The future of psychiatry

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Freud put with much frustration into a bottom drawer his “Project for a Scientific Psychology” and edited the “Interpretation of Dreams”, since he missed the neurophysiological data in order to develop a theoretical framework for the biological basis for mental processes. Today he would be gratified about the dramatic gains in all areas of psychotherapeutic and psychopharmacological intervention. Psychiatrists are the only clinicians with experience in biopsychosocial understanding and intervention. In order to provide quality psychiatric care, there must be significant increases in the number of psychiatrists in most parts of the world, but especially in developing countries, since comprehensive systems of psychiatric care now exist only in a few areas. There is information that no system, including the ICED, is universally accepted for psychiatric diagnoses, while the DSM, does not cover the understanding of the role of psychic mechanisms and cultural influences. In the future, a common ICD/DSM model should be developed that will incorporate developmental experience, neurobiology, psychological and cognitive processes. This is a tremendous challenge and opportunity. The
influence of technology will be profound, but difficult to predict with specificity. Telepsychiatry, “virtual reality” programs to treat phobias are developed, while modification of mental functions, such as memory or emotional responsiveness based on genetics and information technology are still in an infant state and computer modeling of mental processes is primitive. Although, information systems can be used to great benefit in spreading research and in medical communication, important issues are raised concerning confidentiality and the privacy of personal medical records. In education, virtual experiences, telemedicine and internet applications can offer a lot. On the other hand, psychiatry must face challenge to preserve the “human” within an increasingly mechanistic world. Some might assert that with our increasing understanding of brain structure and function, future psychiatric practice relies primarily on somatic, not psychotherapeutic interventions. It is also true, however, that for the foreseeable future and for our own practice lifetimes at least, therapeutic transactions in psychiatry will occur in the context of the relationship between a physician and a patient. For the coming century, our challenge is not to decide which is the most important framework for interpreting or treating but the preservation of the biopsychosocial orientation to understanding mental disorders and the advance of an intergraded approach on our complex understanding of human emotions, behaviour and psychopathology. In order to achieve this, conversation and exchange of opinions should be maintained between younger and older psychiatrists.

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Just over a hundred years ago, Freud finished working on two manuscripts. One, the *Interpretation of Dreams*¹, would become a seminal work in the development of psychoanalysis and twentieth century psychiatry. The other, *Project for a Scientific Psychology*², was put, with much frustration, into a bottom drawer, and not discovered by the psychiatric community until the 1950’s, when his papers were being examined. In the “Project”, Freud was trying to develop a theoretical framework to describe the neurophysiological basis for mental processes. Although he claimed to have given up on this attempt, in part because of the state of understanding of the central nervous system at the time, a review of his theories after reading the Project shows that many of the ideas he was attempting to develop there later appeared in his writing as psychological theorizing. Freud himself said that his psychological theories would be supplanted once psychiatrists had better knowledge of the workings of the brain. Psychoanalysis itself, he felt, was only a transitional way of treating psychiatric problems, and would also later be changed as we gained the capacity to intervene directly at a neurobiological level.

Freud would be both amazed and gratified about the dramatic gains in our knowledge base over the last century. In spite of the economic difficulties facing all of medicine around the world, this is the most exciting time in history to be in psychiatry. Our profession is robust and our knowledge base is expanding dramatically. Research advances in many areas, ranging from molecular genetics, to new psychotherapeutic and psychopharmacologic interventions, to new systems of treatment, are transforming our understanding of brain function and the etiology, diagnosis, and treatment of psychiatric illness. Work in neural plasticity, for example, with findings that developmental experiences, not just genetic endowment,
alter brain structure and function, has reinforced the view that the best approach to psychiatric understanding and intervention is the biopsychosocial model, which has formed the core of our approach for decades.

With continued expansion of our knowledge base and as the only clinicians trained with expertise in biopsychosocial understanding and intervention, our roles as providers of sophisticated psychiatric care and coordinators of treatment should be enhanced. While our interventions for biologically based brain dysfunction will become more effective, patients will still require concomitant psychotherapeutic and psychosocial treatments to help them live in a new world of perception and experience, now no longer affected by the symptoms of their illness. Also, our ability to help those whose disorders are primarily developmentally based should continue to improve due to advances in psychotherapy already underway. To adequately provide quality psychiatric care, there must be significant increases in the number of psychiatrists in most parts of the world, but especially in developing countries. Further, comprehensive systems of psychiatric care now exist in only a few areas.

It is clear that there have been tremendous gains in our ability to develop modern clinical diagnostic systems. The advances in ICD\textsuperscript{3} and the DSM\textsuperscript{4} both illustrate these gains, as well as our dilemmas in diagnosis. While tremendous advances have occurred, all diagnostic systems are still symptom cluster approaches, and we are a long way from an etiologically based categorization of illness. There is good information from the World Health Organization that no system, including the ICED system, is universally accepted for psychiatric diagnoses. It is also well known that the DSM system is not used much at all outside of North America. The
advances in the DSM system over the last 20 years have allowed for reliable diagnoses in clinical and research settings. This has allowed for tremendous advances in our ability to conduct meaningful clinical research. But, in few places in the DSM-IV is provision made for understanding the role of psychological conflict or developmental distress in the development of the symptoms we see. In few places in the capacity for symptoms to have symbolic meaning taken into account, nor are cultural influences on psychopathology given sufficient attention. While plans are underway for a joint ICD/DSM development project which will move us toward a more etiologically based diagnostic classification in the coming decade, we still need a model for understanding of diagnosis that incorporates the complexities of developmental experience, neurobiology, and psychological and cognitive processes. This remains a tremendous challenge and opportunity for the future.

The influence of technology on our profession will be profound, but difficult to predict with specificity. We have clearly come to a time in history when it is taken for granted that human physical presence is not necessary for communication. The increasing use of telepsychiatry is an example of this. This poses interesting challenges for psychiatrists as we contemplate the future of our profession in the information age.

Except for unforeseen societal catastrophe, there is little question that computing technology will continue its exponential rate of development. This advances in “virtual reality” devices, as an example, bring us close to a point when it may be moot to ask if experiences in a “virtual” environment are “real” or “valid”. For example, some behavior therapists are now using virtual reality programs to treat phobias. Further, as computer logic systems advance to a point where “artificial” intelligence systems mimic human
mental processes, our ability to not only understand, but to modify mental processes will take a quantum leap.

We are on the cusp of an abrupt transition to a new, mostly human-created developmental environment. We know of the tremendous advances being made in genetics and the likely impact on physical status; we should also anticipate a parallel ability to recreate, and modify, ourselves mentally through advances in both genetics and information technology. Even more amazing, direct human brain-machine interfaces are now being developed—the best known examples are cochlear implants for use in the hearing impaired and similar systems for the blind. Also, some of you are aware of recent success in accomplishing the growth of dendrites into very small plastic implants in the brain. Devices to modify memory or change patterns of emotional responsiveness have already been developed, for example, to simulate the vagal nerve to treat depression.

Control of such technology will likely become one of the most critical societal decisions of the information age. The coming political battlers in the United States over confidentiality of patient records are only a beginning of this ongoing debate. However, we have many issues to address and many useful applications of technology to implement, even with all of our concerns in mind. At present, our use of computer technology in psychiatry in clinical care, education and research is in its infancy. My own area of research, for example, using computerizing EEG “brain-mapping” techniques is still in a primitive stage of development. Although advances in brain-imaging techniques occur regularly, our ability to localize brain activity is still rudimentary. Computer use for “number crunching” has revolutionized research, but computer modeling of mental processes is primitive.
In the clinical arena, there is potential that information systems can be used to great benefit in large-scale treatment matching/clinical outcome research and other types of clinical and basic research. However, threats to patient records confidentiality, because of the widespread transmission of clinical information across computer systems, are now a major concern. As I have said, the outcome of deliberations regarding privacy of medical record data is uncertain, with tremendous concern that the battle to preserve confidentiality may have already been lost.

Educational uses of technology are also in the earliest stages of development. Especially in psychiatric education, the experiential mode of learning forms the heart of our training. What can be appropriately learned through “virtual” experience remains a fascinating challenge for educators who find great potential efficiency, as well as effectiveness, in new educational tools. Telemedicine and internet applications can have great benefit, especially in areas of the world with few psychiatrists, and underfunded educational programs.

Thus, we have an unparalleled set of challenges as information technology and psychiatry intersect. On one hand, there is tremendous excitement as we explore meaningful ways of using present computer systems in our research, education and clinical missions. At some point, however, as more and more of our world is formed and modified by electronic information, we have to face the issues I have just raised. The American science fiction writer Philip K. Dick, in the 1950’s and 60’s continually investigated the nature of reality and its potential modification via technology. In his imagined universes, machines designed as simulacra of humans often show themselves to be more “human” than their flesh and blood counterparts. Our profession of psychiatry, placed in the role of arbiter
of sanity and reality, both by virtue of our training and by societal sanction, must face the challenge of preserving the “human” within an increasingly mechanistic world. This task will become of more and more central importance as our world undergoes the chaotic and often painful transmutation into the next iteration of the information age.

While some might assert that with our increasing understanding of brain structure and function, future psychiatric practice relies primarily on somatic, not psychotherapeutic, interventions. As a neuroscience researcher myself, I know firsthand how incredible our advances in understanding brain function and structure as a result of new neuroscience research techniques, and how exciting is the potential to be able to intervene more directly to influence brain function than we are present. We have, though, a tremendous challenge facing us as we work to integrate our exploding knowledge base into a true biopsychosocial perspective. It is also true, however, that for the foreseeable future, and undoubtedly for our own practice lifetimes, therapeutic transactions in psychiatry will occur in the context of a relationship between a physician and a patient. For the coming century, our challenge is not to decide which is the most important framework for understanding or in which to intervene, or which of a wide range of treatment interventions is the one to choose. Rather, our challenge will be to preserve a complex understanding of mental functioning, to preserve a biopsychosocial orientation to understanding the etiology of mental disorders, and to maintain an integrated approach to treatment as the only logical one based on our complex understanding of human emotions, behavior and psychopathology.

In contemplating the future, it is clear that many discussions with colleagues and awareness of our recent advances in psychiatry have
influenced me. Many of the ideas I have discussed here, however, are in my mind because of many long conversations with my children, now all young adults in their twenties. Perhaps the most important point regarding the future is to remind ourselves to keep talking with our younger colleagues and our children. They clearly know more about the future than we do, and certainly from our children’s point of view, they really don’t mind helping mom or dad to anticipate what lies ahead.