

A Columbia Scholar Looks at the Future of Analysis

Robert Pollack

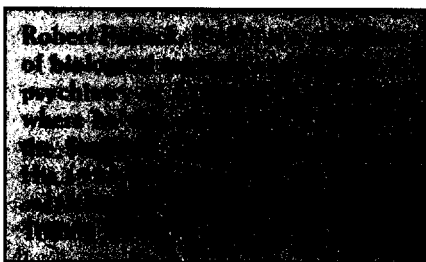
The Center for Psychoanalytic Training and Research (CPTR) at Columbia University is the first psychoanalytic institute to be established within a university and a medical school. Since its inception in 1947, CPTR has sought collaboration with the larger academic community to explore relations between psychoanalytic thought and such disciplines as literature, aesthetics, sociology, anthropology, history, and philosophy.

The center has established an Affiliate Scholar program to bring practitioners and scholars of other disciplines to the center for longer periods. In 1998–99 I had the privilege of being the center's first Affiliate Scholar from the field of molecular biology. In June 1999 I was invited to join the faculty of the center as a lecturer in psychiatry.

I came to CPTR in the fall of 1998 with three purposes in mind: to bring a psychoanalytic perspective to my studies of the practices of biomedical science, to understand the ways in which Freud's writings reflected his early Jewish education, and to find a way to use my scientific knowledge and training to bring together psychoanalysis and biology. Remarkably, the center helped me to clarify my thinking in each of these areas. Better, in the past year I have reoriented my scholarly work in directions laid open to me through my classes and conversations with people I've met through CPTR. This has so changed my academic affect that I would guess some of my colleagues in the Biology Department would see what I consider the success of the affiliate scholars program as my having taken leave of my senses.

Here's what I've done with my year at the Center.

My attempts to apply the psychoanalytic notion of shared unconscious fantasies, wishes, and fears to the practices of my own field of science became an essential part of my latest book, *The Missing Moment: How the Unconscious Shapes Modern Science*, scheduled for publication in September 1999 by Houghton Mifflin. Here is an excerpt from the book, which shows the influence of the center on my thinking.



Solely on the conscious level, science thus reduces to a mixture of ritual and game, complete with a game's obedience to its own rules, austere unworldliness, and willful naïveté. The conscious part of science is what most scientists would insist is all there is to science: an agenda for understanding nature. However, based on what we know of some minds, we can expect that the minds of scientists and therefore perhaps even the mind of science — the communality of experience and motivation shared by most scientists — have both conscious and unconscious parts. Just as the conscious part of science is shaped by the set of simple and universal rules that govern the conscious activity of all scientists, engaging and pooling the efforts of many different peoples' conscious minds, the unconscious parts of the mind of science — in particular, the sciences that serve medicine — would be expected to emerge as fantasies and obsessions shared by scientists in these fields.

While the notion that scientists might share their unconscious fears and conscious fantasies, dreams and myths may seem disingenuous, meaningless, or just plain silly, recall that until not too long ago, many serious observers thought it was disingenuous, meaningless or silly to imagine that an individual brain might contain — within its biological functions — any individual mind at all. The early behaviorist assumption that the mind is an illusory, ineffable byproduct of the brain's mindless application of instinctive rules had to be set aside in light of what we now know about the brain's functional anatomy. It is time to follow up on that conclusion, to set aside the notion that science can operate in the present moment without an unconscious component to its deliberations. Science is the product of the unconscious sources of imagination and introspection, as much as it is the product of a set of rules. The emotions and memories shared by scientists in the same field are its inner voice, and there is no reason that these inner voices should not be dealing with the same unconscious, repressed memories as do any of a field's practitioners. The question is not whether, but how, the unconscious aspects of science, refracted in maturity through its methods, resurface in ways that deflect the course of science itself.



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Taking into account what we now know about the mind's operations within the brain, we can now predict that shared fantasies of science are likely to be built from early memories of scientists, especially memories storing very strong negative or positive limbic affects, and ordinarily kept from consciousness by repression. Though science may seem at first remote from unconscious memory or conscious fantasy and obsessive behavior, it remains a human enterprise, and the fantasies of infancy are likely to be the same, whatever a person's later career. When negative affects are dealt with in the same way by a group of people linked by language and culture, their shared fantasies can crystallize into a core of collective myth. ...

There is a way for the life sciences to put an end to their denial of [science's] own unconscious, freeing it from the obfuscation and inefficiencies it creates today out of its own fantasies. An enlightened medical science would acknowledge that there are limits to conscious thought and to life itself that cannot be transcended by any rational agenda. It would then be able to stop making promises that it cannot keep, whether to itself or to the rest of us who pay its way. Having next acknowledged the unconscious memories of its practitioners and the shared fantasies they have generated, it would then be ready to find ways to diminish the influence of these fantasies on its conscious agendas.

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Freud's Unconscious

My second reason for joining CPTR was to understand how Freud's own past, and in particular the religious component of that past, channeled his work along paths that he himself might have denied following. I was quickly disabused of this notion in class and outside it — "wild analysis" was one of the kinder epithets I can recall. But the ongoing debate within the Freud course over the relevance of Freud's own life to his work left its mark on me, and this discussion will continue in a novel context. I have recently been given a grant from the office of the Executive Vice Provost for Research at Columbia to establish an interdisciplinary and interschool Center for the Study of Science in Low Library. Bob Click has agreed to serve as a member of its advisory board. I suspect that one of the first issues this center will examine will be the different internal representations of the natural world in the minds of religious people and scientists.

My third reason for coming to CPTR — to help along the burial of the long-dead mind/brain problem and to assist at the birth of a neurobiology informed by analytic models of the mind — has dropped me into a very interesting and exciting part of the scientific world. I have to be careful here not to let my enthusiasm outrun my obligation to be plausible: I know from experience that I am at risk of seeming awkwardly optimistic. But after this year at CPTR I am willing to stake thirty years of running a lab — and spending tax money on basic biomedical research — on the conviction that the human mind is wholly an expression of the tissues of the body, largely but not solely of the tissues within the skull, and that therefore an understanding of any mental process can and will be understood at the level of differential gene expression in cells within these tissues. This seems to me to be deeply correct and easily located within Freud's *Project for a Scientific Psychology*. Any competing model would be likely to call upon ineffable expressions of non-material events, which would not be available for study by science in any event.

Since I joined the center, our colleague Eric Kandel has written two beautiful and important papers laying out a host of specific research pathways with one purpose in mind: to bring biology and psychoanalysis together using the tools of the day. Papers from other labs come out every month, providing clear evidence of precisely the changes in the brain that Kandel's papers predict. Labs studying the developing minds of infant brains, in particular, seem to have found ways to integrate functional neuroanatomy with analytically based ideas, sometimes in remarkably rewarding ways.

The Role of the Brain

For instance, consider recent studies on the cingulate gyrus, a region deep inside the brain, close by the limbic systems associated with emotional states and far from the prefrontal cortex associated with the executive functions many analysts call ego functions. It is not too hard to create what seems to be a purely executive, conscious task for the brain and to look at which regions of the brain are activated at different times after that task is undertaken.

There is nothing very emotionally rich about the Stroop test, in which one is asked to read a series of words for the names of colors. In the first list, the words are printed black on white. In the second, the words are printed in the color they represent: "Red" is printed in red, and so on. In the third, each word is printed in a different color: "Red" is printed in blue, "green" in red, and so on. When the words are colored differently from their meaning, the brain must choose which color to say as one reads — a classic executive task.

Elegant new work by M. I. Posner and by B. J. Casey (both of them now at Cornell Medical School and therefore academic cousins of ours) tells us that the cingulate gyrus is activated first, well before the prefrontal cortex, when the brain tries to pass the Stroop test. Activation of the prefrontal cortex and motor cortex occurs only hundreds of milliseconds after this initial limbic-associated event. Casey showed earlier that the sequential activation of cingulate and cortex during executive function grows in at around the second or third year of infancy, as an infant learns that making a decision helps to regulate strong emotional states. Most recently, and most remarkably, Posner's work also suggests that these circuits do not develop normally in autistic children.

Taking studies like these at face value, I have to conclude that the brain is showing us what close observation and analytic theory both predicted: As the human brain develops in infancy and early childhood, executive functions normally build upon circuits in the cingulate gyrus and elsewhere that were first established as expressions of an infantile, emotional unconscious. This portion of human developmental neurobiology is consistent with Freud's pre-neurobiological, metaphorical construction of a Reality Principle built upon and developing from a Pleasure Principle. "Where id was, there will ego be."

Based on my year at CPTR, one line of work stands out as most exciting. A few decades ago, two prospective studies changed the way many Americans lived their lives. The Framingham study established a baseline of data from which it was possible to extend the lives of many men, and some women, by adjusting diet and behavior. The Surgeon General's Report established beyond statistical doubt the causal link of smoking to lung cancer, emphysema, and high blood pressure. I would

like to be involved in setting up a prospective study to provide the baseline of information needed for the molecular elucidation of the psyche. Such a prospective study would be able to provide the sort of baseline of functional anatomy over time that the Human Genome Project will provide for the eventual analysis of human gene function in health and disease. It would determine the developmental, functional anatomy of the newborn human brain, the ways in which this functional anatomy changes with growth and development, the ways in which the changes are linked to various quantifiable behaviors, and — the payoff — the ways in which, when quantifiable behaviors are changed by analytical intervention, the functional anatomy of the brain is changed as well.

CPTR has a program in infant-mother psychotherapy that could become the core of just such a prospective study. By itself, this new program is certain to benefit the mothers and infants it helps, whether those pairs are referred as being at risk or entering the program because the mother wishes to do the best possible job of parenting. If the infant-mother program were buttressed by proper collaborative structures, it could be expanded into a prospective, simultaneous behavioral, analytic, and brain-function study of a statistically significant number of people from the months before birth through adolescence.

With a prospective study of the development of self-representation, CPTR might well be able to complement today's structures of perinatal care and early education with recommendations for the enhancement of mental and physical health in later years. It would also have the data needed to create at last a unified psychiatry that did not make invidious distinctions between the psyche and the brain, a psychiatry in which psychoanalysis would continue to be a critical and necessary component.

Somewhere, some day, this immense but rewarding project will get under way. If I'm lucky enough to be part of such an effort at Columbia, I will have at least partially repaid my debt to the center for having invited me to be an affiliate scholar this past year.

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