

THIS ISSUE:

THE NEUROBIOLOGY OF THE UNCONSCIOUS

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Guest Editors



The theory that the human mind contains both conscious and unconscious components has been a cornerstone of psychiatric thought for the past century. The main idea behind this important hypothesis is that information processing in the brain occurs simultaneously at two main levels: one conscious, or fully accessible to cognitive processes, and one unconscious, or hidden from cognition. In addition, both conscious and unconscious processes are able to influence behavior.

The notion that “hidden,” or unconscious factors, can influence behavior is consistent with human experience. We commit “crimes of passion,” have difficulty dieting, and suffer from a variety of obsessions and addictive disorders. In a 1915 paper entitled “The Unconscious,” Freud justified his use of this important concept:

“Our right to assume the existence of something mental that is unconscious and to employ that assumption for the purposes of scientific work is disputed in many quarters. To this we can reply that our assumption of the unconscious is necessary and legitimate, and that we possess numerous proofs of its existence.

“It is necessary because the data of consciousness have a very large number of gaps in them; both in healthy and in sick people psychical acts often occur which can be explained only by presupposing other acts, of which, nevertheless, consciousness affords no evidence. ... All these conscious acts remain disconnected and unintelligible if we insist upon claiming that every mental act that occurs in us must also be experienced by us through consciousness; on the other hand, they fall into a demonstrable connection if we interpolate between them the unconscious acts which we have inferred.”¹

For Freud, behavior was unintelligible if its only causative component was confined to conscious experiences. On the other hand, the uncovering of unconscious factors, like an unfolding set of clues in a detective story, could provide logical explanations for seemingly unexplainable acts. Freud and his intellectual successors devoted many lifetimes to defining practical and theoretical systems for extracting and understanding the unconscious precipitants of behavior.

This issue of *Psychiatric Annals* comes at an exciting time in the his-

tory of the unconscious. Experimental work has demonstrated beyond any doubt that the brain contains numerous circuits that operate unconsciously, but nevertheless influence many aspects of behavior. The Freudian unconscious, which was born more than a century ago, clearly needs to evolve in light of the new biological discoveries. Some would argue more strongly that Freudian concepts should be scrapped altogether. We leave this issue for each reader to decide. In our opinion, many Freudian and neo-Freudian concepts have relevance for psychiatrists even today, and a new conceptualization, based on the best of the old and the new, could energize our discipline.

The articles in this issue deal with many aspects of unconscious processes and their relevance to psychiatry. Dr. Iacoboni discusses an exciting topic with wide psychiatric implications in his article titled “Face to Face: The Neural Basis of Social Mirroring and Empathy.” Dr. Iacoboni presents both a historical perspective and the results of his original research on the “mirror neuron” system in humans. He describes the discovery of mirror neurons, elucidates their neuro-

anatomy, and discusses their clinical implications. Mirror neurons in humans, as Dr. Iacoboni explains, are located in the posterior part of the inferior frontal gyrus, as well as in the anterior part of the posterior parietal cortex. These neurons have a number of unique properties. First, the inferior frontal mirror neurons (contralateral to Broca's area) encode inferred intentions with respect to observed actions. Second, mirror neuron areas are part of a large-scale neural network that performs internal simulations of the actions of others to facilitate an understanding of their meaning. In this context, mirror neurons are a key component of the neural circuits that facilitate empathy. As might be expected, mirror neuron activity is impaired in socially based disorders, such as autism, and may represent a core deficit in these illnesses. Mirror neurons represent the key to sharing subjective meaning among human persons. They are an essential component of social exchanges at both conscious and unconscious levels, and a critical element in psychotherapeutic interactions.

Drs. Viamontes and Beitman explore the neuroanatomy and function of unconscious circuits in their article, "Mapping the Unconscious in the Brain." Several novel concepts are introduced, including a provisional, five-level functional classification of unconscious processes. The generation of maps of the self and the environment that are used by both conscious and unconscious circuits to guide behavior is described in detail. The neural substrates that underlie common unconscious processes, as well as the role of emo-

tions in the generation of behavior, are elucidated. Clarifying the neurobiology of unconscious processes is the first step toward the integration of a scientifically revitalized unconscious into the theory and practice of psychiatry.

Drs. Beitman and Viamontes contribute a second article with a practical perspective entitled, "Unconscious Role Induction: Implications for Psychotherapy." The premise of this work is that when people communicate, not only do they exchange explicit content, but also implicit

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signals, aimed at inducing a desired role in the listener. Moreover, the implicit, role-inducing communication is usually exchanged at an unconscious level. Role-induction phenomena are extremely important in a psychotherapeutic setting. The authors make a distinction between paracomunication, or the process of exchanging implicit contents unconsciously, and metacommunication, which refers to any cognitive, verbal exchanges about the relationship between the people communicating. Psychotherapists must learn to activate their "observing selves" in order to manage the paracomunications of patients. An understanding of unconscious role-induction phenomena in psychotherapy is

the first step toward helping patients develop more adaptive paracomunications.

Dr. Gabbard discusses an important manifestation of the unconscious in the psychotherapeutic setting in his article, "Unconscious Enactments in Psychotherapy." According to Dr. Gabbard, Sigmund Freud noted that what patients don't remember and verbalize will be unconsciously repeated in action during psychotherapy. This is the original meaning of the term "acting out" and is one of the most common manifestations of unconscious processes. Empirical research has provided a great deal of support for such psychoanalytic constructs as unconscious motivation. For example, prejudiced people show distinct unease and subsequent functional impairments when exposed to the object of their prejudice. Unconscious enactments are based on recognition of an old, emotionally charged pattern (eg, rejection by a parent figure) and unconscious preparation of the body to deal with the predicted outcome of encountering such a pattern once more. It is important for the therapist to discern the signs of unconscious enactments. The development of more adaptive behavior requires engagement of the patient's cortical resources to enable differentiation of new patterns from the old and to develop new action sequences.

Dr. Blinder discusses "The Autobiographical Self: Who We Know and Who We Are." In his paper, Dr. Blinder describes how both conscious and unconscious processes create each person's sense of self. He defines autobiographical memory as

“an extended consciousness that conveys a lived past, an ambient present, and an anticipated future.” According to Dr. Blinder, autobiographical memory begins to emerge around age 4. At this time, the neural circuits necessary for creating autobiographical representations become functional. Autobiographical memories are not static, but dynamic, and reflect the current state of the individual. For example, emotional states can affect the level of detail that is remembered. “Lack of memory specificity,” in fact, is a feature of many mood disorders. Autobiographical memory is a key ingredient in defining each person’s individuality, and its many intricacies are often the focus of psychotherapy.

Dr. Kheriaty provides a resident’s perspective of this month’s topic in an article entitled, “The Return of the Unconscious.” Dr. Kheriaty begins by describing a hypothetical encounter with a “seasoned dynamically-trained supervisor” whose explanations seem to obscure rather than inform the resident’s understanding of unconscious processes. Dr. Kheriaty then presents a well-developed philosophical discussion of the concept of the unconscious and ends with an affirmation of the importance of unconscious processes both in life and in psychiatry. Although the guest editors are not quite ready to “dispense with the Freudian un-

conscious,” as Dr. Kheriaty’s hypothetical resident convinces himself he should do, Dr. Kheriaty’s paper resonates with the guest editors’ perspective that a significant evolution of psychiatric views of the unconscious is in order.

The guest editors hope that this collection of articles draws attention to unconscious processes, and encourages lively debate as well as scholarly interest in developing a new, biologically informed view of the unconscious.

REFERENCE

1. Freud S. The Unconscious. In: *The Freud Reader*. 1989. Gay P, ed. New York, NY: WW Norton & Company, Inc.; 1989:572-584.

about the guest editors



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was born in Cuba and came to the United States at age 11. He has a BS in Biology from the University of Notre Dame, and a PhD in Biology from Washington University, St. Louis. After he received his doctorate, he completed a fellowship in Immunogenetics at the Sloan-Kettering Institute in New York. Dr. Viamontes led a research group in Immunobiology at Ortho Pharmaceutical Corp.

for 4 years. He later obtained his MD from St. Louis University, where he also completed his residency in psychiatry. Dr. Viamontes is about to publish an illustrated book on the neurobiology of the self, and some of the graphics in this journal are previews of that work.



Bernard D. Beitman, MD, is professor and chair of the Department of Psychiatry at the University of Missouri – Columbia. He is the author of the award winning *Learning Psychotherapy*, now in its second edition, *The Structure of Individual*, and *Integrating Psychotherapy and Pharmacotherapy*, and is co-editor of *Self-Awareness Deficits in Psychiatric Patients*.