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A 60-Year Evolution of Cognitive Theory and Therapy

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As I look back over the past 65 years, my professional life has been filled with what I can best describe as a continual series of adventures. For the most part, the challenges that I've confronted were of my own making: Like Theseus in the labyrinth, whenever I seemed to find a solution to a problem, I was confronted with another problem. My initial difficult confrontation occurred when I was a fellow at the Austin Riggs Center in Stockbridge, Massachusetts. I was assigned to work with a young man with a pervasive delusion of being followed by government agents. To my surprise, even though the therapy was for the most part supportive, the delusion disappeared. In 1952, I subsequently published this case history as the first reported successful psychotherapy of an individual with schizophrenia (Beck, 1952). This case report is of particular interest since 50 years elapsed before I returned to the psychotherapy of schizophrenia: a form of mental illness that is considered, then and now, to be relatively impervious to psychotherapy.

In 1956, fresh from having passed my boards in psychiatry, I initiated my first major undertaking: validating the various propositions of psychoanalysis. Having undergone a personal analysis and completed the other requirements for admission to the Philadelphia Psychoanalytic Institute, I was totally committed to the theory and therapy of psychoanalysis, but I felt that for psychoanalysis to be accepted by the larger scientific community, it would require a solid base of evidence. On the basis of that conclusion, I decided to test out the central psychoanalytic proposition that depression was caused by inverted hostility. That is, if the patient experienced unacceptable anger toward a close person but repressed this unacceptable anger, it would come out in the form of self-criticism, negative expectancy, suicidal wishes, and depressed mood.

I teamed up with Marvin Hurvich, a psychology graduate student at the University of Pennsylvania. I prepared a scoring manual for hostility in dreams, and Marvin blindly scored a sample of dreams from patients with depression as well as a control group of patients who were not depressed. To our surprise, the patients with depression showed less hostility in their dreams than did the nondepressed individuals. This negative finding posed a dilemma for us: It would seem that the absence of manifest hostility in dreams, which had been characterized by Freud as the "royal road to the unconscious," invalidated the theory of inverted hostility. However, after examining the content of dreams for a second time, we found that the dreams of the patients with depression consistently portrayed the dreamer or the action in the dream in a negative way. Conversely, this consistent finding was not evident in the dreams of the nondepressed patients. We then reasoned that the hostility was unable to penetrate through the dreams, but it still existed at an unconscious level and assumed the form of a need to suffer. Because of this theme, we labeled these dreams as "masochistic" and found that using this negative portrayal of the dreamer as a symbol of the need for personal suffering clearly differentiated the patients with depression from those without (Beck & Hurvich, 1959).

In the early 1960s, I teamed up with Jim Diggory and Sy Feshbach from the Department of Psychiatry at the University of Pennsylvania. Although our empirical articles weren't published until years later, I conducted a number of experiments at that time based on the premise that if patients with depression had a need to suffer, they would perform better after a negative experience than after a positive experience (Loeb, Beck, & Diggory, 1971; Loeb, Beck, Diggory, & Tuthill, 1967; Loeb, Feshbach, Beck, & Wolf, 1964). For example, failure at a task or continuous negative feedback would lead to better performance than would a positive experience on a task.

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The results of these experiments turned out to oppose our hypothesis. Compared with nondepressed individuals, the individuals with depression performed significantly better after a positive experience than they did after a negative experience. I then realized that the concept of masochism as an explanation for the negative content in the dreams was probably a fallacy and that it was necessary to think of a another explanation for the negative finding. I then came to a rather simplistic explanation for the negative content in the dreams: The dreams simply represented the way the dreamer perceived the self. In other words, the dream content was a replication of the individuals' self-image that was actualized in the waking state. I then initiated a much larger study of dreams of patients with depression and found that the dreams did consistently portray the dreamer in negative images, consistent with the conscious negative self-image (Beck & Ward, 1961).

The findings of the dream studies and experimental research inspired me to explore the supportive evidence for the various tenets of psychoanalysis. I first reviewed the basis for the concept of the unconscious and repression and the other defense mechanisms. The unconscious as described by Freud consists of a jumble of unacceptable impulses and fantasies that are held in check by repression and other defense mechanisms. Although it was clear that cognitive processing can take place without awareness (as indicated by various experiments on subliminal bias, etc.), I could find no substantial evidence for the kind of drives and fantasies alluded to by psychoanalysts nor evidence for the frank exhibition of the supposed unconscious material. Beginning to doubt this keystone of psychoanalytic theory, I decided to examine the bases of psychoanalytic therapy, such as infantile memories and the existence of transference of parental images onto therapists. Here again, the data were weak and subject to other interpretations. As I pursued my investigations, the various psychoanalytic concepts began to collapse like a stack of dominos.

In a talk before the more liberal Academy of Psychoanalysis, I attempted to maintain some of the psychoanalytic hypotheses. In this talk, titled "There Is More on the Surface Than Meets the Eye" (Beck, 1963a), I tried to demonstrate that many of the patients' ideas that were regarded as unconscious were actually conscious. I also described how I discovered the existence of what I termed *automatic thoughts*. I described how one of my patients undergoing formal psychoanalysis regaled me from session to session with stories of her sexual escapades. I finally asked her whether she had any other thoughts besides these. When she focused on her stream of consciousness, she reported that she had a separate series of thoughts: She was afraid of boring me and thus had to entertain me with stories of her escapades. I then checked with other patients and similarly determined that when they focused on everything that was going through their minds, they had similar thoughts that they had not been very much aware of previously. In the course of time, I observed enough of these previously unreported thoughts to recognize that they played an important role in the person's affect and attitudes about the self, others, and the future. In 1960, I finally became disillusioned with the formal psychoanalytic approach of patients lying on the couch and free associating, I decided to ask the patients to sit up. At that point, we would carry out more of a collaborative conversation. After this slight shift in therapeutic approach and delivery, it became obvious to me that these thoughts often constituted an important bridge between the external stimulus situation and the individual's emotional experience and their behavior.

A New Theory and Therapy of Psychopathology

The elucidation of these automatic thoughts then laid the groundwork for a theory of human psychopathology. In parallel to noticing my clients experiencing automatic thoughts, I also noticed that when I focused on my own reactions to a particular stimulus, I became aware of these thoughts. They appeared to emerge automatically (hence the label of "automatic thoughts"). When I experienced either anxiety or anger, I would have an intervening automatic thought, the content of which explained the particular emotion. Thus, themes of threat or anxiety led to anger, loss led to sadness, and gain led to exhilaration. When I was able to put all of this together, I had an "a-ha" experience. I felt as though I had discovered something new. I also observed that the automatic thoughts actually were exaggerations or even misconstructions or misinterpretations of a situation. Thus, for example, I might misinterpret somebody's brief response to a question as a slight and become angry. I found that when I looked for the evidence for the thought, it was either very weak or nonexistent. I then found that my patients' automatic thoughts were similar to my own, and this formed a bridge to their affective experience. In the case of my patients, these automatic thoughts were generally distortions that fit their diagnosis. My first concerted venture was to examine these thoughts in patients with depression, who constituted the majority of my case load (Beck, 1963b).

For the most part, I found that automatic thoughts served a useful function, even though they were generally covert. For example, when driving, I was able to multitask: carry on a conversation, listen to the radio, or engage in my thoughts about a forthcoming lecture and at the same time, change lanes, increase or decrease

the speed, and circle around obstacles. When I focused on these thoughts, I perceived self-instructions that guided my actions whether I was driving or participating in other activities. When I asked my patients to focus on their automatic thoughts, I found that the content varied according to the major psychiatric problem or diagnosis. In fact, the more severe the disorder, the more conscious these automatic thoughts became. For example, the automatic thoughts of patients with depression had a general theme of self-criticism or regret. When the depression was more severe, the automatic thoughts occupied a good portion of the stream of consciousness. Likewise, the thought content of patients with anxiety were filled with fears in either the physical or psychological realm. Individuals with an obsessional neurosis tended to have repetitive, conscious automatic thoughts of an imperative nature (e.g., "wash your hands again"). There was no specific diagnostic category for problems with anger, but these generally had the theme of unjustified loss, challenge, or threat.

My initial application of the construct of automatic thoughts was to train the patients to focus on and recognize them. In the interview sessions, I trained the individuals to examine the validity of thoughts, which generally constituted either misinterpretations or exaggerations of a situation. I had noted that these thoughts often reflected *cognitive distortions*—misinterpretations or exaggerations of situations. In teaching the patients to evaluate these distortions, I was influenced in part by the volume by Albert Ellis (1962) titled *Reason and Emotion in Psychotherapy*. When the patients were able to correct their misinterpretation through procedures such as looking for the evidence, considering alternative explanations, or evaluating the logic of the conclusions, they began to get better. In reading Ellis's book, I noted that he had also recognized the existence of automatic thoughts, which he labeled *self-statements*. His description of self-statements was almost identical to what I had previously labeled as automatic thoughts. This constituted a kind of confirmation of the existence of these phenomena. Albert Ellis and I also recognized the difference between the automatic thoughts, often labeled *hot cognitions*, and the more deliberate, reflective, and consciously directed thinking, sometimes labeled *cold cognition*. Our recognition of these phenomena was later mentioned by Daniel Kahneman (2011) in his book *Thinking, Fast and Slow.*

Attempts to Create an Innovative Theory and Therapy

The next step in my evolution of cognitive theory and therapy was the recognition that individuals had a system of beliefs that, when triggered by a particular situation, yielded the interpretation or misinterpretation, generally in the form of an automatic thought. I then attempted to construct a theory of normal thought processes and psychopathology (Beck, 1976). The question was how to label the individuals' beliefs and automatic thoughts. Having read George Kelly's (1955) volume titled *A Theory of Personality: The Psychology of Personal Constructs*, I first considered using the term *construct* to label the beliefs. However, the term *schema*, derived from Piaget's work, seemed to offer more possibilities. I thus used *schema* as the name for the more or less durable structure that, when triggered, produced the automatic thought. Following from Piaget, I ascribed the following characteristics to the schemas: permeability/impermeability, magnitude, content, and charge. Permeability/impermeability indicated receptivity to change, magnitude was the size of the schema relative to the person's general self-concept, and content described the basic theme. When the charge of the schema was low, the schema was essentially deactivated but became activated again when a stimulus congruent with the content of the schema became activated or, in psychopathology, when the schema was activated to varying degrees during the course of the episode.

Application to Specific Psychological Disorders

Expanding on the concept of schemas, I developed a number of instruments that measured the idiosyncratic beliefs for the major depressive disorders and problems such as depression, suicide, anxiety, substance abuse, anger and hostility, couples problems, and, more recently, schizophrenia (e.g., the Beck Depression Inventory; Beck, Steer, & Carbin, 1988; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Because these various psychological variables were poorly defined, in each instance I developed a measure of the psychiatric disorder before attempting to identify the beliefs, the characteristics of each disorder, and the therapy adapted to modify the maladaptive beliefs. Examples from the different diagnostic tests are as follows: depression: "I am so sad or unhappy I can't stand it"; suicide: "I would end my life if I could"; anxiety: "I am anxious all of the time"; anger and hostility: "If someone offends me I should strike back." For each disorder, the diagnostic instrument would be used to identify the primary psychopathology and would be a partial outcome measure.

In developing a diagram for each disorder, I tried to focus on the typical maladaptive beliefs of the disorder. For example, the addictive behaviors (drinking, using, etc.) were characterized by the same beliefs facilitating the addiction. When experiencing a craving, common

maladaptive cognitions could be "it's OK this one time" (permission giving), "I can go to the corner to get a hit" (facilitating), and/or "I will quit after this one time" (promising). For anger and aggression issues, the typical pathway is as follows: The individuals feel diminished in some way, leading to a momentary hurt feeling. They are generally not aware of the hurt because it is overshadowed by anger and the impulse to counter attack. In another paradigm, particularly when the individuals feel vulnerable, they may react to a perceived attack or threat by becoming anxious. Finally, individuals, particularly those who are depressed, may respond to the assault by reinforcing the notion that they deserve it (Beck, 1999).

I also studied anger and aggression extensively in couples and found consistently that most of the anger could be attributed to cognitive process (Beck, 1988). They tended to show a wide range of biases, particularly attentional (observing only negative behaviors and not positive), interpretive (making negative interpretations of neutral behavior and exaggerating minimal negative), and finally globalization (seeing the partner as the enemy). Here it was possible to observe firsthand the dysfunctional beliefs in the interactions between the two individuals. Each individual saw the self as vulnerable and victimized and the other as overpowering and victimizing. In any case, it was possible to restore the individuals to a better condition provided their animosity had not gone beyond the point of no return. Note that the same types of images and cognitive distortions are present in conflicts between other individuals and between larger groups such as ethnic or religious groups and nations. These kinds of cognitive processes and distortions help to explain the origin of the killings in war and genocide.

Once the maladaptive beliefs were identified for a given disorder, I then proceeded to develop a therapy for that disorder. To test the clinical utility of the assigned beliefs for a given disorder or problem, I conducted clinical trials along with my postdoctoral students. After a successful randomized controlled trial, I would typically prepare a book so that the defined therapy could be used to replicate the initial findings and also provide material for the practitioners. In addition to identifying the primary problem and working to rewire maladaptive beliefs and biases into more adaptive ones, another key factor in the success of any of the adaptations of cognitive therapy is the working relationship with the therapist. In the most severe problems, such as personality disorders—borderline personality disorder and schizophrenia, for example—the forging of the connection with the patient involves a kind of partnership or comradeship in many cases.

Our team has managed over the past decade to make real progress in the treatment of schizophrenia. In the course of this treatment, we have found that even the most severe cases, involving long periods of hospitalization, bizarre behavior (e.g., undressing in public), poor urinary and bowel behaviors, self-injury, and aggressiveness, are amenable to treatment and subject to positive change (Grant, Bredemeier, & Beck, 2017; Grant, Huh, Perivoliotis, Stolar, & Beck, 2012). Most notably, we have found that psychotic features such as delusions, hallucinations, and bizarre behavior actually disguise a normal personality. The task of the therapist is to activate this normal personality through the relationship, pinpointing the individual's strengths, talents, and aspirations and then drawing on these to jointly form a therapeutic plan. Although there are notable differences between traditional cognitive behavior therapy (CBT) and our therapeutic approach for schizophrenia (i.e., recovery-oriented cognitive therapy, or CT-R), this therapy uses many of the basic tenets of CBT, including personalizing a cognitive formulation for each unique individual, working through negative and dysfunctional beliefs, and discussing strategies to achieving meaningful goals.

The worldwide expansion of CBT is due largely to its transdiagnostic efficacy, demonstrated in thousands of research studies (Brown et al., 2005; Rush, Hollon, Beck, & Kovacs, 1978; Waltman, Creed, & Beck, 2016; for a review of studies of CBT effectiveness, see Beck, 1993). Furthermore, in the 1990s, I coauthored a critical book (D. A. Clark & Beck, 1999) that summarized my early work in developing a novel theory and therapy for depression (as discussed in this article) as well as newer scientific evidence for the efficacy of CBT in treating depression. There have also been major clinical advances in the implementation and dissemination of CBT. A 2015 worldwide survey indicated that CBT is the most broadly used form of therapy in the world (Knapp, Kieling, & Beck, 2015). In addition, in the United Kingdom, CBT has been employed as the dominant modality of therapy in the Improving Access to Psychological Therapies (IAPT) program under the auspices of the National Health Service (NHS), treating more than 500,000 people per year with a variety of mental-health concerns, including depressive and anxiety-related disorders (D. M. Clark, 2018). This substantial focus on dissemination and training of quality CBT clinicians from every continent has been fundamental to the overall acceptance of CBT as the "gold standard" of therapy (David, Cristea, & Hofmann, 2018). Although my personal research has been focused primarily on psychological disorders, it is also necessary to give credit to the innovative researchers who have successfully used CBT to treat a number of medical disorders that even I would have previously written off as impossible to target with psychotherapy. These include diabetes, dementia, hypertension, irritable bowel syndrome, insomnia, and skin diseases.

In this article, I have tried to touch on some of the highlights of my 60 years in psychiatry and mental health. Hopefully these efforts demonstrate my commitment to making a better world through the application of psychological principles.

Action Editor

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The author(s) declared that there were no conflicts of interest with respect to the authorship or the publication of this article.

References

Beck, A. T. (1952). Successful outpatient psychotherapy of a chronic schizophrenic with a delusion based on borrowed guilt. *Psychiatry*, *15*, 305–312. doi:10.1080/00332747.1952.11022883

Beck, A. T. (1963a, November). *There is more on the surface than meets the eye*. Lecture presented in The Academy of Psychoanalysis, New York, NY.

Beck, A. T. (1963b). Thinking and depression: I. Idiosyncratic content and cognitive distortions. *Archives of General Psychiatry*, *9*, 324–333. doi:10.1001/archpsyc.1963.01720160014002

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York, NY: Meridian.

Beck, A. T. (1988). *Love is never enough: How couples can overcome misunderstanding, resolve conflicts, and solve relationship problems through cognitive therapy*. New York, NY: Harper & Row.

Beck, A. T. (1993). Cognitive therapy: Past, present, and future. *Journal of Consulting and Clinical Psychology*, *61*, 194–198. doi:10.1037/0022-006X.61.2.194

Beck, A. T. (1999). *Prisoners of hate: The cognitive basis of anger, hostility, and violence*. New York, NY: HarperCollins.

Beck, A. T., & Hurvich, M. S. (1959). Psychological correlates of depression: 1. Frequency of "masochistic" dream content in a private practice sample. *Psychosomatic Medicine*, *21*, 50–55.

Beck, A. T., Steer, R. A., & Carbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review*, *8*, 77–100. doi:10.1016/0272-7358(88)90050-5

Beck, A. T., & Ward, C. H. (1961). Dreams of depressed patients: Characteristic themes in manifest content. *Archives of General Psychiatry*, *5*, 462–467. doi:10.1001/archpsyc.1961.01710170040004

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, *4*, 561–571. doi:10.1001/archpsyc.1961.01710120031004

Brown, G. K., Ten Have, T., Henriques, G. R., Xie, S. X., Hollander, J. E., & Beck, A. T. (2005). Cognitive therapy for the prevention of suicide attempts: A randomized controlled trial. *Journal of the American Medical Association*, *294*, 563–570. doi:10.1001/jama.294.5.563

Clark, D. A., & Beck, A. T. (1999). *Scientific foundations of cognitive theory and therapy of depression*. Hoboken, NJ: John Wiley & Sons.

Clark, D. M. (2018). Realizing the mass public benefit of evidence-based psychological therapies: The IAPT program. *Annual Review of Clinical Psychology*, *14*, 159–183. doi:10.1146/annurev-clinpsy-050817-084833

David, D., Cristea, I., & Hofmann, S. G. (2018). Why cognitive behavioral therapy is the current gold standard of psychotherapy. *Frontiers in Psychiatry*, *9*, Article 4. doi:10.3389/fpsyt.2018.00004

Ellis, A. (1962). *Reason and emotion in psychotherapy*. Oxford, England: Lyle Stuart.

Grant, P. M., Bredemeier, K., & Beck, A. T. (2017). Six-month follow-up of recovery-oriented cognitive therapy for low-functioning individuals with schizophrenia. *Psychiatric Services*, *68*, 997–1002. doi:10.1176/appi.ps.201600413

Grant, P. M., Huh, G. A., Perivoliotis, D., Stolar, N. M., & Beck, A. T. (2012). Randomized trial to evaluate the efficacy of cognitive therapy for low-functioning patients with schizophrenia. *Archives of General Psychiatry*, *69*, 121–127. doi:10.1001/archgenpsychiatry.2011.129

Kahneman, D. (2011). *Thinking, fast and slow*. New York, NY: Farrar, Straus and Giroux.

Kelly, G. A. (1955). *The psychology of personal constructs: Volume 1: A theory of personality*. New York, NY: W.W. Norton.

Knapp, P., Kieling, C., & Beck, A. T. (2015). What do psychotherapists do? A systematic review and meta-regression of surveys. *Psychotherapy and Psychosomatics*, *84*, 377–378. doi:10.1159/000433555

Loeb, A., Beck, A. T., & Diggory, J. (1971). Differential effects of success and failure on depressed and nondepressed patients. *Journal of Nervous and Mental Disease*, *152*, 106–114. doi:10.1097/00005053-197102000-00003

Loeb, A., Beck, A. T., Diggory, J. C., & Tuthill, R. (1967, September). Expectancy, level of aspiration, performance, and self-evaluation in depression. *In Proceedings of the 75th Annual Convention of the American Psychological Association* (Vol. 2, pp. 193–194). Washington DC: American Psychological Association.

Loeb, A., Feshbach, S., Beck, A. T., & Wolf, A. (1964). Some effects of reward upon the social perception and motivation of psychiatric patients varying in depression. *The Journal of Abnormal and Social Psychology*, *68*, 609–616. doi:10.1037/h0044260

Rush, A. J., Hollon, S. D., Beck, A. T., & Kovacs, M. (1978). Depression: Must pharmacotherapy fail for cognitive therapy to succeed? *Cognitive Therapy and Research*, *2*, 199–206. doi:10.1007/BF01172735

Waltman, S. H., Creed, T. A., & Beck, A. T. (2016). Are the effects of cognitive behavior therapy for depression falling? Review and critique of the evidence. *Clinical Psychology: Science and Practice*, *23*, 113–122. doi:10.1111/cpsp.12152