THE BIOMEDICAL MODEL

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THE PHYSICIAN TODAY
THE ORIGINS AND HISTORY OF THE BIOMEDICAL MODEL

MEDICINE = INTERVENTION TO OVERCOME OBSTACLES AND RESTAUR NATURAL BALANCE

HIPPOCRATIC MEDICINE = NATURAL BALANCE

HEALING BY THE POWER OF NATURE = TREATMENT (Galen (130-200 A.D.))

FOUNDATIONS IN GREECE : ARISTOTELIAN TELEOLOGY
Aristotle

Born: 384 BC in Stagirus, Macedonia, Greece

Died: 322 BC in Chalcis, Euboea, Greece
Aristotle, more than any other thinker, determined the orientation and the content of Western intellectual history.

An extraordinary impact on people attributed to his logistical way of thinking and rigorous scientific procedure.
Aristotelian Universe, Non-homogeneous, Finite Spherical Space

CELESTIAL REGION, made of aether.
Natural motion is circular

SUBLUNARY REGION, made of earth, water, air, and fire.
Natural motion, downward or upward, is linear

Picture by S. Uebi
AFTER COLLAPSE OF ROMAN EMPIRE AND BEGINNING OF MIDDLE AGE (500-1500)

Conflict between philosophy and religion

Church values dominates the medical practice
By the end of Middle Age and later with the Rennaissance (XVII) Century the paradigm changed

GALILEO – GALILEI (No natural or secretes explanations anymore and the Earth is not the center of the Universe)

DESCARTES (mathematics, physics, reason)
Galileo Galilei

Born: 15 Feb 1564 in Pisa (now in Italy)

Died: 8 Jan 1642 in Arcetri (near Florence) (now in Italy)
He is chiefly remembered for his work on free fall, his use of the telescope and his employment of experimentation.

He carried out experiments on strings to support his musical theories.

Galileo studied medicine at the university of Pisa, but his real interests were always in mathematics and natural philosophy.
“Take note, theologians, that in your desire to make matters of faith out of propositions relating to the fixity of sun and earth you run the risk of eventually having to condemn as heretics those who would declare the earth to stand still and the sun to change position -- eventually, I say, at such a time as it might be proved that the earth moves and the sun stands still.”
His duties were mainly to teach Euclid’s geometry and standard (geocentric) astronomy to medical students, who would need to know some astronomy in order to make use of astrology in their medical practice.
In 1598, Galileo had stated that he was a Copernican. Copernicanism was in contradiction with Scripture.
His was found to be suspected of heresy and condemned to house arrest, for life. He was also forbidden to publish.
René Descartes

Born: 31 March 1596 in La Haye (now Descartes), France

Died: 11 Feb 1650 in Stockholm, Sweden
... in order to express my judgment more freely, without being called upon to assent to, or to refute the opinions of the learned, I resolved to leave all this world to them and to speak solely of what would happen in a new world, if God were now to create ... and allow her to act in accordance with the laws He had established.
Mechanical, logical, causal-relationship become the dominant thinking

Each problem that I solved became a rule which served afterwards to solve other problems (Descartes)
I concluded that I might take as a general rule the principle that all things which we very clearly and obviously conceive are true: only observing, however, that there is some difficulty in rightly determining the objects which we distinctly conceive.

Discours de la Méthode. 1637.
Roots of biomedical Model

- Religious view of body altered to scientific perspective with Descartes’ theory of mind-body dualism
- Body viewed objectively
- Medical action concerned with causes of disease-problems could be pinpointed
- Materialization- humans only seen as physiological entities
Biomedical Model

Mechanical Analogy- body analogous to machine, doctor similarly to mechanic, disease needs doctor to ‘fix’ problem.

Mind Body Dualism- mind and body two separate entities.
Throughout the history of Western science, the development of biology has gone hand in hand with that of medicine.

Development of Germ Theory and the reinforcement of the BIOMEDICAL MODEL
The mechanistic view of life firmly established in biology since the first scientific revolution of the 17th century has dominated the attitude of the physicians towards health and illness.
The human body is regarded as a machine that can be analyzed in terms of its parts.

The diseases are seen as malfunctioning of biological mechanisms and studied from the point of view of cellular and molecular biology.
1. "THIS LEG"

2. "NOT THIS LEG"
Our current Paradigm - dualism
• Can the doctrine of mind-body dualism be applicable to stress?
• Is stress strictly restricted to the mind, or does it have biological effects as well?
• How certain can we be of the effects of stress on our physical health, if there is no clear link between disease and stress?
Detailed knowledge of biological functions on the cellular and molecular levels not only led to the extensive development of drug therapy but was of tremendous help for surgery, allowing surgeons to advance their art to the levels of sophistication beyond all previous expectations.
The development of medical technology became all pervasive in the modern medical care.

The increasing dependence on medicine of Hi-technology has raised a number of problems which are not only of medical or technical nature, but involve much broader social, economic and moral issues.
THE OLYMPICS
PERFORMANCE-ENHANCING DRUGS
PHARMACY

OUR MOTTO: FASTER, HIGHER, STRONGER DRUGS!
Three centuries after Descartes, the science of medicine is still based on the notion of the body as a machine, of disease as a consequence of breakdown of the machine and the doctor’s task as the repairer of the machine.
The new concepts in modern physics have brought about a profound change in our world view. ‘from the mechanistic concept of Descartes and Newton to:

a holistic and ecological view, a view similar to the views of mystics of all ages and traditions.
‘The best estimates are that the medical system (doctors, drugs and hospitals) affects only about 10% of the usual indices for measuring health.’

The Dean of the Graduate School of Public Policy, U.C. Berkley States,
... the trouble is I don't have a disposable income!

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R
- disposable syringes
- disposable catheters
- disposable needle
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We are left with approximately the same roster of common major diseases as in 1950 and although we have accumulated a formidable body of information about some of them in the intervening time, the accumulated knowledge is not yet sufficient to permit either the prevention or the outright cure of them.
The **limits** of the classical biomedical model in achieving optimal treatment and recovery, disease prevention, and health promotion are now clearly recognized.
Increasingly, the impact of psycho-social, cultural, political and economical variables on the individual and community health has come under consideration.
DEPRESSION CLINIC

HAPPY HOURS
6-8pm
Social scientists have responded to these trends by consolidating health-related sub-specialists in disciplines such as sociology, anthropology, economics and political sciences.
To reincorporate the notion of healing in the theory and practice of medicine, medical science will have to transcend its narrow view of health and illness.
This does not mean that it will have to be less scientific.

On the contrary, by broadening this conceptual basis it will become more consistent with recent developments in modern science.
To begin with, the definition of health given by W.H.O. in the preamble of its charter may be useful;

‘Health is a state of complete, physical, mental and social well-being; and not merely the absence of disease or infirmity.’
Medical curricula all over the world have been increasing the exposure of medical students to various social sciences.

The interaction between social scientists and health-related specialists has thus been increasing in the academic, research and services fields.
Science has been affected by a point of view which tries to be value-free. This is of course mere prejudice.

Scientists will not need to be reluctant to adopt a holistic framework for fear of being unscientific.

Modern physics can show that such a framework is not only scientific but is in agreement with the most advanced scientific theories of physical reality. ‘

David Bohm.
Questions

• What evidence is there of an emerging paradigm a shift from scientific medicine?
• Can you think of any other medical paradigms that exist? How effective are they?
• Who/What (social structures etc.) are responsible for keeping this paradigm alive?
• Are there ever benefits for viewing the body in a dualistic manner?
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