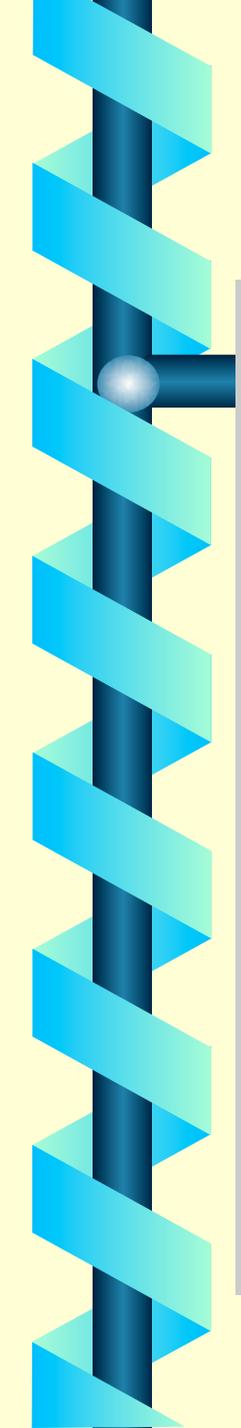


# THE BIOMEDICAL MODEL

Dr. Jaime Llambías-Wolff,  
York University  
Canada



# CONTENT

**THE ORIGINS AND HISTORY OF THE BIOMEDICAL MODEL**

**ARISTOTLE, GALILEO, DESCARTES**

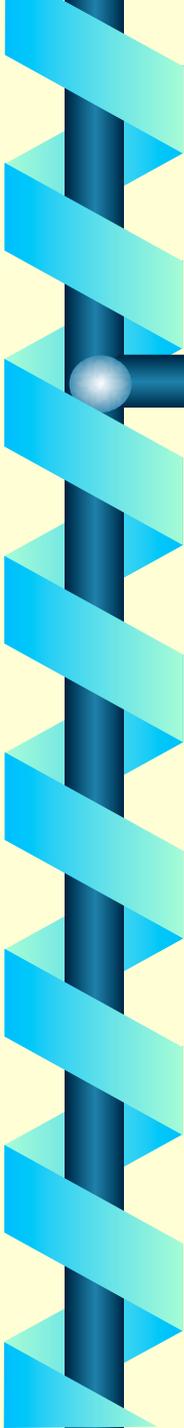
**THE ROLE OF SCIENCE AND BRIEF HISTORY OF MEDICAL PRACTICE**

**THE GERM THEORY**

**MEDICAL INNOVATIONS AND DEVELOPMENT OF NEW TECHNOLOGIES**

**CONTEMPORARY MEDICINE**

**THE PHYSICIAN TODAY**



# THE ORIGINS AND HISTORY OF THE BIOMEDICAL MODEL

**MEDICINE = INTERVENTION TO OVERCOME OBSTACLES  
AND RESTAURE NATURAL BALANCE**

**HIPPOCRATIC MEDICINE = NATURAL BALANCE**

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

**FOUNDATIONS IN GREECE : ARISTOTELIAN TELEOLOGY**

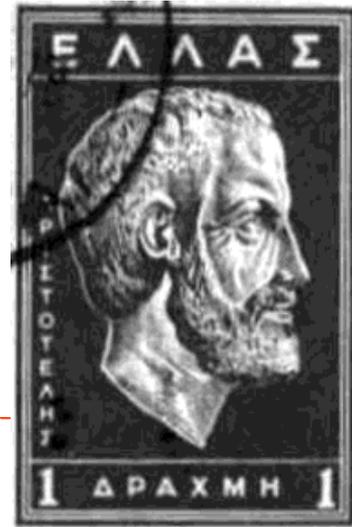
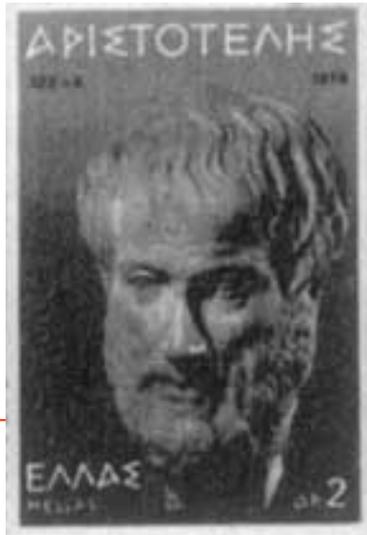
# Aristotle

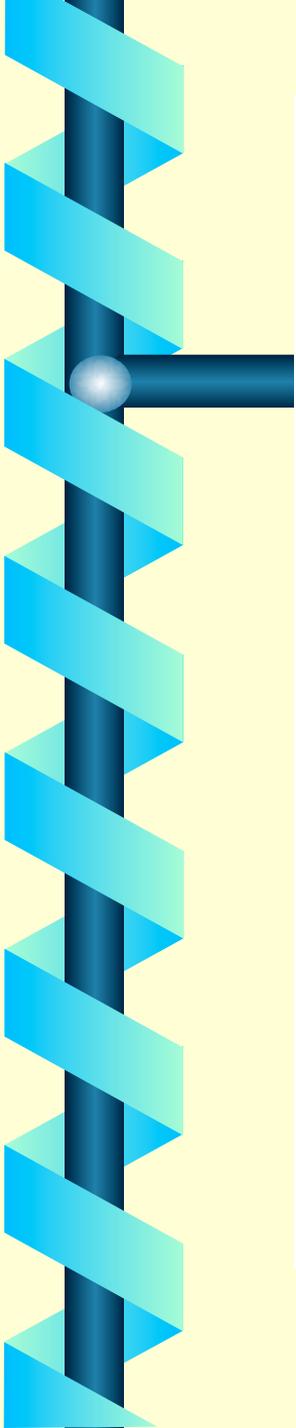
**Born: 384 BC in Stagirus, Macedonia, Greece**

**Died: 322 BC in Chalcis, Euboea, Greece**

---

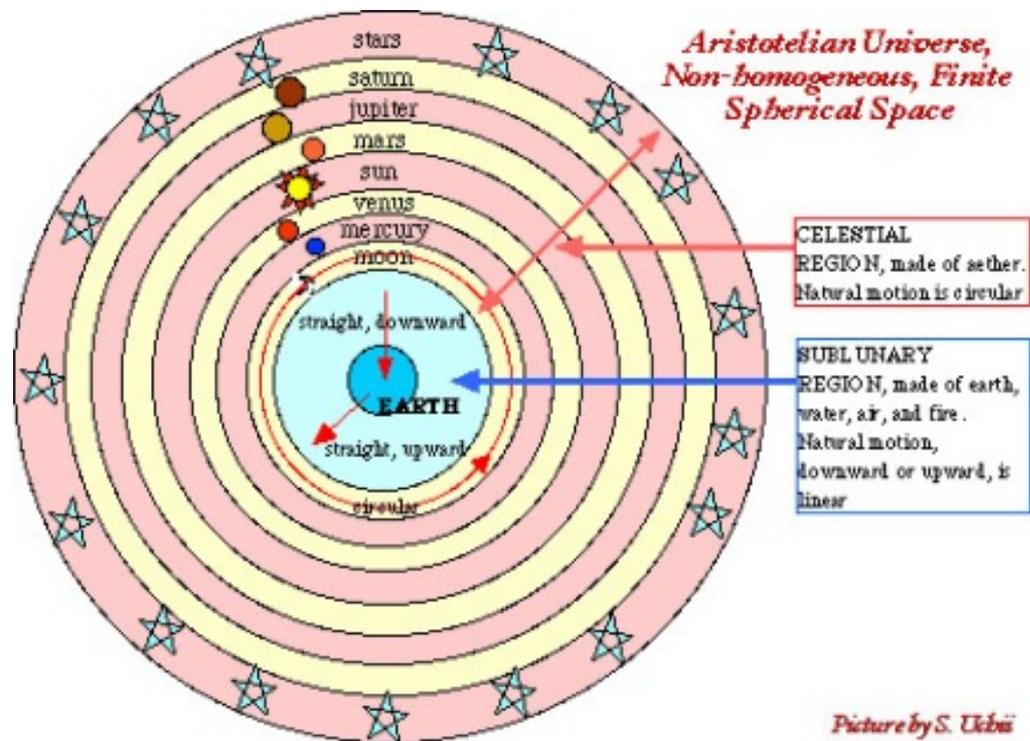






*Aristotle, more than any other  
thinker, determined the  
orientation and the content of  
Western intellectual history*

*An extraordinary impact on people  
attributed to his logistical way of  
thinking and rigorous scientific  
procedure.*



# **AFTER COLLAPSE OF ROMAN EMPIRE AND BEGINNING OF MIDDLE AGE (500-1500)**

---

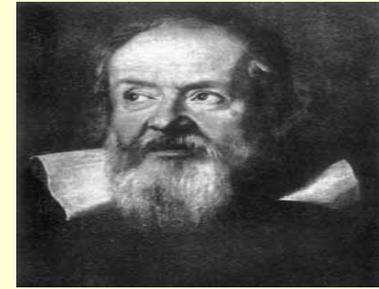


**Conflict between philosophy and religion**

**Church values dominates the medical practice**

**By the end of Middle Age and later with the Renaissance ( 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)

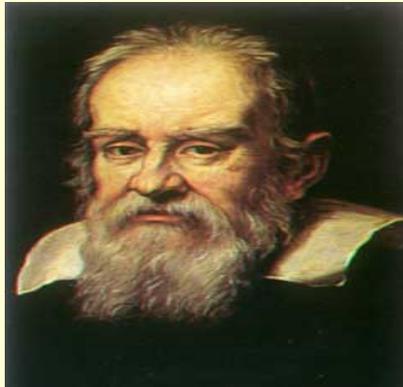
(physics and cosmology)

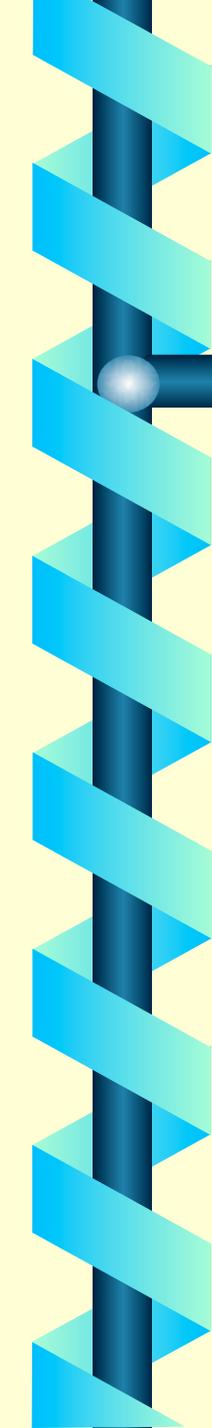


# Galileo Galilei

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

**Died: 8 Jan 1642 in Arcetri (near Florence) (now in Italy)**



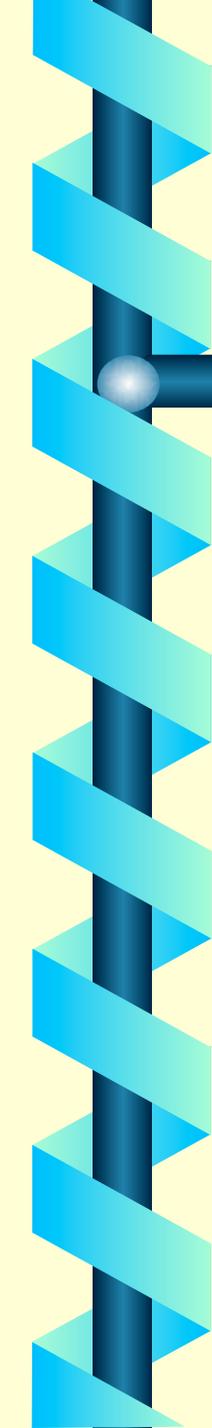


**He is chiefly remembered for his work on free fall, his use of the telescope and his employment of experimentation.**

---

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

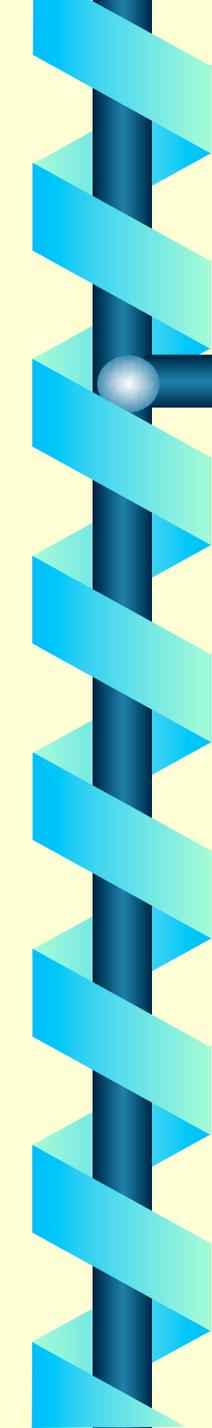
**Galileo studied medicine at the university of Pisa, but his real interests were always in mathematics and natural philosophy.**



From: Dialogue

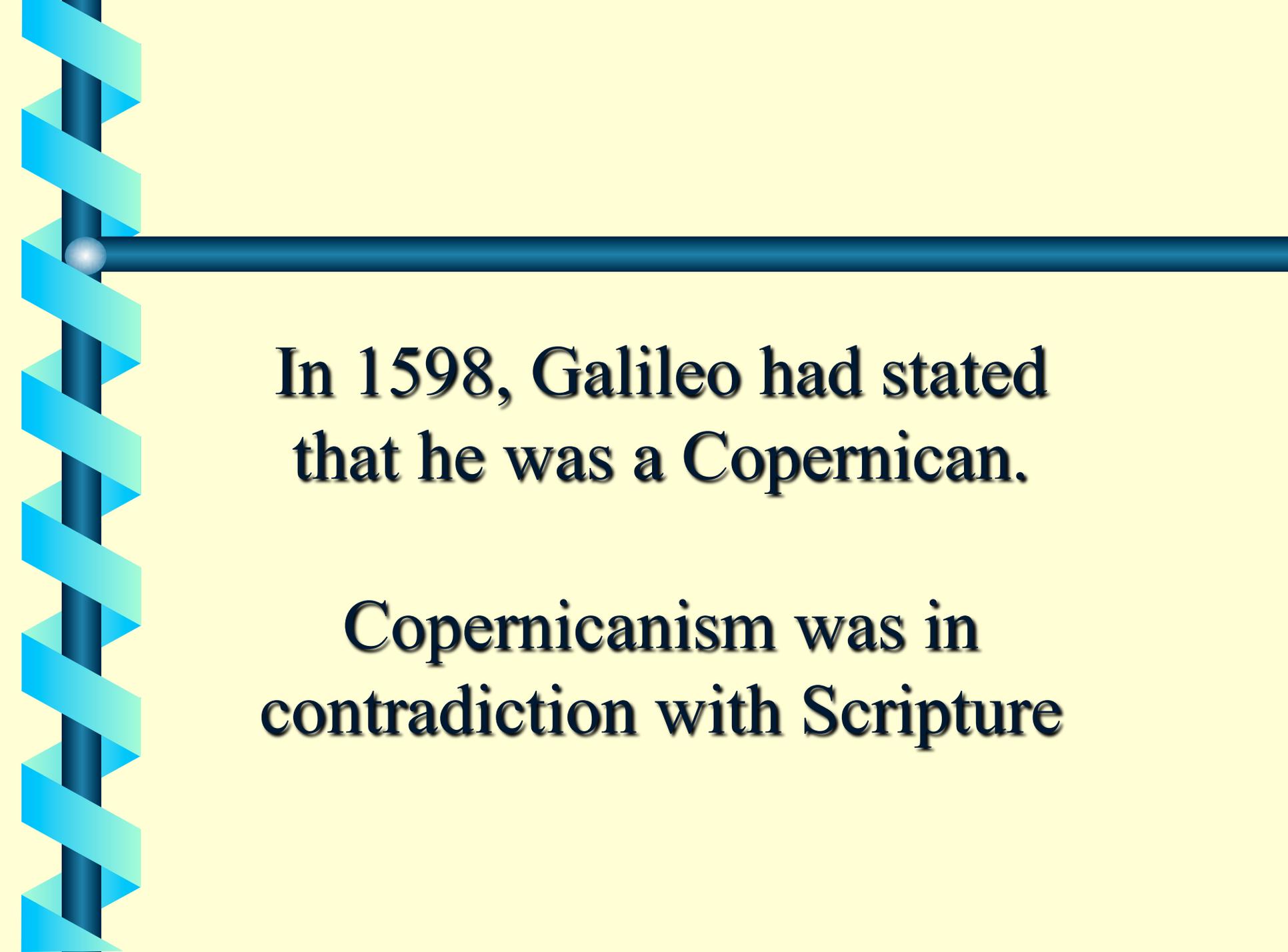
---

*“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”.***



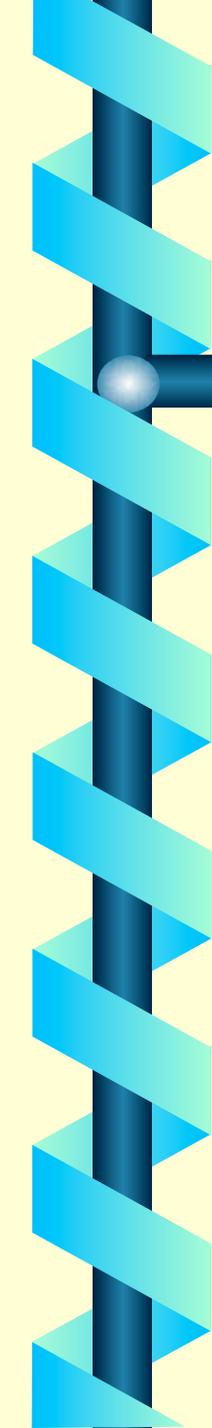
---

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**



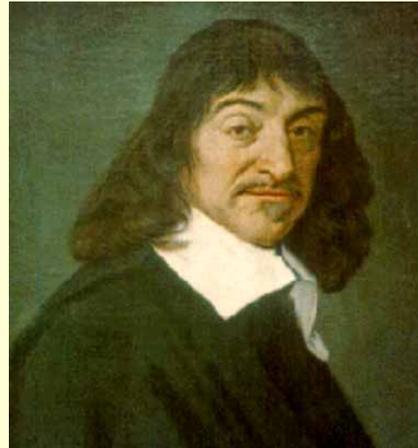
---

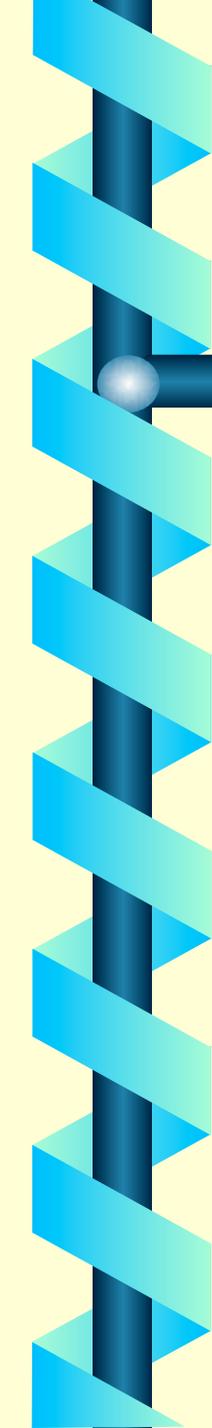
His was found to be  
*suspected of heresy* and  
condemned to house arrest,  
for life . He was also  
forbidden to publish.

# 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.

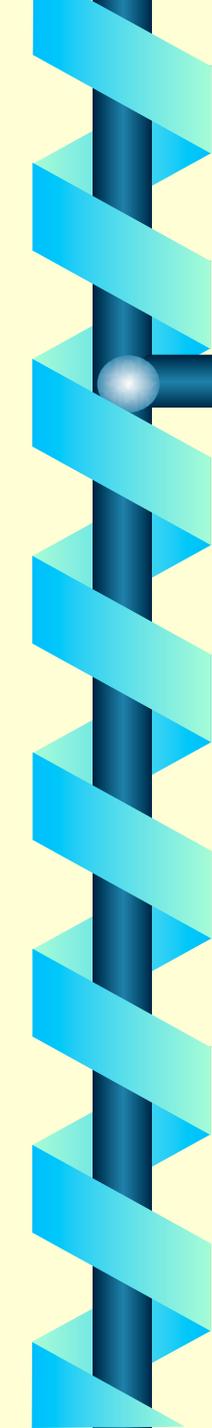
# SCIENCE=

**Mechanical,  
logical,  
causal-relationship  
become the dominant thinking  
..... SCIENCE**



*Each problem that I solved became a rule  
which served afterwards to solve other  
problems (Descartes)*

# Quotations by René 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

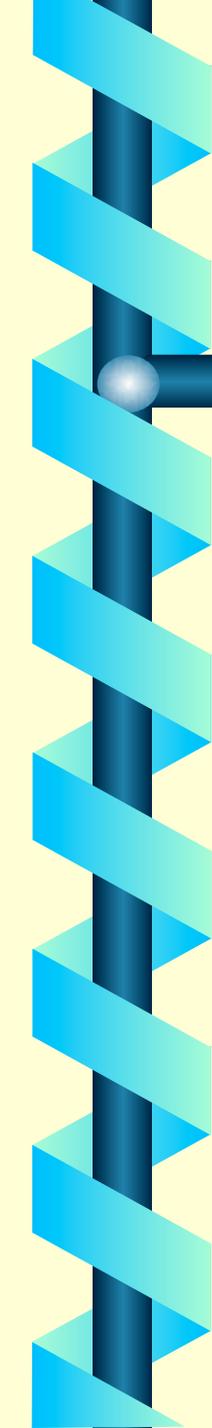


# Biomedical Model

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**

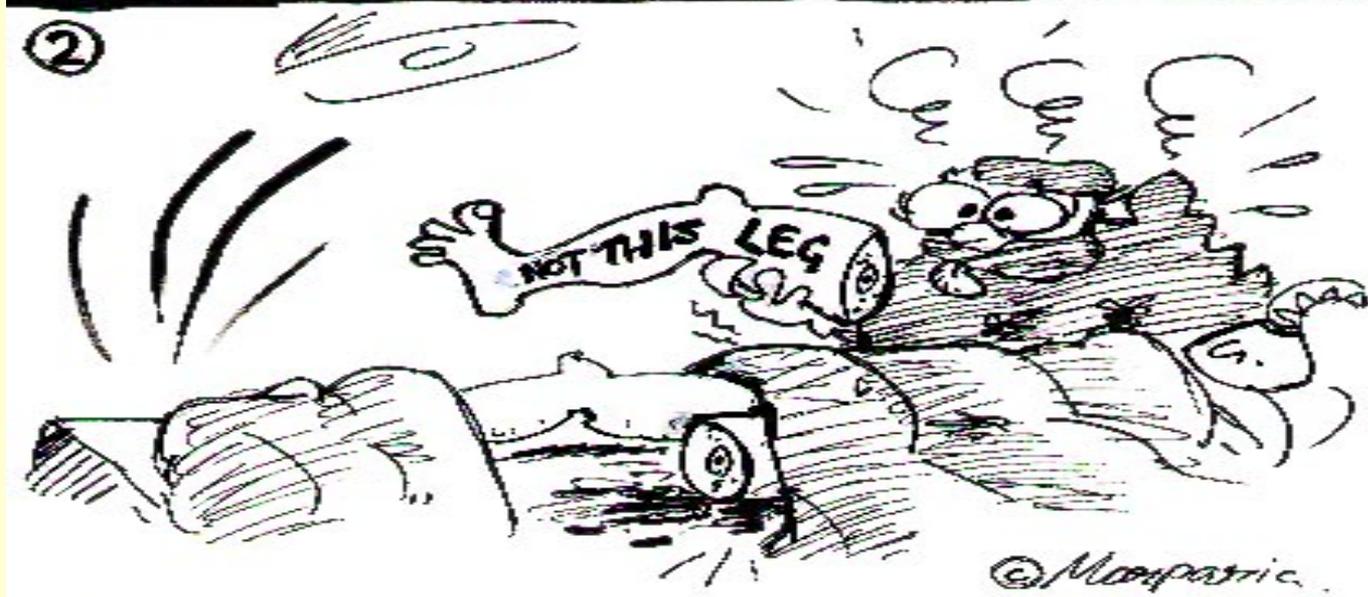


The **mechanistic view** of life firmly established in biology since the first scientific revolution of the 17th century has dominated the attitude of the physicians towards health and illness.



**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.**



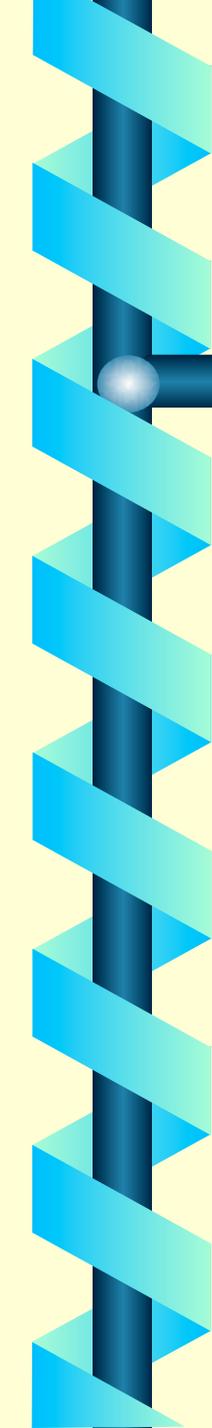
# Our current Paradigm - dualism

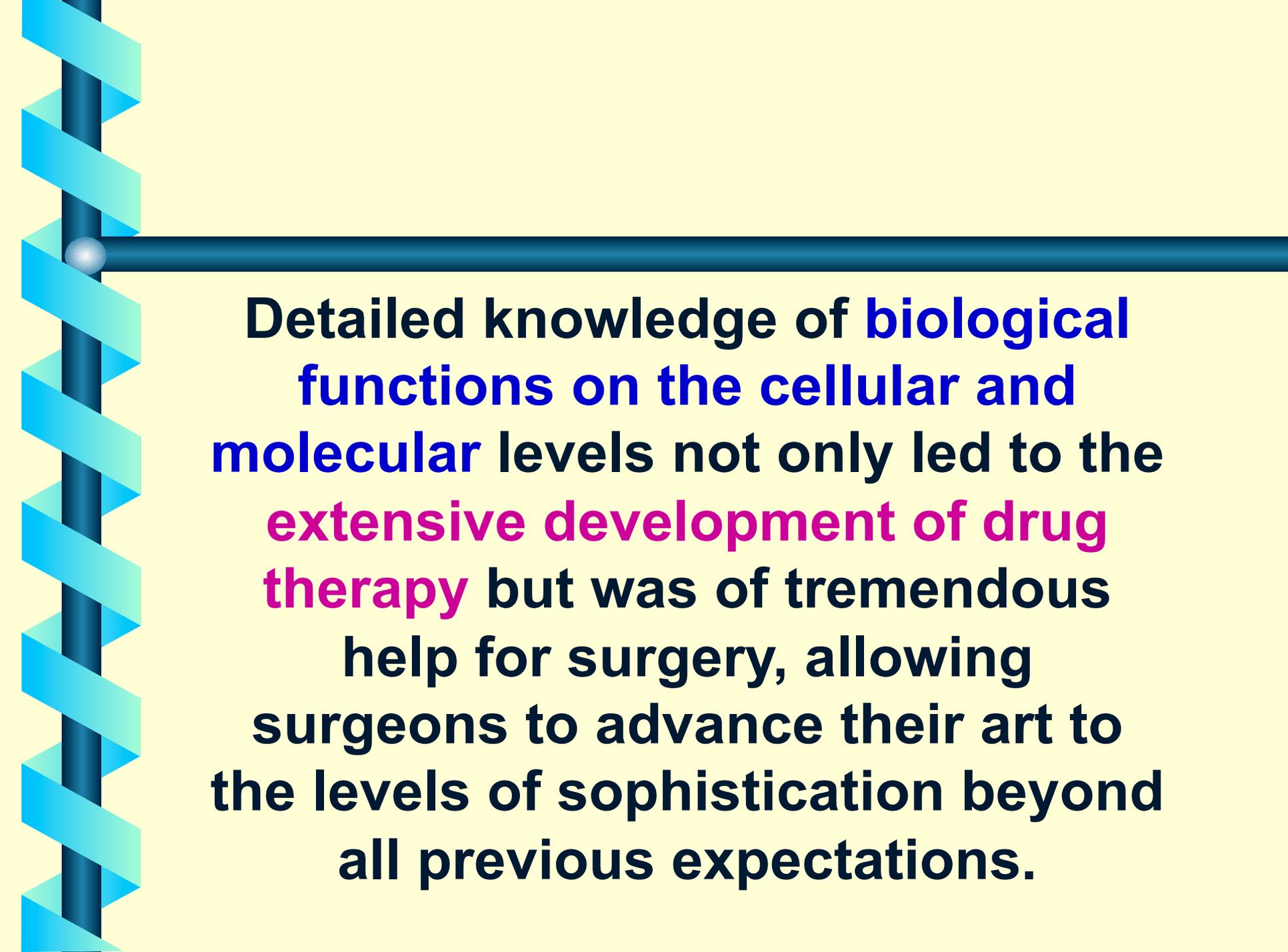


[Coffequill.blogspot.com](http://Coffequill.blogspot.com)



[www.telegraph.co.uk](http://www.telegraph.co.uk)

- 
- 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**



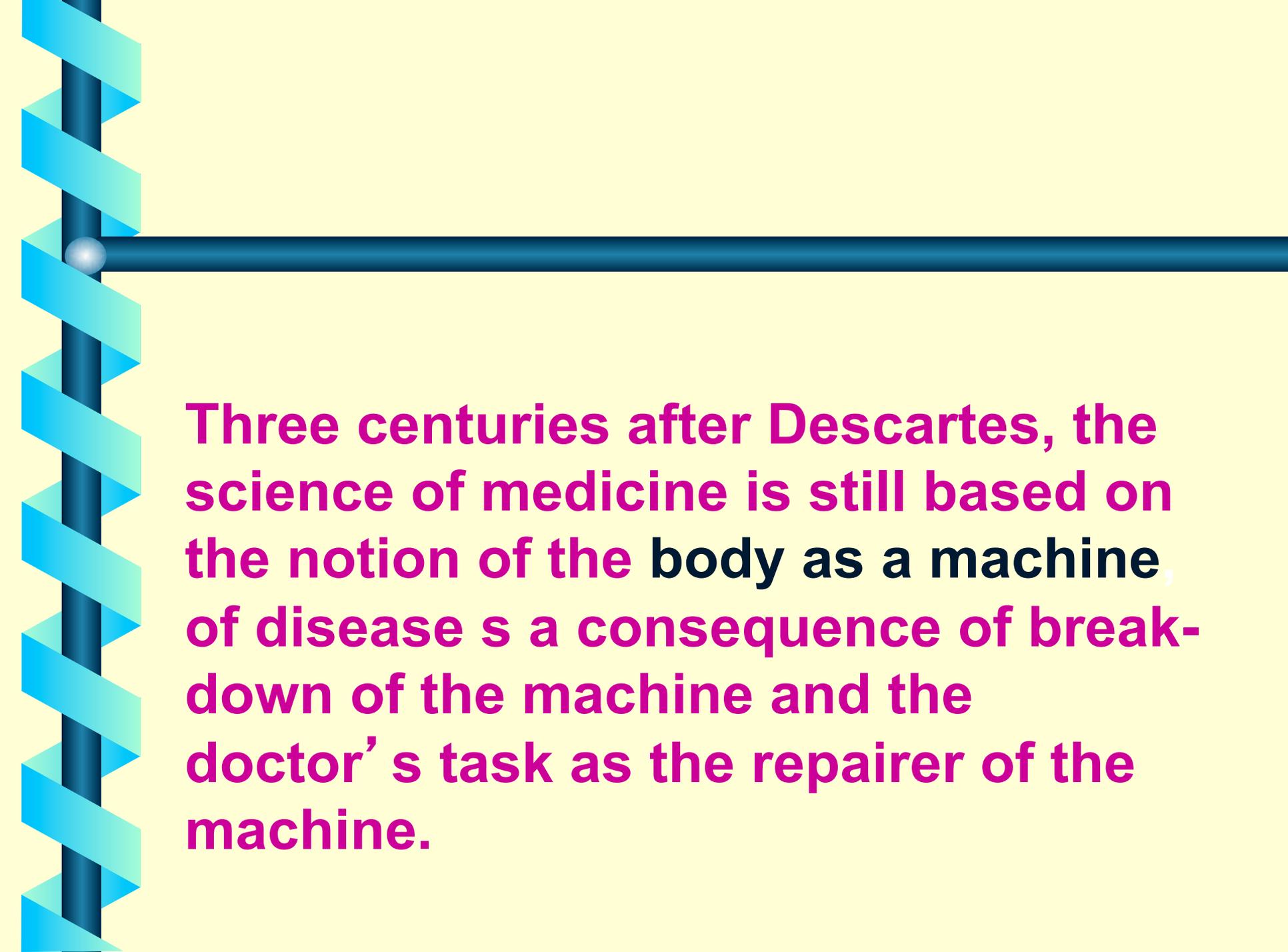
THE  
**OLYMPICS**

PERFORMANCE-  
ENHANCING DRUGS  
PHARMACY

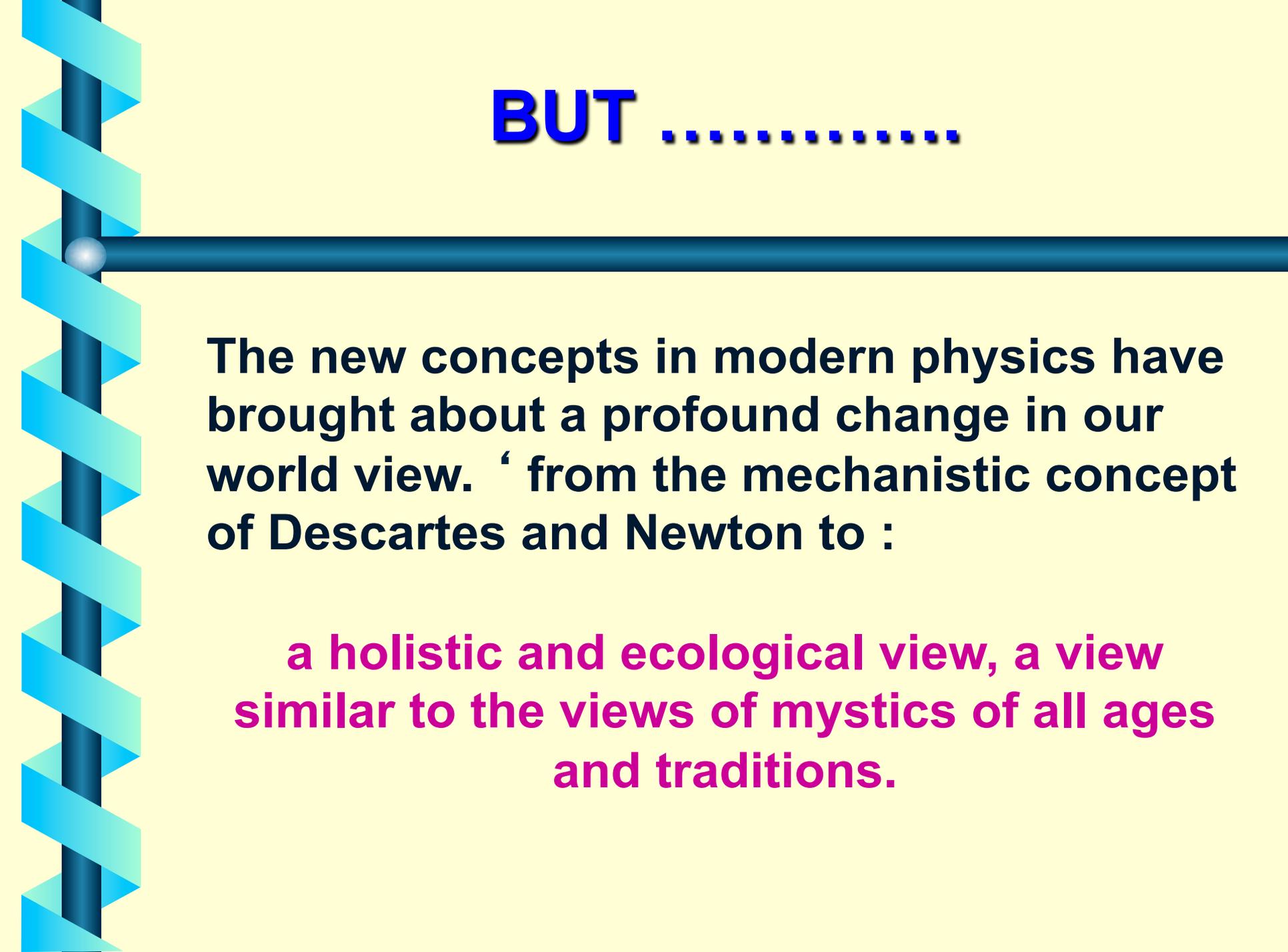


OUR MOTTO:  
**FASTER**  
ACTING,  
**HIGHER**  
POTENCY  
**STRONGER**  
DRUGS!

©Mondetta



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.



**BUT .....**

**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 :**

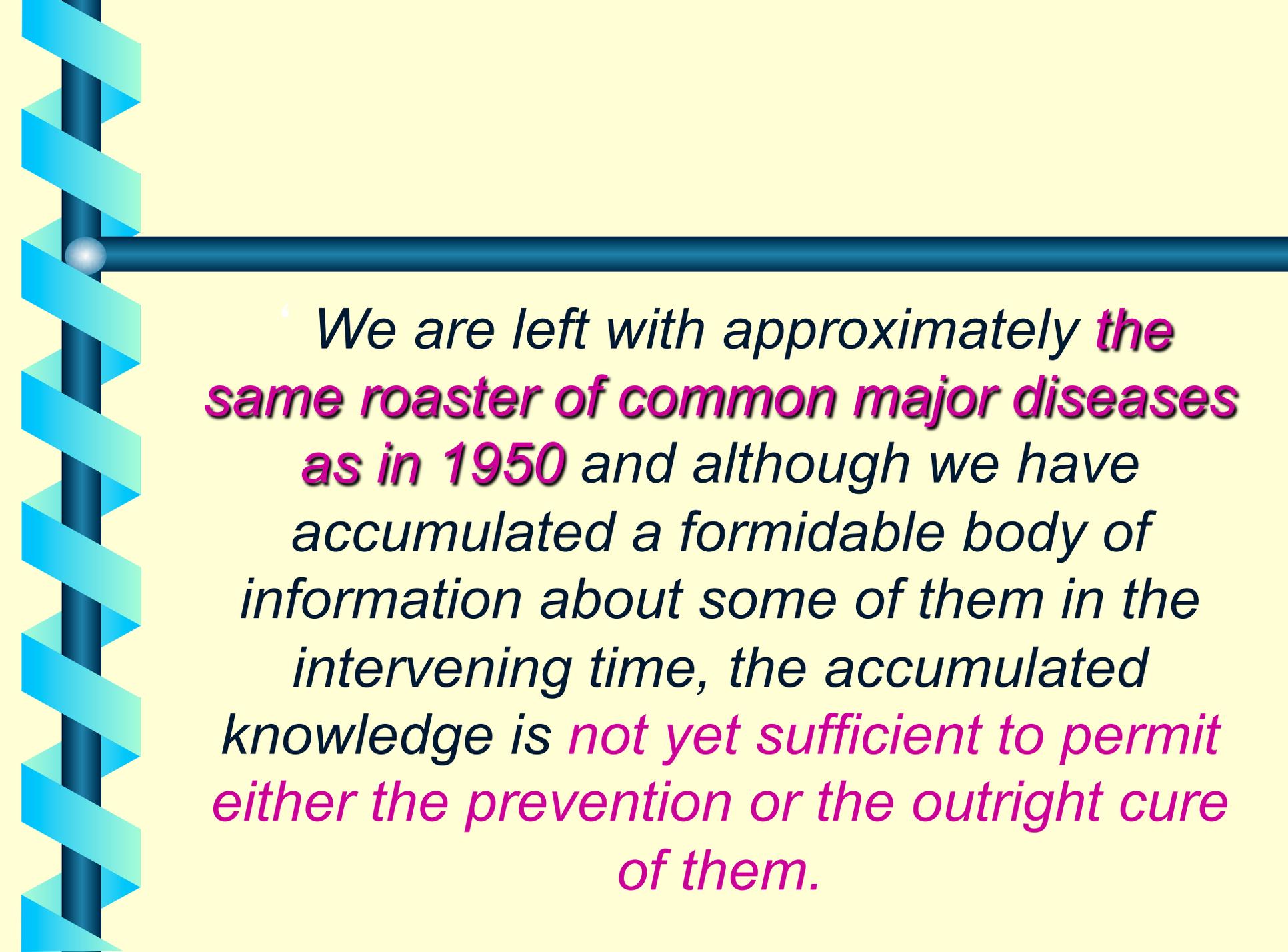
**a holistic and ecological view, a view similar to the views of mystics of all ages and traditions.**

# WHY ?

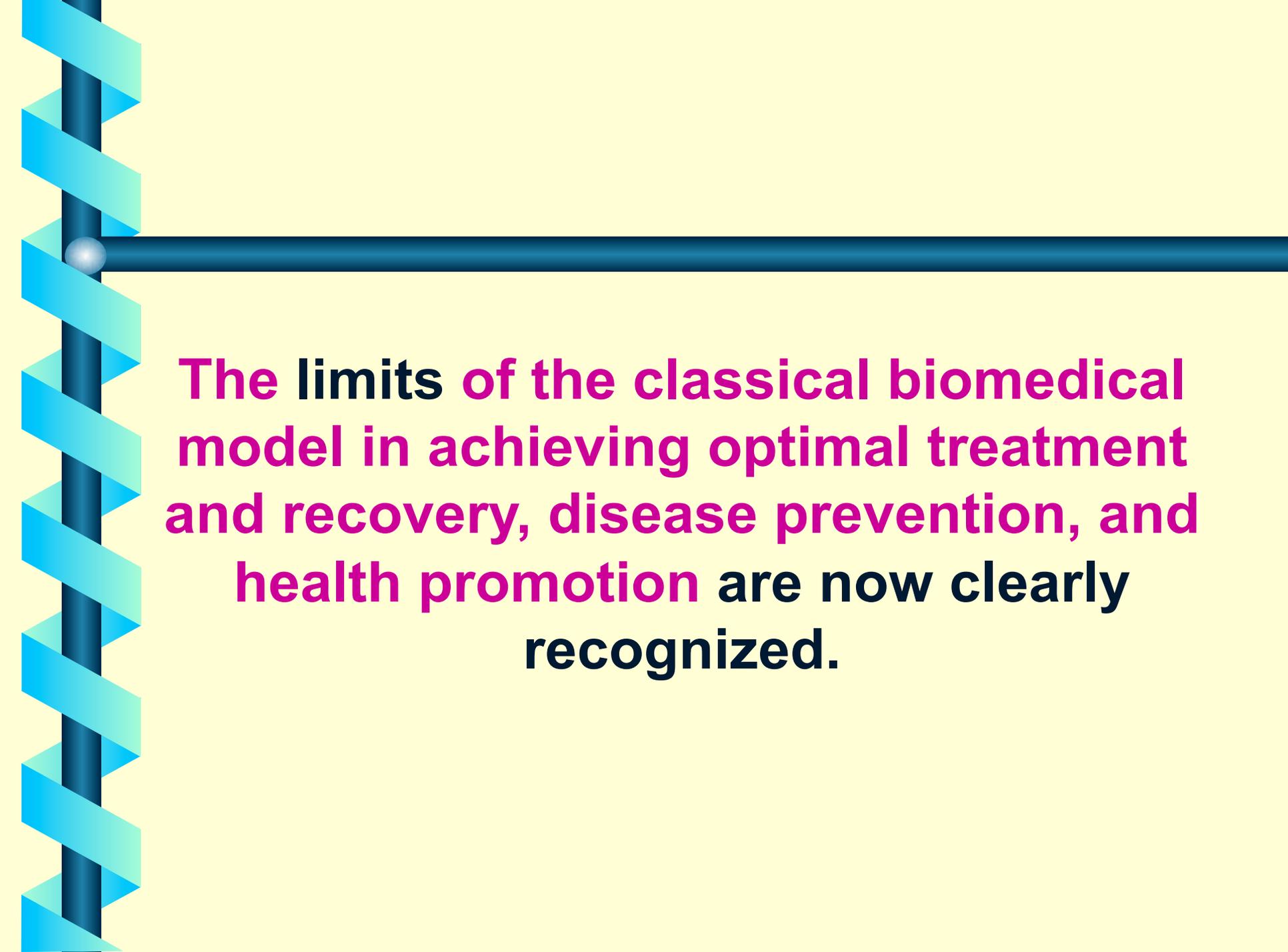
***‘ The best estimates are that the medical system ( doctors, drugs and hospitals ) affects only about 10% of the usual indices for measuring health. ’***

The Dean of the Graduate School of Public Policy, U.C. Berkley States,

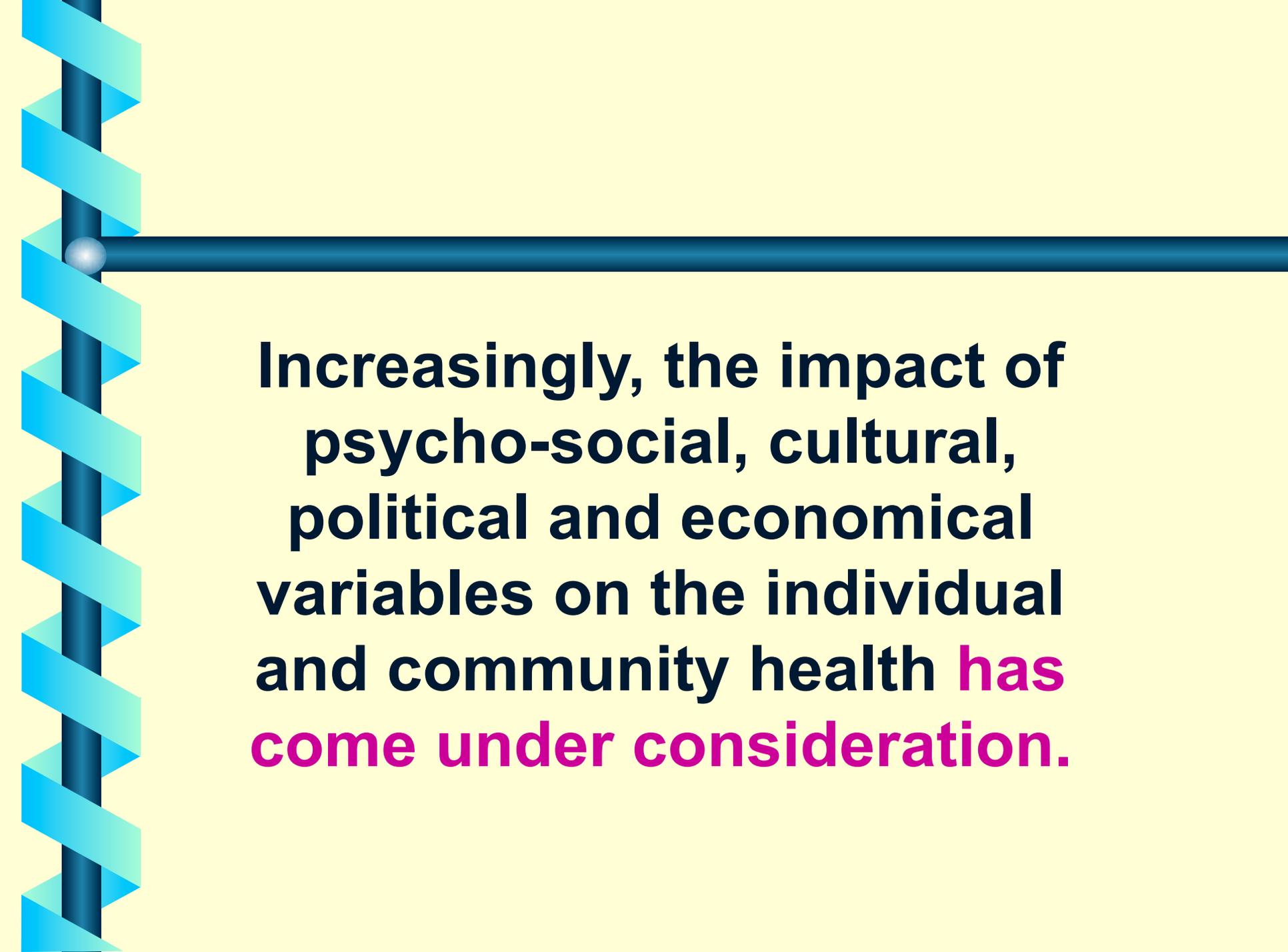




*We are left with approximately **the same roaster of common major diseases as in 1950** and although we have accumulated a formidable body of information about some of them in the intervening time, the accumulated knowledge is **not yet sufficient to permit either the prevention or the outright cure 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

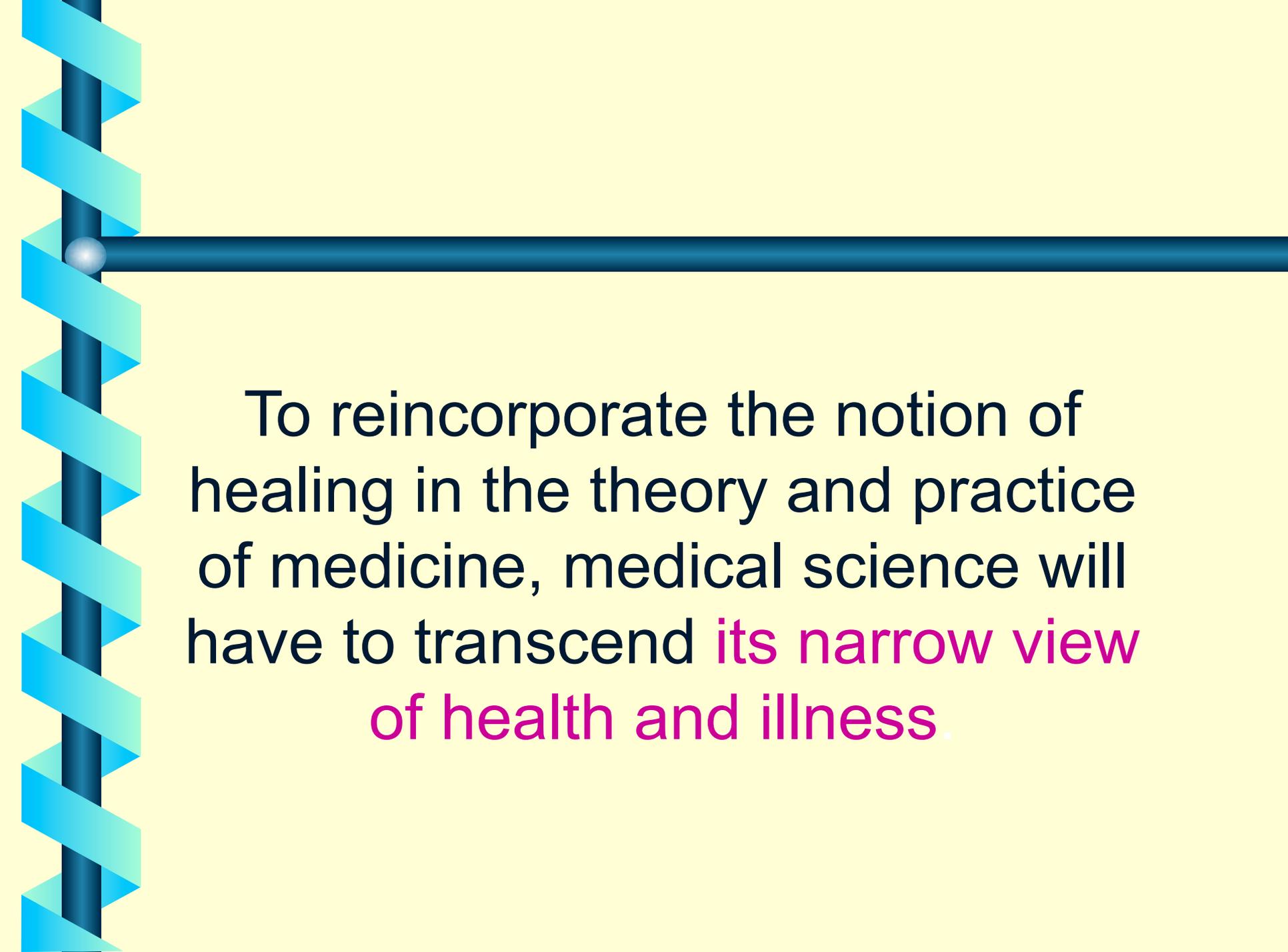
HAPPY  
HOURS  
6-8pm



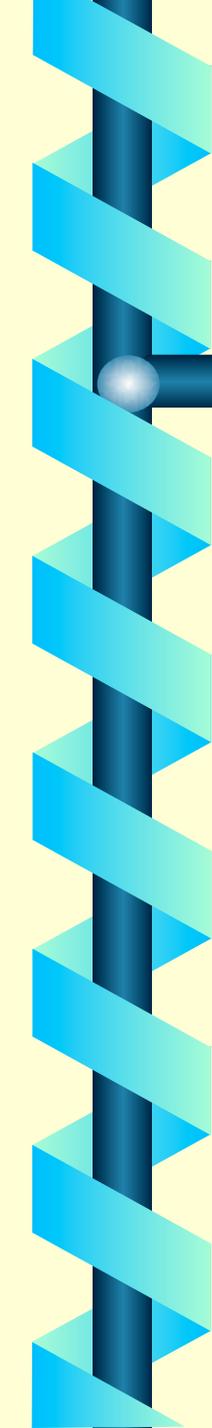
© Monty Python



**Social scientists have responded to these trends by consolidating health-related sub-specialists in disciplines such as sociology, anthropology, economics and political sciences.**



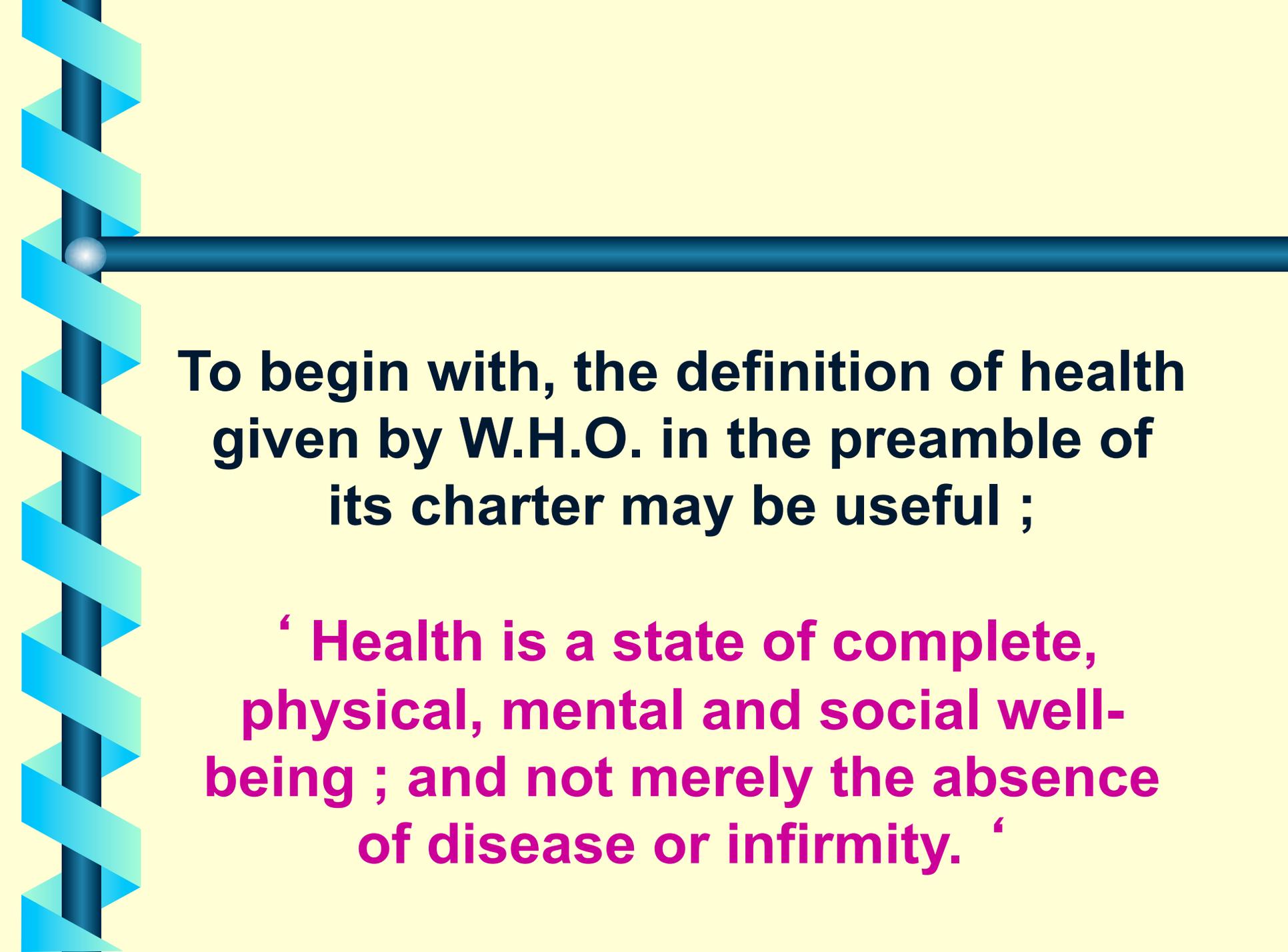
To reincorporate the notion of healing in the theory and practice of medicine, medical science will have to transcend **its narrow view of health and illness.**



---

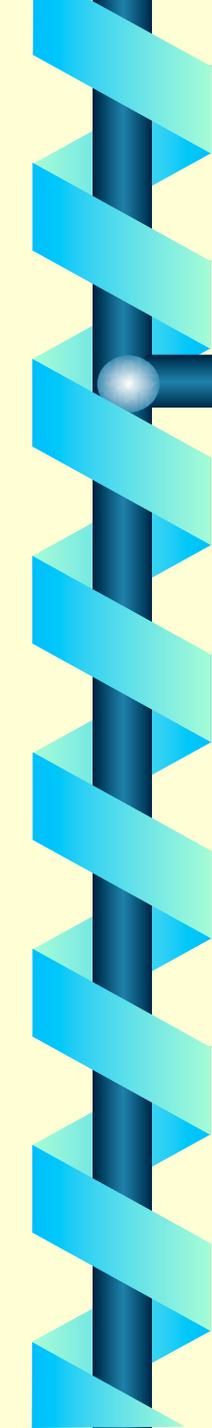
**This does not mean that it will  
have to be less scientific.**

**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 ;**

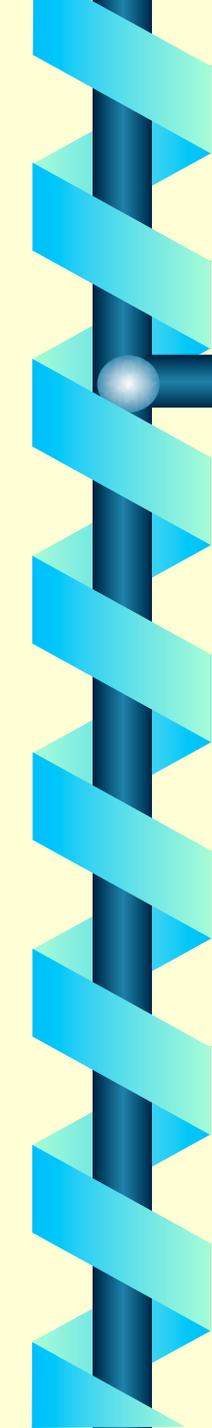
**‘ Health is a state of complete, physical, mental and social well-being ; and not merely the absence of disease or infirmity. ‘**



---

**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.**

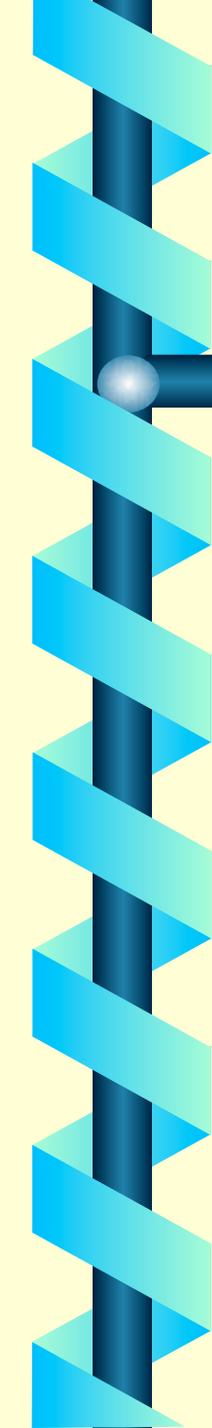


*Science has been affected by a point of view which tries to be value-free. This is of course mere prejudice.*

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. ‘

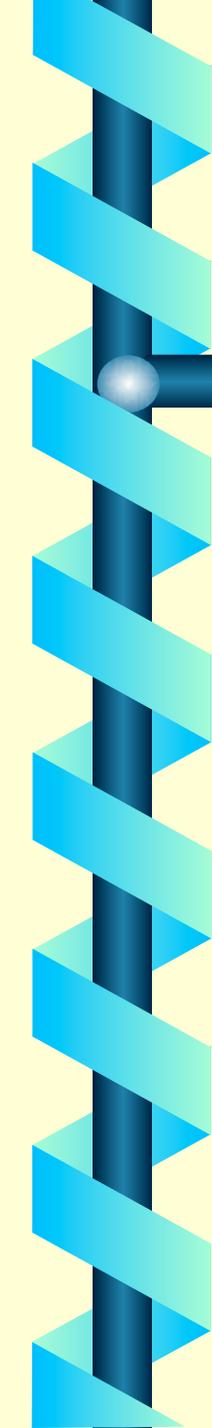
*David Bohm.*



# 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?



---

## **Acknowledgments:**

**I wish to recognize and thank the many students that, during several years, have kindly facilitated various slides, which are incorporated in this presentation.**



**THE  
END**