

Towards an Integration of Psychoanalysis and Neurobiology in 21st Century

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ABSTRACT

The »inner world« of the mind was, in the past, the traditional preserve of psychoanalysis and related disciplines, and it was therefore placed at the margins of neural science. During 1990-ies numerous investigations in the field of neuroscience have led to significant findings, which explain biological correlates of psychological functions. There are much scientific evidence that support association between psychoanalysis and neuroscience. Psychoanalysis offers a unique in-depth perspective on the psychology of human motivation, and furthermore has contributions both to make and to receive in the gathering scientific integration.

Key words: psychoanalysis, neurobiology, integration, psychiatry

From Biological to Psychoanalytical Approach

Psychoanalysis has traditionally been exposed to many critiques because of the lack of scientific evidence. During 1990-ies, in the decade of brain, numerous investigations in the field of neuroscience have led to significant findings, which explain biological correlates of psychological functions. In our earlier work¹, we have discussed some of the neurobiological researches that are applied in the field of psychotherapy. One of the phenomena that are investigated on psychoanalytical and biological level is aggression. In the last hundred years we are beginning to understand violent and aggressive behaviors, in terms of seeking a wiser, non-judgmental and more humane approach. In the past these violent acts were often ignored, like in the cases of infanticide in the Ancient Greece and Rome^{2,3}, or the perpetrators were punished through sadistic vengeance, which appeared to be a form of an unconscious identification with the aggressor³. Psychoanalysis and psychoanalytic psychotherapy gave a large contribution to understanding of aggressive and violent behaviors and acts, thus broadening the treatment possibilities^{4,5}. However, psychoanalysis itself has been frequently subjected to the »aggressive treatment«. Psychoanalyst Peter Fonagy stated: »Whilst one can comfort oneself by saying that such attacks are by no means new (for example, John Watson in the 1930s gave psychoanalysis 20 years and thus ushered in what is

generally regarded as the heyday of the development of psychoanalytic ideas), the pervasiveness and intensity of recent critiques cannot be shrugged off«. Daniel F. Connor (2002), for example, says: »Psychiatry, as the branch of medicine that deals with human behavior, mood, cognition, and mental illness, has long been concerned with the problem of human aggression and violence. From much of the past century, however, psychiatry's approach to this problem was through psychoanalysis.

Psychoanalysis and Neuroscience

The failure of psychoanalysts to use empirical methods and to scientifically test and validate their theories has led to a turning away from these approaches in psychiatry. More recently, theories from neurobiology, neuropharmacology, developmental psychopathology, and integrated biosocial approaches to aggression, which are testable via experimental methods, have helped move the field forward.« Eric Kandel has published many papers regarding neurobiology of behavior including psychoanalysis^{7,8}. In an attempt to place psychiatric thinking and the training of future psychiatrists more centrally into the context of modern biology, Kandel outlines the beginnings of a new intellectual framework for psychia-

try that derives from current biological thinking about the relationship of mind to brain. According to Kandel, change of behavior (through psychotherapy) alters gene expression, not only medications.

It is well known fact the »inner world« of the mind (being and living a life) was, in the past, the traditional preserve of psychoanalysis and related disciplines, and it was therefore placed at the margins of neural science. As Oliver Sacks⁹ pointed out: »Neurology itself had to evolve from the mechanical science that thought in terms of fixed »functions« and »centers«, a sort of successor to phrenology, through much more sophisticated clinical approaches and deeper understandings, to a more dynamic analysis of neurological difficulties in terms of functional systems, often distributed widely through the brain and in continual interaction with each other. Solms and Turnbull¹⁰ commented on the former situation in neuroscience and said that neuroscientists have not considered subjective mental states (like consciousness, emotions, dreaming) to be suitable topics for serious brain research. They also commented on so often misunderstood »moment of transition« in the 1890s when Freud appeared to abandon a neurological explanation for psychoanalysis¹¹. Solms and Saling¹² pointed out that the reason for this was precisely a very inadequate state of neurological (and physiological) understanding at the time, not any turning against neurological explanation in principle. Freud, in fact, knew that any attempt to bring together psychoanalysis and neurology would be premature. But even under this circumstances Freud himself made his last attempt at trying to connect the mind with the brain's anatomy and physiology in his »Project for scientific psychology«¹¹ and he finally left that article unpublished in his lifetime.

Coming Together – Neuroscience and Psychoanalysis

There are some authors who correctly emphasize that perhaps researchers who are equally trained in neuroscience and psychoanalysis^{7,8,10}, will, to the some extent, conjoin the insights and approaches of neuropsychology and psychoanalysis, to aim at a science richer than either⁹. However, as both of these scientific fields are very complex and very rich, it would be unrealistic to expect more than a few researchers trained in both directions. In the same time the concern exists, and it is nicely expressed through the statement of Crick¹³ »you, your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will are, in fact, no more than the behavior of a vast assembly of nerve cells« in which »you« is reduced, as Solms and Turnbull¹⁰ pointed out, to nerve cells. These authors commented that the essence of Crick's reductionism resides in the words »in fact, no more than« and reductionism reduces one thing to another (in this case, mind to brain). They also argued that many cognitive scientists today hold the view that the mind is an emergent property of the brain. Both are equally real, but they exist at different levels of complexity. From this point

of view it could be said that in neuroscience one was dealing with tangible, physical things and could literally »see« what was being talked about; »this is GABA, this is glutamate, hence this stuff is going to excite, and this stuff is going to inhibit this cell...«¹⁰. Where controversy exists, neuroscientists can make some experiments to test what is right and what is wrong. Thus, science builds more and more areas of findings on which universal agreements exist and the whole experiments can be replicated. All of this is due to the fact that the evidence that underpins theory in neuroscience is relatively unambiguous¹⁰. In psychoanalysis it is a rather different situation. In it the researchers work with subjective experience, with stories from the real life of examinees, made up of thoughts, memories and feelings, as they develop in the relationship between therapist /researcher and patient/ »examinee«. Subjective experience is very difficult to verify experimentally. Solms and Turnbull¹⁰ stated that due to the difficulties of making experiments in psychoanalysis, and because the evidences are so seldom clear-cut, the field has tended to fractionate into groups based around strongly held theoretical positions. The important question that is left for scientist to answer is what are we really made of? Solms and Turnbull¹⁰ commented that the tissue that builds us can never be directly observed, without first creating a representation of it using one of the perception modalities. That would mean that the artificial mind-body dichotomy couldn't be avoided. We can gather concrete information about the two manifestations of mental apparatus (brain and the subjective awareness), but this main entity, the mental apparatus itself, could never be the subject of direct scientific observation, thus our idea of it remains figurative, it serves as a model. So, scientific observation has its limits. Another detail makes this situation unique; the observer of the human mental apparatus is in the same time the subject of observation. The difference between one's self (psyche) and one's body (brain) is merely an artifact of observation. The mental apparatus is observable from two different perspectives simultaneously, firstly as a material object, and secondly as subjective awareness. Conclusions derived from subjective data (from the psychoanalytic method) provided only one kind of evidence, and that evidence from the scientific point of view has limitations. However, subjective data should not be despised, for it provides insight that cannot be gained from any other perspective. In the light of this, we could conclude that there is a need for integration of our two modes of inquiry¹⁰. The integration does not reduce one perspective to the other, like Solms and Turnbull¹⁰ stated: »linking the invisible world of subjectivity with the visible tissues of the brain deepens immeasurably what we can discern with our objective eyes«.

Conclusion

In conclusion, there are much scientific evidence that support association between psychoanalysis and neuroscience. Gabbard¹⁴ suggests that pharmacotherapy and psychotherapy, the major treatment modalities in psychiatry, have become fragmented from one another, creating

an artificial separation of the psychosocial and biological domains in psychiatry which could lead to poorer outcome of therapy. As Cooper¹⁵ noted, »it is inherent in the nature of science to be refreshed by discourse in other disciplines«. Psychoanalysis offers a unique in-depth perspective on the psychology of human motivation, and furthermore has contributions both to make and to receive in the gathering scientific integration¹⁶.

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PUT PREMA INTEGRACIJI PSIHOANALIZE I NEUROZNANOSTI U 21. STOLJEĆU

S A Ź E T A K

Unutrašnji svijet uma, dugo je bio u prošlosti domena kojom se bavila psihoanaliza i srodne discipline te je zbog toga bio smješten izvan područja istraživanja neuroznanosti. Tijekom 1990.-tih brojna neuroznanstvena otkrića dala su objašnjenja bioloških osnova psiholoških funkcija. Danas postoje mnogi dokazi koji govore u prilog povezanosti psihoanalize i neuroznanosti. Psihoanaliza sa svoje strane nudi jedinstven i dubinski pogled na psihologiju ljudske motivacije uz značajne doprinose na razini integracije znanosti.