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Academic Discussion on Therapy Periods in the Intervention Process Aiming to Produce Psychological Change

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Abstract

Gordon Paul was one of the most often quoted questions that has guided psychological interventions for decades when the era of evidence-based therapy first began. His question was: "What treatment, by whom, under what conditions, is most effective for this individual with this particular problem, and how does it occur?" This question has been quoted countless times over the past few decades. (Paul, 1969, p. 44). The aim of Paul's research was to bring the field study closer to theories supported by empirical research and tailored to meet the needs of unique individuals based on already well-established processes of change. Empirical clinical psychology



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has been unable to supply a solution to Paul's query, decades after Paul made this statement. During this time, we have learned a great deal about how to achieve satisfactory results using certain procedures. This failure should not come as a surprise, as interest in this field has rapidly shifted to another field. As an alliance developed between a syndromal approach in academic psychiatry and the intervention science of empirical clinical psychology, research increasingly focused on the impact of treatment protocols on the signs and symptoms of diagnostic entities, as explored in randomized controlled trials. ("A process-based approach to psychological diagnosis and treatment: The ...") This era is ending and innovative approaches to progress that focus more on the individual are now being considered (Ng & Weisz, 2016). In a series of recent articles on what we call Process-Based Therapy (PBT; Hayes & Hofmann, 2018), we have sought to set up a progressive foundation of evidence-based change processes that lead to evidence-based procedures. In doing so, we tried to lay the foundations for what we call Process-Based Therapy (PBT). We propose to propose that, as opposed to the method of using protocols for syndromes, a "functional first" approach will help us build a bottom-up diagnostic system with a focus on the clinical value of the system. The intervention process, which aims to produce psychological change, is a dynamic process that includes many factors. These variables are often studied as mediators and moderators. The connections that mediators make are often complex, two-way, and unique to each person they serve (Hofmann, Curtiss, & Hayes, 2020). These mediators, by definition, respond to specific treatments (called "one way" of mediation) and are concerned with outcomes (called "way b" of mediation, they must be statistically correlated to achieve results beyond any treatment). The terms "treatment procedures" and "mediators" are not entirely interchangeable (Hofmann et al., 2020). However, we can start a diagnostic system with known important agents. This is possible because, unlike the situation four decades ago, when syndromal diagnosis was first introduced to the profession, there are now hundreds of studies on the mediators of clinical outcomes. Taken as a whole, these mediation studies supply a strategic place to ask a new question at the heart of process-based diagnosis. The question is: "Given this goal then, what key biopsychosocial processes should be targeted with this client, and how can they be changed most efficiently and effectively?" (Hofmann & Hayes, 2019a, page 38).



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1. Introduction

The mechanism that occurs in a predictable, empirically established sequence of theory-based, dynamic, progressive, contextually bound, mutable, multi-level change or desired outcomes is referred to as the change process (Hofmann & Hayes, 2019a). They are theory-based in the sense that we relate them to a clear scientific statement of relationships between events leading to testable predictions and methods of influence; *dynamic because they can involve feedback loops and non-linear changes; progressive, because we may need to arrange them in certain sequences to achieve the treatment goal; they suggest practical changes or cores of intervention that are contextually connected and modifiable so that they are directly accessible to the patient; and are contextually dependent and changeable, so they suggest direct practical changes or intervention.*

2. Change Processes

Change processes by themselves cannot supply a cohesive diagnostic system; instead, these processes need to be coordinated. There are already hundreds of these procedures, and they can be daunting for any practitioner interested in performing them. Instead, we need to categorize them according to models that are all-encompassing, self-consistent and practical, and supply complete direction to practitioners and researchers alike (Hayes et al., 2020). In our opinion, there is no better equipped method than an extended evolutionary method that takes into account several dimensions and levels.

3. An Evolutionary Approach

The principles of evolution are the most used concepts in the biological sciences when it comes to trying to understand how complex systems evolve. If you ask an immunologist how the immune



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system came about, he will almost certainly answer with an evolutionary explanation. The same is true when you ask a cardiologist or orthopedist about their field, and they will both give the same answer. While the reasons for this discontinuity become less and less convincing when a psychologist is questioned, this is not yet the case. In the study of evolution, behavioral and mental features are treated in the same way as physical and anatomical features. Non-reductively, one's actions are as " biological" as their hearing . It turns out that choosing juvenile behavioral traits, such as meekness, also brings with it juvenile anatomical traits for the journey. In fact, this example is not arbitrary, as we now know that for decades, foxes have become more domesticated, resulting in the drooping ears that are often characteristic of domestic animals. In other words, choosing for juvenile behavioral traits brings juvenile anatomical traits for driving (Trut , 1999).

The gene-centered approach that evolutionist scientists have adopted in the past, which reduces attention to other evolving dimensions (such as cognition) and other levels of choice, has been a major barrier to using evolution to inform psychological interventions in the past. However, recent research has shown that this barrier can be overcome (for example, the behavior of small groups). Therefore, the application of evolutionary concepts to many areas of interest covering a wide time range from minutes to millennia is simplified. Also, unlike behavior change experts, evolutionary biologists tended to be extremely wary of any suggestion that evolution might have a purpose (Wilson, Andrews, & Thayler , 2018). Tinbergen 's "four questions" approach to any evolution product helps overcome this barrier by asking the following questions about the product:

What are the functions of the products, what are the mechanisms or processes involved in performing these functions, how does a particular feature or feature develop? , and what is the history. If we combine these concerns with a multidimensional and multilevel evolutionary approach, we can develop a purposeful science of change from an expanded evolutionary explanation (Wilson, Hayes, Biglan , & Embry , 2014a, 2014b).

The purpose of this research is to explore whether this method can now be used in the diagnosis of psychopathology and in the formulation of treatment plans. We will try to show that an extended evolutionary approach can supply a solid path forward, and we will present some preliminary



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evidence that this perspective was clearly hidden in the clinical psychology literature for much of its existence. Additionally, we will try to prove that an extended evolutionary approach can supply a solid path forward.

Any field of knowledge, whether immediate or final, will always face the problem of needing some sort of categorization system. The first aim of nosology is to set up a standardized terminology that will enable researchers in each field to see, measure, and talk about the phenomena they meet. This not only eases scientific communication, but also allows information recipients to better understand the scope or significance of a series of events. The distant target is more variable, but the hope is that the observation classes will set out to enable us to predict, influence, and understand events precisely, broadly, and consistently across scientific fields.

A syndromal paradigm has been the primary driver of psychiatric nosology over the past half century . The plan expected that finding empirical clusters of signs (what the practitioner can see) and symptoms (what people complain about) would lead to the discovery of underlying causes that would be expressed in a recognizable mechanical course over time. When there was sufficient evidence that a condition had a known origin, a mechanical course, and a response to treatment, medical professionals considered it a disease. The ultimate practical and scientific purpose of the several types of psychiatric nosology in use today has always been to find certain hidden diseases that are supposed to underlie mental disorders. Although it is a practical method, it has not been shown to be effective in the field of mental and behavioral health. Currently, there is widespread consensus that the clinical relevance of the DSM-5 categories is severely restricted (Maj , 2018), and the possibility of conceptual links between syndromes and underlying disease processes stays more than ever.

single laboratory marker has been found that can specifically diagnose any of the DSM-defined disorders . The notion that the syndromes have separate causes has been refuted by the findings of epidemiological and clinical studies showing extremely high rates of comorbidity among diseases. In addition, research on epidemiology has shown significant short-term diagnostic instability for many different diseases. When it comes to therapy, the lack of therapeutic specificity is usually the norm rather than the exception (Kupfer , First, & Regier , 2002, pp . xviii-xix). In retrospect,



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the evidence-based branch of clinical psychology inadvertently helped to cover up this failure by developing increasingly specific psychosocial interventions that were successful in targeting DSM syndromes and sub-syndromes, evaluated in carefully crafted randomized trials.

4. Especially Cognitive Behavioral Therapy (CBT)

DSM - III in 1980, there was an explosion in research, particularly in cognitive behavioral therapy (CBT). In a recent analysis of current research, the authors found that nearly all of the DSM categories to CBT (Hofmann , Asnaani , Vonk , Sawyer, and Fang , 2012) found that adopting a syndromal emphasis had a heavy cost for psychosocial procedures , although this study yielded significant results. When human problems are viewed as something you have rather than the consequences of what you do , the game may be over for psychological procedures, although empirical evidence for these approaches is available. For example, when patients are given a diagnosis based on the concept of latent illness, they often lose interest in taking part in psychotherapy because they believe that psychotherapy will not help them (e.g. , Zimmerman & Pope, 2019).

In just 10 years from 1998 to 2007, the use of psychosocial change approaches as specific treatment for mental health problems in North America declined by 50 percent. The use of psychological approaches along with medicine also saw a reduction of one-third. Drug use alone triggered the increase. By the end of this decade, nearly two-thirds of people struggling psychologically relied solely on medication to treat their condition, while only ten percent or less relied solely on psychosocial treatments (Olfson & Marcus, 2010). These patterns are difficult to support scientifically, given the potential long-term effects, potential side effects, and price of drugs (Antonuccio , Thomas, and Danton , 1997; Ormel et al., 2020). As for the development of psychosocial therapies , it is a waste of time to put in the significant amount of work needed to produce ever more detailed protocols for syndromes and sub-syndromes if practitioners do not use these procedures adequately. According to Hayes, Nelson, and Jarrett (1987), a diagnosis cannot be considered to have therapeutic usefulness unless evaluation systematically leads to different



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treatment recommendations. However, the specificity of treatment with psychoactive drugs is currently the exception.

There are almost any mental health issues that have not been successfully addressed, for example, using SSRIs . There is a question to be asked: What is the use of syndromal diagnosis in terms of clinical outcomes if it does not change the treatment received ? The biomedicalization of human misery has resulted in several added harmful repercussions on the health of people around the world (Kohrt , Ottman , Panther- Brick , Konner , and Patel , 2020). Mental and behavioral health stands out as areas where human development is insufficient, rather than being a strong human progress area like medicine and other fields of science (Hayes, 2019). There is a problem with the way the scientific development plan is implemented. When other areas of life science faced comparable barriers, researchers often turned their attention to more fundamental questions. Genetic similarity was developed as a useful tool to effectively reorganize the field of plant science when the capacity to categorize plants by topographical features was at an impasse (Morton , 1981). When focusing on the shapes and features of malignant lesions proved unsatisfactory, oncology abandoned the "botanical cancer" approach and instead began investigating genetic, epigenetic, and immune system mechanisms that explain the proliferation of cancerous cells (Croce , 2008).

After the successful mapping of the human genome in 2003, it became clear how complex the gene systems that influence behavioral phenotypes are. Many people had hoped that behavioral genetics alone would supply a similarly useful avenue for psychopathology and its cure. However, this hope was dashed when it became clear how complex gene systems are (Jablonka & Lamb , 2014). Studies that perform full genomic analyzes on tens of thousands or even hundreds of thousands of participants can find genetic risk factors that are at times cumulatively significant. However, these studies have hundreds or even thousands of alleles whose specific functions are often not understood (Crespi , 2020; Cross- Disorder). group of the Psychiatric genomics Consortium , 2013). The hope that behavioral genetics would quickly lead to the identification of specific psychiatric diseases has been replaced by a healthy refocusing towards aspects of psychological phenotypes rather than "disorders". ("A process-based approach to psychological diagnosis and ... - ScienceDirect")



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The fact that behavior is the result of an ever-changing array of different dimensions and levels, involving not only genes but also many other processes, presents an analytical challenge. As a result, behavioral traits that are clearly influenced by genes are not necessarily genetic in the sense that they are a process of change. Take, for example, the issue of appearance. Langlois et al. (2000), one of the most influential demographic factors of which science is aware is a person's level of physical beauty, which is mostly determined by genetics (Gangestad and Scheyd , 2005). These genetically determined differences in appearance fall into a complex web of social and environmental influences. On the one hand, factors affecting our feeling of attractiveness are fitness indicators and the probability of reproduction (Hoffman, 2019). On the other hand, these social and cultural responses of other people, central to the psychological and behavioral impact of physical attraction, can be manipulated by non-genetic means such as plastic surgery or eye contact, supplying clues that are known to be relevant. for health , youth and possible reproductive success. This can be done in many ways (Hoffman, 2019).

Just as we cannot interpret any statistical "main effect" if it takes part in a statistical interaction, we cannot understand the conceptual significance of the genetic dimensions of evolution until we examine and model its interaction with other evolutionary dimensions. This is the case because we cannot interpret any statistical "main effect" if it takes part in a statistical interaction.

The given genome can decide whether a particular individual will develop a psychological problem. This is because different genomes have different combinations of genes that interact with varied sizes and levels of selection . Studies on populations may not always apply to individuals. Since nearly a hundred years ago, we have had a broad understanding of the problem in the physical sciences. We cannot assume that the behavior of the collectives (like a volume of gas) models the behavior of a single element (like a gas molecule) unless the material in question is "ergodic ", meaning that all elements are elements. is the same and is not affected by the change processes. Only then can we make such an assumption (see Birkhoff , 1931 for the original mathematical proof). These conditions exist (for example, some ideal gases are ergodic ; Volkovyskii and Sinai , 1971), but they do not exist in the field of biobehavioral science, which includes psychopathology. No one assumes that people with a particular mental diagnosis will respond in the same way, in order or pattern, to the many factors that may influence symptoms .



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On the other hand, if psychological phenotypes are not ergodic , statistical methods based on inter-individual variation cannot accurately assess the contribution of given elements to phenotypic change (Molenaar , 2008). Therefore, we need a novel approach to model the role of genes in clinical psychology as just one of the multiple dimensions and levels of diversity, selection, retention and context sensitivity that together make up a particular behavioral phenotype. (“A process-based approach to psychological diagnosis and treatment:The ...”) Specifically, we need to model the role of genes as just one of multiple dimensions and levels of diversity, selection, retention and context sensitivity (Hofmann et al., 2020).

Effect of Environment and Behavior on Epigenetic Processes

We see a concrete example of the problem when we examine how genes are regulated up and down through the influence of environment and behavior on epigenetic processes (Schiele , Gottschalk , & Domschke , 2020). (“A process-based approach to psychological diagnosis and treatment:The ... ”) Environmental events and going with psychological functions can lead to epigenetic changes (such as methylation of cytosine or bundling of histones) that alter gene expression. These changes have the potential to result not only in long-term changes in traits in an individual, but also occasionally in later generations and ultimately changes in genetic fitness (Jablonka and Lamb , 2014). Even in the absence of DNA diversity, the stability of epialleles can be kept across generations (Johannes et al., 2009).

Taken as a whole, these facts suggest that not only epigenetics but also psychological events that influence epigenetics (such as learning processes, emotional processes, and cognitive processes) should be included in any extended evolutionary synthesis to be applied to psychopathology . (“A process-based approach to psychological diagnosis and treatment:The ...”) This is because learning processes, emotional processes, and cognitive processes all have the potential to influence epigenetics. In non-human animals, the evidence for extremely long-term and even intergenerational changes in gene expression because of programmed changes in environment and behavior influencing epigenetic factors is clear. (“A process-based approach to psychological diagnosis and ... - ScienceDirect”) These changes can even be passed on from one generation to



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the next. For example, mice with a gene that promotes learning ability extracted from their genomes and then placed in an environment enriched with increased social interactions, new objects, and voluntary exercise, not only did the mice themselves show epigenetic changes. despite having a genetic defect led to an enhanced learning ability, but so did their offspring. This was the case even though the gene promoting learning was removed (Arai , Li, Hartley , & Feig , 2009). We also know that psychological therapies can alter the shorter-term epigenetic processes at play in humans. For example, just two months of meditation has been shown to cause changes in gene expression across about 7 percent of a person's genome through induced epigenetic changes. These changes occurred mostly in stress-sensitivity-related regions of the genome (Dusek et al., 2008). We also know that catastrophic environmental events such as prenatal starvation can have long-lasting and multi-generational consequences (Jablonka & Lamb , 2014).

It is not an overly ambitious assumption to think that psychotherapy can change some of these forms of action. RDoC Initiative is the First Step towards the Process As it became clear after decades of research and clinical trials that the DSM-5 offers little innovation compared to its predecessors, the National Institute of Mental Health (NIMH) Research Area Criteria (RDoC; Insel et al ., 2010) initiative emerged as an attempt to move the field of psychiatry forward by shifting it towards a more fundamental process. The aim was to develop a research agenda with the potential to produce a classification system that integrates both biological and behavioral data, rather than relying solely on topographical problem characteristics derived from clinical impressions and subjective symptom reporting. The RDoC encouraged researchers to explore a variety of different units of analysis (such as positive and negative motivational systems) at various levels of analysis (such as molecular, brain circuitry, behavioral, cultural, and symptom level) to find them.

Subjective experiences are listed as well as cognitive, emotional, motivational, social, cultural, and behavioral aspects of a person's past and current problems, but with the assumption that they play a relatively minor role or only matter where they change. ("A process-based approach to psychological diagnosis and treatment:The ...") This is because these factors are believed to have relatively negligible effect on the condition. This " bio -bias" is reflected in the statement "mental illnesses are brain disorders" made by the former director of the NIMH (Insel et al., 2010, p. 749).



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If we don't understand the brain, we can never fully grasp mental illness, so such a statement implies that to understand mental illness we must understand the brain, because otherwise, we wouldn't be. can fully understand mental illness. The effort to shift the focus to a predetermined significant role for the brain has been openly discussed and documented in the public domain. RDoC has adhered to the three guiding concepts listed below : "To begin, the RDoC framework considers that mental illness is caused by abnormalities in the brain. On the other hand, mental disorders can be treated in the same way as brain circuit disorders, unlike neurological disorders with identifiable lesions. Second, the RDoC classification is neural assumes that dysfunction in circuits can be found using clinical neuroscience tools.These tools include electrophysiology, functional neuroimaging, and new methods to measure in vivo connections. Third, the RDoC classification is based on the hypothesis that the RDoC classification can be used to predict the outcome of RDoC. For clinical management purposes Fear and no Being, reward, executive function, and impulse control are some examples of areas where clinically relevant models of circuit-behavior relationships point to potential future clinical applications. A clinical assessment of what we have can be supported in future practitioners, for example, by data from functional or structural imaging, genomic sequencing, and laboratory-based fear conditioning and extinction assessments to decide prognosis . and proper treatment is like what is routinely done in many other areas of medicine today (Insel et al ., 2010, p. 749). " The RDoC initiative was met with a series of reactions from those concerned. Most neuroscientists have expressed approval of the initiative (Casey , Craddock , Cuthbert , Hyman , Lee, and Ressler , 2013). Other people thought it was too reductionist and focused too much on biology, so they criticized it (Deacon , 2013; Miller, 2010).

is recognized by the authors and directors of the initiative that the RDoC has limited clinical value; its primary purpose is to enhance future research, but it is not currently intended as a guide for clinical decision making. This is something accepted by the RDoC. (Cuthbert & Kozak, 2013; Vaidyanathan et al). Despite encouraging the field to return to the laboratory, the RDoC initiative shared with the DSM the strong theoretical assumption that dormant diseases are the root cause of psychological problems and that we will discover these "diseases" through research. focused on nonthetic collections. In DSM , these latent structures are quantified through symptom reports and clinical impressions, but in RDoC , the latent disease variant can be measured through



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sophisticated behavioral tests and biological tools such as genetic testing and neuroimaging. For example, DSM measures these latent constructs through symptom reports and clinical impressions. In theory, RDoC opens the door to a complex network approach that supplies a different, less restrictive, and more robust theoretical foundation for an empirically based categorization system (Hofmann & Hayes, 2019a). However, the reductionist and biocentric application of RDoC , the ongoing search for dormant diseases, and the interpretation of change processes as ergodic events acted to suppress this potential. After some time, Insel left his post as NIMH director and is now the NIMH's director . It is unclear whether it will remain committed to RDoC .

Insel reflected on her time at the National Institute of Mental Health: *"I spent 13 years at NIMH really studying the neuroscience and genetics of mental disorders, and looking back, I think I was successful. I don't think we're moving the needle to reduce suicide, reduce hospitalizations, or improve the recovery of tens of millions of people with mental problems, about getting a lot of really great papers published by cool scientists at pretty high costs - \$20 billion I think -. I have no one to blame but myself for this"* (Insel , quoted in Rogers, 2017). It seems that the new director of NIMH is heading in the same direction. Joshua Gordon is more empirically clear , although he actively acknowledges the flaws in the method of a brain- RDoC . It is based on the etiological model rather than turning towards an approach.

These dysfunctions are, in themselves, a reflection of changes in the physiological states of the brain, and each of these changing states has an underlying cause. (Cited by Gordon, Zagorski , 2017) We do not underestimate the potential importance of genetics, neuroimaging, or neurobiology in our research. How processes of biopsychosocial change work require a solid basic knowledge of the biological aspects of development (e.g., Horn , Carter and Ellis , 2020). Our own research suggests that neuroimaging can predict treatment outcome (Anteraper , Triantafyllou , Sawyer, Hofmann , Gabrieli , and Whitfield-Gabrieli , 2014; Doehrmann , Ghosh , Polli , Reynolds, Whitfield-Gabrieli , Hofmann , Pollack , and Gabrielmann , 2013 ; Hof 2013); and some of the psychological processes we examined appear to function as endophenotypes that help connect behavioral traits (Gloster et al., 2015). Rather, it is unclear whether patients or medical professionals would be willing to rely on expensive diagnostic procedures or extensive genetic studies to guide treatment. Additionally, to fully understand brain responses, we need to examine



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them as partially dependent variables; *this means that they are influenced by the environmental history and context rather than the independent variables that are the contributing factors.* Similarly, to fully understand genetics, we need to understand its function as a part of a multidimensional and multilevel dynamic system (Andrews, Maslej, Thomson, & Hollon, 2020). *Clinical psychologists should not lose sight of the broader context in which their work is proper.*

has the belief that billions of dollars of incremental spending on "protocols for DSM syndromes" will result in scientific or therapeutic progress. Instead, organizations that supply funding for mental health research place the responsibility of discovering functionally important processes of disease and change on researchers. The field of clinical psychology will benefit greatly from this opportunity. The decades-long era for protocols for syndromes, patented treatments, and closed schools of thought is ending and seems to be replaced by a more process-oriented era. While investigating the implications of a process-based approach, we believe this will result in a greater focus on the dynamic, idiographic, multidimensional, and multi-level aspect of human functioning (Hofmann & Hayes, 2019b).

In some ways, the field of diagnosis and intervention is an experience like what it would be like to experience when climbing a spiral staircase that brings the person back to previously discovered ground. On the other hand, the discipline has advanced a lot since the last time it focused on idiographic processes of change, so it can be compared to a stair climbing experience. For example, humanistic treatment (for example, Rogers, 1951) ran on the assumption that a person's psychological problems were not the product of an underlying disease process, but rather resulted from the individual's specific history and maladaptive coping mechanisms. Maslow (1962), emphasizing the necessity of an idiographic and process-based approach, "I must treat a person as a unique and different individual, the only member of his class".

Experimental methodologies needed to set up a systematic, reproducible and validated classification and intervention system were not included in this more qualitative study approach. This was the main shortcoming of this strategy.

Behavioral methods have made a comparable effort to explore what is unique in an individual using functional principles of person-level variation and choice, and their progression throughout



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their lifetime. Behaviorists used an approach to the treatment of psychological problems based on functional analysis derived directly from probability concepts. The difficulty was that the set created by these operations was extremely limited in scope. It quickly became clear that we needed a theory of human cognition that was both more robust and useful. To understand human functioning, behavioral therapists quickly incorporated concepts derived from social learning or neo-behavioral associative learning into Skinner's operant conditioning principles (Bandura, 1969; Eysenck, 1961; Wolpe, 1958). The first forms of cognitive behavioral therapy (CBT), which was developed as a cognitive approach as pioneered by Beck (1970) and Ellis (1962), appeared with the strengthening of this cognitive approach. In these early forms of CBT, practitioners focused on maladaptive cognitions as contributors to emotional distress and behavioral problems. These promising beginnings in the process were significantly hindered when attention was turned to ideas and procedures that could be matched with the concept of latent disease. The history of panic disorder is a good example of this idea. The original concept of "Panic Disorder" was founded on a model of medical illness that assumed distinct and mutually exclusive syndromes, each with an organic etiology and specific indications for treatment. This "Panic Disorder" model was the basis for modern understanding of the condition (Klein, 1964; Klein & Klein, 1989).

When Clark (1986) first presented his cognitive model, he penned the following introduction to it: "Paradoxically, the cognitive model of panic attacks can perhaps be most easily introduced by discussing studies that focus on neurochemical and pharmacological approaches to understanding panic." (p. 462). In Clark's (1986) approach, panic attacks were considered the result of a catastrophic misinterpretation of certain bodily symptoms, such as palpitations and shortness of breath. A healthy person's feeling of palpitations as a sign of an imminent heart attack is an example of the disastrous mistake that can be made when information is misinterpreted. The vicious circle of the cognitive model suggests that a state of anxiety is triggered by various external (like a supermarket) or internal (like body sensations or thoughts) stimuli if these stimuli are perceived as threatening:

For example, if a person believes that there is something wrong with their heart, they are less likely to view the palpitations that triggered an attack as different from the attack itself



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but are more likely to view both events as manifestations of the same phenomenon (Clark, 1986, p. 463).

However, the concept does not exclude the involvement of any biological element, rather it is assumed that biological factors may play a role in the onset of an attack. Therefore, pharmacological treatments may be effective in reducing the frequency of panic attacks if they reduce the frequency. Persistence of bodily fluctuations that can trigger panic or block bodily sensations that go with anxiety. Both factors are necessary for treatment to be successful. However, if the patient's tendency to interpret physiological sensations as alarming does not change during drug therapy, discontinuation of drug therapy should be associated with a high probability of recurrence. There is support for this paradigm .

5. Conclusion

Patients with panic attacks who were educated about the side effects of inhaling CO₂ reported less anxiety and fewer worst-case thoughts about the worst-case scenario than those who were not taught (Rapee , Mattick , and Murrell , 1986). In addition, patients with panic disorder who felt they could regulate the amount of carbon dioxide (CO₂) they exhaled by turning a non-working dial were less likely to have panic attacks than patients who were aware that they had no such control (Sanderson , Rapee , & Barlow, 1989). The fact that these ideas could be standardized and manualized to target panic disorder as a syndrome meant that there was little need to link specific treatment components to individual functional analysis. This was a lurking problem, but a problem, nonetheless. The same basic scenario was recounted over and over as the golden age of "protocols for syndromes " began. While there has been a significant increase for research and funding devoted to psychotherapy studies, transformation processes have received less attention. A collection of concerns that appeared in the late 1990s and early 2000s that shed light on the necessity for both theoretical and philosophical progress. These included empirical challenges, such as the unexpected success of overt behavioral modalities such as behavioral activation (Jacobson, Martell , & Dimidjian , 2001); (Dimidjian et al., 2006; Jacobson et al., 1996); early response to treatment that does not fit the accepted model (Ilardi & Craighead , 1994); and



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challenges to consistency of evidence regarding processes of change (for example, Bieling & Kuyken , 2003; Morgenstern & Longabaugh , 2000). However, as the century turned, what was well understood in evidence-based psychotherapy was now being reviewed, and these concerns coincided with growing concern about the appropriateness of a diagnosis of the syndrome . In other words, the era of "protocols for syndromes" has end as concerns about the appropriateness of protocol-based intervention as well as the appropriateness of syndrome -based diagnosis have grown.

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