



Review and Analytical Articles

EVIDENCE-BASED PSYCHOLOGICAL PRACTICES: PRINCIPLES OF AN INTERDISCIPLINARY APPROACH IN PSYCHOTHERAPY

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Abstract

Relevance. The purpose of the article is to expand the frame of "evidence" of psychological practices thanks to the leading ideas of modern physics and the latest research in psychology.

Methodology. In preparing the article, a post-nonclassical methodology was used in the course of theoretical and methodological research, namely the principles of modern theoretical physics, which postulate the features of the current understanding of the scientific picture of the world and the laws and features of its existence. The author's modern interpretation of the basic philosophical categories of space and time, uncertainty and freedom, order and chaos, etc. is used to substantiate the prospects of a comprehensive (multidisciplinary) approach to the problem of evidence in the creation and use of modern psychotherapeutic approaches and psychological practices.

Results. The article considers the problem of updating the methodological foundations of psychology and psychotherapy in the context of integration with the principles of modern physics and philosophy of science. It is shown that traditional evidence-based practices, which are based on the mechanistic paradigm, need to be supplemented with a new ontology of the psyche, where consciousness and internal experience are considered as fundamental characteristics of reality. A comparison is made between classical evidence-based methods (cognitive-behavioral therapy, dialectical-behavioral therapy, schema therapy, systemic family therapy, trauma work methods) and the principles of modern physics (relationality, uncertainty, entropy, nonlinearity, superposition).

Conclusions. The need for the integration of interdisciplinary knowledge for the development of new evidence-based approaches that take into account the complexity, multidimensionality and openness of mental processes is substantiated.

Keywords: modern physical picture of the world, quantum uncertainty, entropy, relationality, psyche as a fundamental reality, psychotherapy, evidence-based practices.

Relevance

Modern psychology is increasingly integrated with other sciences, striving to go beyond classical biological reductionism. There is growing interest in an interdisciplinary approach that combines data from cognitive science, neuroscience, quantum physics, and systems theory. In this context, questions arise: How to interpret "evidence" in the light of

a new ontological platform of psychology? and can the fundamental principles of modern physics serve as a new methodological basis for understanding psychological practice?

The purpose of this article is to expand the framework of “evidence” of psychological practices through the leading ideas of modern physics and the latest research in psychology.

Methodology

Methods. When writing the article, theoretical tools of a comprehensive (interdisciplinary) approach, categorical and comparative analysis of the relevant scientific literature were used. The starting point for implementing a multidisciplinary approach to the problem of evidence of modern psychological practices were the theoretical and methodological provisions of the post-nonclassical paradigm of scientific research.

Results

Evidence-based psychological practices traditionally rely on experimental efficacy studies and clinical meta-analyses (Chambless & Hollon, 1998). However, modern science suggests that the phenomenon of the psyche itself can be understood in a broader ontology - as one of the fundamental dimensions of reality, similar to space, time or energy (Chalmers, 1996; Penrose, 2016). This opens up new horizons for psychotherapy: the search for tools to restore the balance of the client's psyche not only within the biopsychosocial system, but also in the interaction of professional consciousness with the deep laws of the existence of beings.

1. Evidence-based practices in the classical paradigm of psychological science.

In the second half of the twentieth century. the emphasis in psychology was placed on the standardization of methods and verification of their effectiveness. In particular, cognitive behavioral therapy (Beck, 2011), dialectical behavioral therapy (Linehan, 1993), and schema therapy (Young et al., 2003) have become the gold standard of evidence. These practices were built on a paradigm of linear causal thinking: a symptom arises from a dysfunctional thought or behavior, and therapeutic intervention eliminates the imbalance.

This approach corresponds to classical Newtonian physics - predictable, deterministic, and mechanistic. However, with the development of science, it becomes obvious: the psyche cannot be reduced to biological mechanisms or to individual cognitive processes. It functions as a dynamic (dissipative) system (, open to context, probabilities and uncertainty (Friston, 2010; Varela et al., 1991).

2. Principles of modern physics (foundations of natural sciences) as methodological guidelines for modern post-nonclassical psychology.

2.1. The principle of relativity and the relationality of experience. A. Einstein in the General Theory of Relativity showed that space and time are not absolute quantities, but depend on the reference frame (Einstein, 1916/2019). For psychology this means, that a person's subjective experience is always relative and contextual. The psychotherapist should work not with “objective reality”, but with the client's individual coordinate system.



In modern cognitive neuroscience, memory is increasingly viewed not as a static preservation of the past, but as an active reconstruction that takes place here and now. This approach is presented, in particular, in the works of Daniel Schacter (1999, 2001), who emphasizes that memory is a form of imagination — both future and past. That is, we do not “remember” an event in its pure form, but “recreate” it, using fragments, schemes and scenarios that are complementary to the events that are happening in our lives.

2.2. Quantum uncertainty and freedom of choice. Heisenberg’s uncertainty principle and Born’s probabilistic interpretation prove that at the micro level the world is not deterministic (Heisenberg, 1930; Born, 1954). Psychotherapeutic practice from this perspective views a person as an open system with a multiplicity of possible future scenarios. This correlates with the techniques of working with alternative life scenarios in cognitive and narrative therapy (White & Epston, 1990).

This idea is also developed by Karl Friston in his theory of active inference, according to which the brain constantly generates hypotheses about the world, and memory is not the preservation of facts, but a way of forming and testing models of reality (Friston, 2010). Remembering the past is a process in which the brain’s prediction is correlated with sensory (real or imagined) experience. If a discrepancy arises — a prediction error — the model is updated.

This provides a powerful explanation for the mechanism of psychotherapy: changing perceptions of the past is possible when the client, in a safe environment, experiences a new experience that does not correspond to old (traumatic) models. Thus, according to Friston, psychotherapeutic intervention is a tool for reducing prediction errors, which updates both memories and reactions to them.

2.3. Entropy, time and memory. Physics defines the arrow of time through the increase in entropy (Carroll, 2016). For psychology, this opens up a new approach to working with trauma: memory is not a fixed record, but a dynamic process of reconstruction (Schacter, 2001). Psychotherapy becomes a means of integrating the past into the present, which reduces the “entropy” of the mental system. The idea of entropy allows us to look at life and death from a new perspective: personal existence is an attempt to order and maintain subjective experience at a low level of entropy. Individual consciousness collapses again and again with a new choice and with high entropy of the system can quickly collapse.

2.4. The principle of non-equilibrium dynamics developed in the works of the Nobel Prize winner in 1977, the Belgian physicist Ilya Prigogine (Ilya Prigogine) introduces into scientific circulation the categories of non-equilibrium and nonlinearity of time, order and chaos. In the work “Time. Chaos. Quantum. Toward a solution to the paradox of time”. he writes: “...at all levels, be it the level of macroscopic physics, the level of fluctuations or the microscopic level, the source of order is non-equilibrium. Non-equilibrium is what generates “order from chaos” ... If stable systems are associated with the concept of

deterministic, symmetric time, then unstable chaotic systems are associated with the concept of probabilistic time, which involves a violation of symmetry between the past and the future". (Prigogine I., Stengers I., 2003)

Therefore, modern physics of complex systems shows that even insignificant influences can radically change the trajectory of the system (Prigogine & Stengers, 1984). This echoes the processes of psychotherapy, where small insights or symbolic changes can cause profound transformations of the personality.

3. A new ontology of psychotherapy: the psyche as a fundamental reality. Modern philosophers of consciousness (Chalmers, 1996; Strawson, 2006) and researchers of consciousness in physics (Penrose, 2016) propose to treat the psyche not as a derivative of biology, but as a basic characteristic of being. This approach changes the goals of psychotherapy: from treating symptoms to harmonizing the interaction between consciousness, body and universal processes.

In this perspective, the psychotherapist becomes not only a "behavior corrector", but a guide for the client in the space of possibilities. Practice moves from mechanistic techniques to work with resonance, synchronicity (Jung, 1952/2011) and the integration of multidimensional human experience.

4. Practical implications for evidence-based approaches:

➤ Cognitive-behavioral therapy gains new tools for working with uncertainty, integrating probabilistic prediction models (Friston, 2010).

➤ Trauma-focused methods take into account the reconstructive nature of memory and work with the "rewriting" of experience (Schacter, 2001).

➤ Existential therapy finds confirmation in the principle of quantum openness: freedom of choice is an ontological property of reality.

➤ Systems therapy considers the family as a nonlinear open system capable of self-organization (Minuchin, 1974).

➤ Integrative approaches (e.g., narrative therapy) resonate with the principle of relationality of experience: the client's story always depends on the context (White & Epston, 1990).

Thus, the new ontology does not reject evidence, but expands its methodological foundation.

Discussion

The combination of psychology and ideas of modern physics opens up prospects for a new science of consciousness. However, there are also risks, such as: a) the danger of simplified metaphorizations; b) the need for empirical verification of new models; c) the challenge of integrating natural and humanitarian methods. At the same time, interdisciplinarity makes it possible to expand the idea of evidence: from purely clinical results to confirmation of universal principles of functioning of complex systems.



Conclusions

Evidence-based psychological practices require an updated methodological foundation. The principles of modern physics allow us to see the psyche as a fundamental dimension of reality, operating according to the laws of uncertainty, relationality, and nonlinearity. This opens up opportunities for a deeper integration of science and practice, where psychotherapy appears not only as psychological help, but also as a way of harmonizing consciousness in a multidimensional world.

Conflict of interests. The author declares that she has no conflicts of interest.

Disclaimer. The author declares that his thoughts and views expressed in this manuscript are not subject to the influence of any organizations.

References

- Prigogin I., Stengers I. Chas. Chaos. Quantum. (2003). To resolve the paradox of time. M.: Editorial URSS. URL: philsci.imiv.kiev.ua/biblio/vrema-haos.html [in Ukrainian]
- Beck, J. S. (2011). Cognitive behavior therapy: Basics and beyond (2nd ed.). Guilford Press.
- Born, M. (1954). Natural philosophy of cause and chance. Oxford University Press.
- Carroll, S. (2016). The arrow of time and the meaning of life. Dutton.
- Chambless, D. L., & Hollon, S. D. (1998). Defining empirically supported therapies. *Journal of Consulting and Clinical Psychology*, 66(1), 7–18. <https://doi.org/10.1037/0022-006X.66.1.7>
- Chalmers, D. J. (1996). The conscious mind: In search of a fundamental theory. Oxford University Press.
- Einstein, A. (2019). The theory of relativity (Original work published 1916). Penguin.
- Friston, K. (2010). The free-energy principle: A unified brain theory? *Nature Reviews Neuroscience*, 11(2), 127–138. <https://doi.org/10.1038/nrn2787>
- Heisenberg, W. (1930). The physical principles of the quantum theory. Dover.
- Jung, C. G. (2011). Synchronicity: An acausal connecting principle (Original work published 1952). Princeton University Press.
- Linehan, M. M. (1993). Cognitive-behavioral treatment of borderline personality disorder. Guilford Press.
- Minuchin, S. (1974). Families and family therapy. Harvard University Press.
- Penrose, R. (2016). Fashion, faith, and fantasy in the new physics of the universe. Princeton University Press.
- Prigogine, I., & Stengers, I. (1984). Order out of chaos: Man's new dialogue with nature. Bantam.
- Schacter, D. L. (2001). The seven sins of memory: How the mind forgets and remembers. Houghton Mifflin.
- Strawson, G. (2006). Realistic monism: Why physicalism entails panpsychism. *Journal of*

- Consciousness Studies, 13(10-11), 3–31.
- Varela, F.J., Thompson, E., & Rosch, E. (1991). *The embodied mind: Cognitive science and human experience*. MIT Press.
- White, M., & Epston, D. (1990). *Narrative means to therapeutic ends*. Norton.
- Young, J.E., Klosko, J.S., & Weishaar, M.E. (2003). *Schema therapy: A practitioner's guide*. Guilford Press.

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