CONCEPTUAL BASES OF PSYCHIATRY FOR THE PERSON

Biological Perspectives on Psychiatry for the Person

C. Robert Cloninger MD[a], Mohammed T. Abou-Saleh MPhil PhD FRCPsych[b], David A. Mrazek MD[c], Hans-Jürgen Möller MD[d]

a Wallace Renard Professor of Psychiatry, Washington University School of Medicine, St Louis, Missouri, USA
b Professor of Psychiatry and Consultant in Addiction Psychiatry, St. George's, University of London, UK
c Professor and Head, Deparment of Psychiatry and Psychology, Mayo Clinic, Rochester, Minnesota, USA
d Chairman, Department of Psychiatry, Ludwig-Maximilians University, Munich, Germany

Keywords
Learning, non-linear dynamics, personality, plasticity, self-regulation

Accepted for Publication: 19 January 2011

Introduction

The World Psychiatric Association's Program on Psychiatry for the Person is founded on the World Health Organization's recognition that health is a state of physical, mental, social, and spiritual well-being, rather than merely the absence of disease (WHO 2001; Mezzich 2007). The WHO definition of health indicates a holistic perspective that a human being cannot be reduced to a material body alone. The whole person is comprised of physical, mental, and spiritual aspects. What may not be obvious to the casual observer, however, is the fact that each of the three aspects of a person has a distinctive biological basis. Different biological systems are involved in the regulation of physical processes (e.g., sexuality, digestion, movement), algorithmic mental processes (e.g., emotional expression, language, logical reasoning), and self-aware creativity (e.g., art, science, spirituality) (Cloninger 2004). Measures of psychological well-being and ill-being have been shown to be associated with numerous biomarkers, adding to a growing literature indicating that the biological correlates of well-being and ill-being are mostly distinct, rather than opposites extremes of common processes (Ryff, Dienberg Love et al. 2006). Any rigorous understanding of the biological perspective on Psychiatry for the Person must recognize the nature of these distinctive biological processes and their implications for promotion of positive health and for the prevention and treatment of ill health.

Three Systems of Learning and Memory

The biology of the three aspects of a human being is instantiated in three distinct systems of learning and memory, which reflect the long evolutionary history of mankind. Human beings have different systems of learning for habits and skills, for facts and propositions, and for intuitions and personal narratives in self-awareness. These three systems are usually called the procedural, semantic, and auto-noetic (i.e., self-aware) learning systems (Tulving 1987). There is prominent development of procedural learning in primitive mammals, propositional learning in primates, and self-aware learning in modern human beings. The distinctive properties of each of these three systems are summarized in Table 1.

Table 1. Distinctive Properties of three systems of learning and memory in human beings

System	Form of Learning	Qualitative Properties
Procedural	Habits and Skills	Prelogical Emotion-laden Quantitative (variable strength) Not self-aware
Semantic	Facts and Propositions	Logical Algorithmic Hierarchical Not self-aware
Auto-noetic	Intuitions and Narratives	Self-aware Holistic Biographical Creative and freely willed

These three systems of learning interact with one another over the life course and their maturation and integration is the basis for individual differences in susceptibility to psychopathology as well the development of personality, health, and well-being (Tulving 2002; Cloninger 2004). Examples of dysfunction in these

systems leading to psychopathology include phobias and addictions for the procedural system, psychoses for the semantic learning system, and dissociative states and personality disorders for the auto-noetic learning system.

There is no adequate neurobiological explanation for consciousness (Kandel, Schwartz et al. 2000), but it is clear that each of these three systems of learning and memory plays an important role in mental health and illness. Neuropharmacological and somatic therapies target procedural learning, as in treatments of anxiety and mood disorders with antidepressants and mood stabilizers, or semantic learning, as in treatments of schizophrenia with antipsychotics. Some forms of psychotherapy focus on procedural learning also, as does behavior therapy, or on semantic learning, as does cognitive therapy to strengthen logical reasoning. Third-wave psychotherapies focus on the development of self-awareness to enhance well-being, as in positive psychology (Seligman 2002), dialectical behavior therapy (Linehan 1993), mindfulness-based cognitive therapy (Teasdale, Segal et al. 2000), mentalization-based treatment (Fonagy and Bateman 2006), and coherence therapy (Cloninger 2006).

This wide range of different therapeutic approaches has been developed in order to provide effective ways to influence the various biological systems in human beings. Pharmacotherapy and cognitive therapies can influence mood and thinking, but cannot increase a person's self-awareness without his or her active effort to grow in understanding. On the other hand, many people with mental disorders cannot develop their potential for self-awareness and well-being until their emotional distress or illogical thinking is treated in ways that do not depend on their understanding or motivation. Likewise psychosocial and neurobiological approaches to treatment are not really separate in that they both target brain systems for regulation of learning. Accordingly, diagnosis and treatment of mental disorders is really a psychobiological process in which "biological" methods may be used to enhance psychological processes, just as "psychological" methods may be used to enhance biological functions. For example, brain function improves coincident with remission of obsessive-compulsive disorder in response to treatment with either antidepressants or cognitive behavior therapy (Linden 2006).

Psychobiological Principles of Psychiatry for the Person

Too often psychiatry has been guided by either "mindless" or "brainless" approaches that try to divide the whole person into separate entities of mind or body (Eisenberg 2000). Instead Psychiatry for the Person emphasizes the need for integrative approaches that recognize the psychobiological nature of both positive health and ill health.

Some try to reduce the whole person to deterministic molecular processes, but genetic and other biological research is showing that most mental disorders are complex multifactorial processes in which multiple genetic and environmental factors interact (Smith, Cloninger et al. 2008). Major brain pathways are specified in the genome, but personalized connections are uniquely fashioned by, and consequently reflect, socially mediated experience in the world (Eisenberg 1995). Furthermore, human behavior is not the passive consequence of genes or even gene-environment interactions; rather human beings shape their environment and influence the expression of their own genome by their self-aware actualization of their personal life narrative within the broad constraints of the rich innate endowment of human beings. Gene expression is a dynamic adaptive process. Individuals shape and are shaped by the changing expression of their genomes (Cloninger 2004). The human genome can be viewed more as a basic design that can be actively modified to enhance human potential by a self-aware person, rather than as a fixed antecedent determinant of human behavior. Psychobiological treatment of any of the systems of human learning may be helpful in optimizing the well-being of a person.

The complexity of human development, therefore, must be understood within its psychosocial and neurobiological context of each individual's unique genetic and cultural inheritance and his or her life experiences. Recognition of the uniqueness of each person's background, strengths, and weaknesses calls for a personalized approach to each person, rather than a rigid set of recipes. Evidence-based treatments are valuable as an initial guide for consideration, but it is unlikely that there could ever be an evidence-base to guide combinations of multiple neurobiological and psychosocial treatments that are needed to treat most people with mental disorders. Likewise, health is more than the remission of disease – health requires reduction of vulnerability to illness and the cultivation of positive health, positive emotions, life satisfaction, and virtues like hope, kindness, and patience. In other words, well-being depends on the maturity and integration of personality, particularly the combination of Self-directedness, Cooperativeness, and Self-transcendence (Cloninger 2004). The personality traits important for well-being are about equally influenced by genetic factors and by influences unique to each individual. Consequently, diagnosis and treatment of the person depends on an integrative person-centered approach that recognizes the fact that biological and psychological processes are intertwined inextricably.

References

[1] Cloninger, C. R. (2004). Feeling good: The science of well being. New York, Oxford University Press.

[2] Cloninger, C. R. (2006). "The science of well-being: an integrated approach to mental health and its disorders." *World Psychiatry* 5: 71-76.
[3] Eisenberg, L. (1995). "The social construction of the human brain." *American Journal of Psychiatry* 152(11): 1563-1575.
[4] Eisenberg, L. (2000). "Is psychiatry more mindful or brainier than it was a decade ago?" British Journal of Psychiatry 176: 1-5.
[5] Fonagy, P. and A. Bateman (2006). "Mechanisms of change in mentalization-based treatment of Borderline Personality Disorder." *Journal of Clinical Psychology* 62(4): 411-430.
[6] Kandel, E. R., J. H. Schwartz, et al. (2000). Principles of Neural Science. New York, McGraw-Hill.
[7] Linden, D. E. J. (2006). "How psychotherapy changes the brain - the contribution of functional neuroimaging." *Molecular Psychiatry* 11: 528-538.
[8] Linehan, M. M. (1993). Cognitive-behavioral treatment of Borderline Personality Disorder. New York, Guilford Press.
[9] Mezzich, J. (2007). "Psychiatry for the Person: Articulating medicine's Science and Humanism." *World Psychiatry* 6: 1-3.
[10] Ryff, C. D., G. Dienberg Love, et al. (2006). "Psychological well-being and ill-being: do they have distinct or mirrored biological correlates." *Psychotherapy and Psychosomatics* 75(2): 85-95.
[11] Seligman, M. (2002). Authentic Happiness: Using the new positive psychology to realize your potential for lasting fulfillment. New York, Free Press.
[12] Smith, M. J., C. R. Cloninger, et al. (2008). "Temperament and Character as Schizophrenia-related endophenotypes in non-psychotic siblings." *Schizophrenia Research* 104: 198-205.
[13] Teasdale, J. D., Z. V. Segal, et al. (2000). "Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy." *Journal of Consulting and Clinical Psychology* 68(4): 615-623.
[14] Tulving, E. (1987). "Multiple memory systems and consciousness." *Human Neurobiology* 6(2): 67-80.
[15] Tulving, E. (2002). "Episodic Memory: from mind to brain." *Annual Review of Psychology* 53: 1-25.
WHO (2001). Mental health: New understanding, new hope. The World Health Report. Geneva, World Health Organization.