



شبكة المعلومات الجامعية

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التوثيق الالكتروني والميكروفيلم

# جامعة عين شمس

التوثيق الالكتروني والميكروفيلم



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بالرسالة صفحات

لم ترد بالأصل

# **BIOLOGICAL ASPECTS OF PSYCHOTHERAPY**

B1.121

**ESSAY SUBMITTED FOR PARTIAL FULFILLMENT OF  
MASTER DEGREE IN NEUROLOGY AND PSYCHIATRY**

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## **List of Abbreviations**

ACTH	Adrenocorticotrophic hormone
AIDS	Acquired immunodeficiency syndrome
APA	American psychiatric association
BDNF	Brain derived neurotrophic factor
CBT	Cognitive behavioural therapy
CI	Constraint induced
CNS	Central nervous system
CRF	Corticotrophin releasing factor
CRT	Cognitive rehabilitation therapy
DLPFC	Dorsolateral prefrontal cortex
DST	Deficient stabilizing plasticity
EMDR	Eye movement desensitization and reprocessing
FMRI	Functional magnetic resonance imaging
FSP	Fast stabilizing plasticity
GABA	Gaba amino buteric acid
HIV	Human immunodeficiency virus
HPA	Hypothalamo-pituitary adrenal
IEG	Immediate early genes
Ig	Immunoglobulin
LTP	Long term potentiation
MRI	Magnetic resonance imaging
mRNA	Messenger
NMDA	N-methyl D-aspartate
.OCD	Obsessive compulsive disorder
PET	Positron emission tomography
PNI	Psychoneuroimmunology
PTSD	Post traumatic stress disorder
SPECT	Single photon emission computed tomography
SSRI	Selective serotonin reuptake inhibitor
TNF	Tumour necrosis factor
TP	Tuning plasticity
TSH	Thyroid stimulating hormone

**INTRODUCTION**  
**AND**  
**AIM OF THE WORK**

## **Introduction and aim of the work**

Psychotherapy is a process of discovery, a learning process. In it, we can work together to discover what events, situations and relationships in our current life or earlier life are leaving us with uncomfortable feelings or ways of dealing with our world that are not working as well as we want. We work toward acquiring new, effective, helpful ways of understanding our experiences and the events in our life, our responses to them and the actions we take. Psychotherapy, once was the dominant vehicle of psychiatric care, still the most distinctive aspect of psychiatric therapeutic armamentarium" (**Wallerstien, 1991**).

It was long held that psychotherapy is the treatment of psychologically based disorders, while biologically based disorders should be treated with medication. This view splits people into mind and brain. While the two constructs can be separated for purposes of discussion but they are always integrated and what is called mind can be understood as the activity of the brain although the complexity of one's unique subjectivity is not easily reducible to chemistry and physiology (**Andreasen, 1997**).

Psychological and biological components of psychiatric illness must be integrated to avoid the perils of reductionism in diagnosis and treatment. Modern studies of the etiology and pathogenesis of major psychiatric disorders suggest that only through a sophisticated synthesis of psychosocial and genetic/biochemical

points of view can causation be comprehensively understood so treatment must be informed by psychotherapeutic approaches as well as by pharmacotherapy **(Gabbard, 1994)**.

Recently, it is generally accepted that psychotherapy is a powerful intervention that directly affects and changes the brain **(Deborah and Jerald, 1999)**. Advances in neuroscience research have led to a more sophisticated understanding of how psychotherapy may affect brain functioning **(Gabbard and Jerald, 2001)**.

Brain structure and function may be influenced and even changed by effective psychotherapy as well as by other behavioral cognitive interventions **(Ruegg, 2004)**.

In order to produce lasting effects, psychotherapy should arrive at restructuring neural networks, particularly in the subcortical limbic system which is responsible for unconscious emotional motivations and dispositions **(Davidson and Irwin, 1999)**.

Psychotherapy might act also through learning, by producing changes in Gene Expression that alter the strength of synaptic connections and structural changes that alter the anatomical pattern of interconnections between nerve cells of the brain. As the resolution of brain imaging increases, it should eventually

permit quantitative evaluation of the outcome of psychotherapy  
**(Kandel, 1998).**

*The aim of this work is to review the biological aspects of  
psychotherapy including:*

- (1) Body Brain Mind connection.
- (2) Neural plasticity.
- (3) Gene expression.

**BODY-BRAIN-MIND  
CONNECTION  
AND ITS RELATION TO  
PSYCHOTHERAPY**