8.709

Flückiger, C., Del Re, A. C., Wampold, B. E., Symonds, D., & Horvath, A. O. (2012). How central is the alliance in psychotherapy? A multilevel longitudinal meta-analysis. *Journal of Counseling Psychology, 59*(1), 10–17. https://doi.org/10.1037/a0025749

Fonagy, P., & Bateman, A. W. (2006a). Mechanisms of change in mentalisation-based therapy with BPD. *Journal of Clinical Psychology, 62*(4), 411–430. https://doi.org/10.1002/jclp.20241

Fonagy, P., & Bateman, A. (2006b, January). Progress in the treatment of borderline personality disorder. *British Journal of Psychiatry, 188*, 1–3. https://doi.org/10.1192/bjp.bp.105.012088

Fonagy, P., Gergely, G., & Target, M. (2007). The parent-infant dyad and the construction of the subjective self. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 48*(3–4), 288–328. https://doi.org/10.1111/j.1469-7610.2007.01727.x

Fonagy, P., Luyten, P., & Bateman, A. (2015). Translation: Mentalizing as treatment target in borderline personality disorder. *Personality Disorders: Theory, Research, and Treatment, 6*(4), 380–392. https://doi.org/10.1037/per0000113

Fonagy, P., Steele, M., Steele, H., Moran, G. S., & Higgitt, A. C. (1991). The capacity for understanding mental states: The reflective self in parent and child and its significance for security of attachment. *Infant Mental Health Journal, 12*(3), 201–218. https://doi.org/10.1002/1097-0355(199123)12:3<201::AID-IMHJ2280120307>3.0.CO;2-7

Fonagy, P., & Target, M. (2002). Early intervention and the development of self-regulation. *Psychoanalytic Inquiry, 22*(3), 307–335. https://doi.org/10.1080/07351692209348990

Fonagy, P., Target, M., Steele, H., & Steele, M. (1998). *Reflective functioning manual for application to AAI*. July, 1–47.

Frenkel-Brunswik, E. (1948). Tolerance toward ambiguity as a personality variable. *The American Psychologist, 3*(268), 385–401.

Frenkel-Brunswik, E. (1949). Intolerance of ambiguity as an emotional and perceptual personality variable. *Journal of Personality, 18*(1), 108–143. https://doi.org/10.1111/j.1467-6494.1949.tb01236.x

Frisina, P. G., Borod, J. C., & Lepore, S. J. (2004). A meta-analysis of the effects of written emotional disclosure on the health outcomes of clinical populations. *The Journal of Nervous and Mental Disease, 192*(9), 629–634. https://doi.org/10.1097/01.nmd.0000138317.30764.63

Furnham, A., & Marks, J. (2013). Tolerance of ambiguity: A review of the recent literature. *Psychology, 4*(9), 717–728. https://doi.org/10.4236/psych.2013.49102

Gibson, J., Nieto, A., Oberoi, B., Leung, L., Thompson, R., Gaitan, L., & Gard, D. E. (2019, 19 September). *Tolerance of ambiguity and its relationship to psychopathology and well-being* [Presentation]. Society for Research in Psychopathology, Buffalo, New York.

Goldfried, M. R. (1980). Toward the delineation of therapeutic change principles. *The American Psychologist, 35*(11), 991–999. https://doi.org/10.1037//0003-066x.35.11.991

Gomes-Schwartz, B. (1978). Effective ingredients in psychotherapy: Prediction of outcome from process variables. *Journal of Consulting and Clinical Psychology, 46*(5), 1023–1035. https://doi.org/10.1037//0022-006x.46.5.1023

Greenberg, R. P., Constantino, M. J., & Bruce, N. (2006). Are patient expectations still relevant for psychotherapy process and outcome? *Clinical Psychology Review, 26*(6), 657–678. https://doi.org/10.1016/j.cpr.2005.03.002

Grencavage, L. M., & Norcross, J. C. (1990). Where are the commonalities among the therapeutic common factors? *Professional Psychology, Research and Practice, 21*(5), 372–378. https://psycnet.apa.org/doi/10.1037/0735-7028.21.5.372

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology: Journal of Division 1 of the American Psychological Association, 2*(3), 271–299. https://doi.org/10.1037/1089-2680.2.3.271

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348–362. https://doi.org/10.1037/0022-3514.85.2.348

Haner, M., & Rude, S. (2015). Establishing the reliability and validity of a performance measure of big picture appraisal. *Cognitive Therapy and Research, 39*(5), 709–719. https://doi.org/10.1007/s10608-015-9688-2

Hartman, D., & Zimberoff, D. (2004). Corrective emotional experience in the therapeutic process. *Journal of Heart-Centered Therapies, 7*(2), 3–84.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy, 35*(4), 639–665. https://doi.org/10.1016/S0005-7894(04)80013-3

Høglend, P. (1999). Psychotherapy research: New findings and implications for training and practice. *The Journal of Psychotherapy Practice and Research, 8*(4), 257–263.

Horvath, A. O., Del Re, A. C., Flückiger, C., & Symonds, D. (2011). Alliance in individual psychotherapy. *Psychotherapy*, *48*(1), 9–16. https://doi.org/10.1037/a0022186

Horvath, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Counseling Psychology, 38*(2), 139–149. https://doi.org/10.1037/a0022186

Judge, T. A., Thoresen, C. J., Pucik, V., & Welbourne, T. M. (1999). Managerial coping with organizational change: A dispositional perspective. *The Journal of Applied Psychology, 84*(1), 107–122. https://psycnet.apa.org/doi/10.1037/0021-9010.84.1.107

Katsaros, K. K. (2014). Managers' workplace attitudes, tolerance of ambiguity and firm performance: The case of Greek banking industry. *Management Research Review, 37*(5), 442–465. https://doi.org/10.1108/MRR-01-2013-0021

Kross, E., & Ayduk, O. (2008). Facilitating adaptive emotional analysis: Distinguishing distanced-analysis of depressive experiences from immersed-analysis and distraction. *Personality & Social Psychology Bulletin, 34*(7), 924–938. https://doi.org/10.1177/0146167208315938

Kross, E., & Ayduk, O. (2011). Making meaning out of negative experiences by self-distancing. *Current Directions in Psychological Science, 20*(3), 187–191. https://doi.org/10.1177%2F0963721411408883

Kross, E., Gard, D., Deldin, P., Clifton, J., & Ayduk, O. (2012). "Asking why" from a distance: Its cognitive and emotional consequences for people with major depressive disorder. *Journal of Abnormal Psychology, 121*(3), 559–569. https://doi.org/10.1037/a0028808

Kruglanski, A. W. (1989). The psychology of being "right": The problem of accuracy in social perception and cognition. *Psychological Bulletin, 106*(3), 395–409. https://psycnet.apa.org/doi/10.1037/0033-2909.106.3.395

Kruglanski, A. W. (1990). Motivations for judging and knowing: Implications for causal attribution. In E. T. Higgins (Ed.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 333–368). Guilford Press.

Kruglanski, A. W., & Freund, T. (1983). The freezing and unfreezing of lay-inferences: Effects on impressional primacy, ethnic stereotyping, and numerical anchoring. *Journal of Experimental Social Psychology*, *19*(5), 448–468. https://doi.org/10.1016/0022-1031(83)90022-7

Kruglanski, A. W., Peri, N., & Zakai, D. (1991). Interactive effects of need for closure and initial confidence on social information seeking. *Social Cognition, 9*(2), 127–148. https://psycnet.apa.org/doi/10.1521/soco.1991.9.2.127

Kuhn, G., Goldberg, R., & Compton, S. (2009). Tolerance for uncertainty, burnout, and satisfaction with the career of emergency medicine. *Annals of Emergency Medicine, 54*(1), 106–113. https://doi.org/10.1016/j.annemergmed.2008.12.019

Lally, J., & Cantillon, P. (2014). Uncertainty and ambiguity and their association with psychological distress in medical students. *Academic Psychiatry: The Journal of the American Association of Directors of Psychiatric Residency Training and the Association for Academic Psychiatry, 38*(3), 339–344. https://doi.org/10.1007/s40596-014-0100-4

Laska, K. M., Gurman, A. S., & Wampold, B. E. (2014). Expanding the lens of evidence-based practice in psychotherapy: A common factors perspective. *Psychotherapy, 51*(4), 467–481. https://doi.org/10.1037/a0034332

Lecours, S., & Bouchard, M. A. (1997). Dimensions of mentalisation: Outlining levels of psychic transformation. *International Journal of Psycho-Analysis, 78*(5), 855–875.

Leibovich, L., & Zilcha-Mano, S. (2017). Integration and clinical demonstration of active ingredients of short-term psychodynamic therapy for depression. *Journal of Psychotherapy Integration, 27*(1), 93–106. https://psycnet.apa.org/doi/10.1037/int0000043

Leichsenring, F., Salzer, S., Beutel, M. E., Herpertz, S., Hiller, W., Hoyer, J., Huesing, J., Joraschky, P., Nolting, B., Poehlmann, K., Ritter, V., Stangier, U., Strauss, B., Stuhldreher, N., Tefikow, S., Teismann, T., Willutzki, U., Wiltink, J., & Leibing, E. (2013). Psychodynamic therapy and cognitive-behavioral therapy in social anxiety disorder: A multicenter randomized controlled trial. *The American Journal of Psychiatry, 170*(7), 759–767.

Leichsenring, F., Salzer, S., Beutel, M. E., Herpertz, S., Hiller, W., Hoyer, J., Huesing, J., Joraschky, P., Nolting, B., Poehlmann, K., Ritter, V., Stangier, U., Strauss, B., Stuhldreher, N., Tefikow, S., Teismann, T., Willutzki, U., Wiltink, J., & Leibing, E. (2014). Long-term outcome of psychodynamic therapy and cognitive-behavioral therapy in social anxiety disorder. *The American Journal of Psychiatry, 171*(10), 1074–1082. https://doi.org/10.1176/appi.ajp.2014.13111514

Linehan, M. M. (1993). *Diagnosis and treatment of mental disorders: Skills training manual for treating borderline personality disorder*. Guilford Press. Retrieved from https://psycnet.apa.org/fulltext/1995-98090-000.pdf

Luborsky, L., Rosenthal, R., Diguer, L., Andrusyna, T. P., Levitt, J. T., Seligman, D. A., Berman, J. S., & Krause, E. D. (2003). Are some psychotherapies much more effective than others? *Journal of Applied Psychoanalytic Studies*, 5(4), 455–460. https://doi.org/10.1023/A:1026023715740

Lynch, T. R., Chapman, A. L., Rosenthal, M. Z., Kuo, J. R., & Linehan, M. M. (2006). Mechanisms of change in dialectical behavior therapy: Theoretical and empirical observations. *Journal of Clinical Psychology, 62*(4), 459–480. https://doi.org/10.1002/jclp.20243

Ma, A., & Kay, A. C. (2017). Compensatory control and ambiguity intolerance. *Organizational Behavior and Human Decision Processes, 140*, 46–61. https://doi.org/10.1016/j.obhdp.2017.04.001

MacLeod, C., & Mathews, A. (2012). Cognitive bias modification approaches to anxiety. *Annual Review of Clinical Psychology, 8*(1), 189–217. https://doi.org/10.1146/annurev-clinpsy-032511-143052

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68*(3), 438–450. https://psycnet.apa.org/doi/10.1037/0022-006X.68.3.438

Mauss, I. B., Cook, C. L., Cheng, J. Y. J., & Gross, J. J. (2007). Individual differences in cognitive reappraisal: Experiential and physiological responses to an anger provocation. *International Journal of Psychophysiology: Official Journal of the International Organization of Psychophysiology, 66*(2), 116–124. https://doi.org/10.1016/j.ijpsycho.2007.03.017

McLain, D. L. (2009). Evidence of the properties of an ambiguity tolerance measure: The multiple stimulus types ambiguity tolerance scale-II (MSTAT-II). *Psychological Reports, 105*(3), 975–988.

McLain, D. L., Kefallonitis, E., & Armani, K. (2015). Ambiguity tolerance in organizations: Definitional clarification and perspectives on future research. *Frontiers in Psychology*, 6, 344. https://dx.doi.org/10.3389%2Ffpsyg.2015.00344

McRae, K., Hughes, B., Chopra, S., Gabrieli, J. D. E., Gross, J. J., & Ochsner, K. N. (2010). The neural bases of distraction and reappraisal. *Journal of Cognitive Neuroscience, 22*(2), 248–262. https://dx.doi.org/10.1162%2Fjocn.2009.21243

Naragon-Gainey, K., & DeMarree, K. G. (2017a). Decentering attenuates the associations of negative affect and positive affect with psychopathology. *Clinical Psychological Science, 5*(6), 1027–1047. https://doi.org/10.1177%2F2167702617719758

Naragon-Gainey, K., & DeMarree, K. G. (2017b). Structure and validity of measures of decentering and defusion. *Psychological Assessment, 29*(7), 935–954. https://doi.org/10.1037/pas0000405

Nolen-Hoeksema, S. (1987). Sex differences in unipolar depression: Evidence and theory. *Psychological Bulletin, 101*(2), 259–282. https://psycnet.apa.org/doi/10.1037/0033-2909.101.2.259

Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science, 3*(5), 400–424. https://doi.org/10.1111%2Fj.1745-6924.2008.00088.x

Norcross, J. (1987). Toward a common language for psychotherapy: Introduction. *Journal of Integrative and Eclectic Psychotherapies, 6*, 165–204.

Norcross, J. C., & Goldfried, M. R. (Eds.). (2005). *Handbook of psychotherapy integration* (2nd ed.) (Oxford Series in Clinical Psychology). Oxford University Press. https://psycnet.apa.org/doi/10.1093/med:psych/9780195165791.001.0001

Norton, R. W. (1975). Measurement of ambiguity tolerance. *Journal of Personality Assessment, 39*(6), 607–619. https://doi.org/10.1207/s15327752jpa3906_11

Pennebaker, J. W. (1997). Writing about emotional experiences as a therapeutic process. *Psychological Science, 8*(3), 162–166. https://doi.org/10.1111%2Fj.1467-9280.1997.tb00403.x

Persons, J. B. (1989). *Cognitive therapy in practice: A case formulation approach*. Norton.

Ray, R. D., McRae, K., Ochsner, K. N., & Gross, J. J. (2010). Cognitive reappraisal of negative affect: Converging evidence from EMG and self-report. *Emotion, 10*(4), 587–592. https://dx.doi.org/10.1037%2Fa0019015

Roberts, L., & Kwan, S. (2018). Putting the C into CBT: Cognitive challenging with adults with mild to moderate intellectual disabilities and anxiety disorders. *Clinical Psychology & Psychotherapy, 25*(5), 662–671. https://doi.org/10.1002/cpp.2196

Rosenzweig, S. (1936). Some implicit common factors in diverse methods of psychotherapy. *The American Journal of Orthopsychiatry, 6*(3), 412–415. https://psycnet.apa.org/doi/10.1111/j.1939-0025.1936.tb05248.x

Schartau, P. E. S., Dalgleish, T., & Dunn, B. D. (2009). Seeing the bigger picture: Training in perspective broadening reduces self-reported affect and psychophysiological response to distressing films and autobiographical memories. *Journal of Abnormal Psychology, 118*(1), 15–27. https://doi.org/10.1037/a0012906

Schere, J. L. (1982). Tolerance of ambiguity as a discriminating variable between entrepreneurs and managers. *Academy of Management Proceedings*, *1982*(1), 404–408. https://doi.org/10.5465/ambpp.1982.4976860

Shedler, J. (2010). The efficacy of psychodynamic psychotherapy. *The American Psychologist, 65*(2), 98–109. https://psycnet.apa.org/doi/10.1007/978-1-60761-792-1_2

Shim, M., Cappella, J. N., & Han, J. Y. (2011). How does insightful and emotional disclosure bring potential health benefits?: Study based on online support groups for women with breast cancer. *The Journal of Communication, 61*(3), 432–464. https://doi.org/10.1111/j.1460-2466.2011.01555.x

Sloan, D. M., Marx, B. P., Epstein, E. M., & Lexington, J. M. (2007). Does altering the writing instructions influence outcome associated with written disclosure? *Behavior Therapy, 38*(2), 155–168. https://dx.doi.org/10.1016%2Fj.beth.2006.06.005

Smyth, J. M. (1998). Written emotional expression: Effect sizes, outcome types, and moderating variables. *Journal of Consulting and Clinical Psychology, 66*(1), 174–184. https://doi.org/10.1037//0022-006x.66.1.174

Steinert, C., Munder, T., Rabung, S., Hoyer, J., & Leichsenring, F. (2017). Psychodynamic therapy: As efficacious as other empirically supported treatments? A meta-analysis testing equivalence of outcomes. *The American Journal of Psychiatry, 174*(10), 943–953. https://doi.org/10.1176/appi.ajp.2017.17010057

Stiles, W. B., Shapiro, D. A., & Elliott, R. (1986). "Are all psychotherapies equivalent?" *The American Psychologist, 41*(2), 165–180. https://psycnet.apa.org/doi/10.1037/0003-066X.41.2.165

Strong, T., Pyle, N. R., deVries, C., Johnston, D. N., & Foskett, A. J. (2008). Meaning-making lenses in counselling: Discursive, hermeneutic-phenomenological, and autoethnographic perspectives. *Canadian Journal of Counselling, 42*(2), 117–130.

Tegano, D. W. (1990). Relationship of tolerance of ambiguity and playfulness to creativity. *Psychological Reports, 66*(3), 1047–1056. https://psycnet.apa.org/doi/10.2466/PR0.66.3.1047-1056

Troy, A. S., Shallcross, A. J., & Mauss, I. B. (2013). A person-by-situation approach to emotion regulation: Cognitive reappraisal can either help or hurt, depending on the context. *Psychological Science, 24*(12), 2505–2514. https://doi.org/10.1177/0956797613496434

Ullrich, P. M., & Lutgendorf, S. K. (2002). Journaling about stressful events: Effects of cognitive processing and emotional expression. *Annals of Behavioral Medicine: A Publication of the Society of Behavioral Medicine, 24*(3), 244–250. https://doi.org/10.1207/s15324796abm2403_10

Ward, A., Lyubomirsky, S., Sousa, L., & Nolen-Hoeksema, S. (2003). Can't quite commit: Rumination and uncertainty. *Personality and Social Psychology Bulletin, 29*(1), 96–107. https://doi.org/10.1177/0146167202238375

Wayne, S., Dellmore, D., Serna, L., Jerabek, R., Timm, C., & Kalishman, S. (2011). The association between intolerance of ambiguity and decline in medical students' attitudes toward the underserved. *Academic Medicine: Journal of the Association of American Medical Colleges, 86*(7), 877–882. https://doi.org/10.1097/acm.0b013e31821dac01

Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology, 67*(6), 1049–1062. https://doi.org/10.1037/0022-3514.67.6.1049

Weinberger, J. (1995). Common factors aren't so common: The common factors dilemma. *Clinical Psychology: Science and Practice, 2*(1), 45–69. https://doi.org/10.1111/j.1468-2850.1995.tb00024.x

Wisco, B. E., & Nolen-Hoeksema, S. (2008). Ruminative response style. In K. S. Dobson & D. J. A. Dozois (Eds.), *Risk factors in depression* (pp. 221–236). Elsevier.

Wisco, B. E., & Nolen-Hoeksema, S. (2009). The interaction of mood and rumination in depression: Effects on mood maintenance and mood-congruent autobiographical memory. *Journal of Rational-Emotive and Cognitive-Behavior Therapy: RET, 27*(3), 144–159. https://doi.org/10.1007/s10942-009-0096-y

Yook, K., Kim, K.-H., Suh, S. Y., & Lee, K. S. (2010). Intolerance of uncertainty, worry, and rumination in major depressive disorder and generalized anxiety disorder. *Journal of Anxiety Disorders, 24*(6), 623–628. https://doi.org/10.1016/j.janxdis.2010.04.003

Zenasni, F., Besancon, M., & Lubart, T. (2008). Creativity and tolerance of ambiguity: An empirical study. *The Journal of Creative Behavior, 42*(1), 61–73. https://psycnet.apa.org/doi/10.1002/j.2162-6057.2008.tb01080.x