



Is there place for the  
soul  
in the neuroscience?

10<sup>th</sup> International Interdisciplinary Seminar  
Netherhall, London, 2-6 January 2008

# The aim of the 10th International Interdisciplinary Seminar

The aim of this Seminar is not to prove the existence of the spiritual soul but rather to prove that the assumption of the spiritual soul is coherent with science, and in particular neuroscience.

Anyone who believes in a spiritual soul necessarily assumes that his soul is somehow involved in governing certain movements of his body

When I speak or write, I implicitly assume that I am controlling the movements of my lips, hands and eyes through the spiritual powers of my soul, i.e. my free will and intellect.

In this sense, one would expect  
science to be open  
to the possibility of a spiritual soul  
governing the operations of the brain

# Two alternative views of science

## Deterministic (materialistic) view:

What happens today is exclusively determined by what happened yesterday, and actually by the Big-Bang.

**Time is the foundation of reality; no order without time.** Reality can be explained exclusively by a temporal chain of **material observable causes**.

## Non-deterministic view:

**Reality cannot be reduced to time**, to a temporal causal chain of events. New order or information can arise in the world by **spiritual unobservable causes**.

# Spiritual agency

The assumption of a human spiritual soul implies accepting that **unobservable** causes or agents can **immediately and spontaneously** rule certain corporal movements.

# Spiritual causes in ancient and today's science

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The assumption of spiritual agency was widespread in ancient scientific conceptions

Thomas Aquinas witnesses this in:

*The Summa Theologica*

*Part I, Question 110*

“The holy doctors held with the Platonists that different spiritual substances were placed over corporeal things.”

St. Thomas Aquinas

“In this visible world nothing takes place without the agency of the invisible creature [the angels].”

Pope St. Gregory I ("the Great")

"Every visible thing in this world has an angelic power placed over it"

St. Augustine

"the world has need of angels who preside over beasts, and over the birth of animals, and trees, and plants, and over the increase of all other things"

Origene

“According to the opinion of Aristotle (Metaph. xi, 8) [...] the heavenly bodies are moved by spiritual substances; the number of which he endeavored to assign according to the number of motions apparent in the heavenly bodies. But he did not say that there were any spiritual substances with immediate rule over the inferior bodies, except perhaps human souls; and this was because he did not consider that any operations were exercised in the inferior bodies except the natural ones for which the movement of the heavenly bodies sufficed.”

St. Thomas Aquinas

In the inferior bodies movements occur that do not follow from the nature of these bodies.

For instance, the ebb and flow of the sea does not follow from the substantial form of the water, but from the influence of the moon.

Aristotle assumes:

- All movements of the inferior bodies either follow from their nature or can be explained by the influence of the heavenly bodies, like the ebb and flow follow from the influence of the moon.
- The movements of the inferior bodies do not require spiritual substances.

**According to St. Thomas Aquinas**

# Aristotle's view

Spiritual substances (angels) rule the movement of the heavenly bodies.

Angels do not rule over the movement of the inferior bodies.

Spiritual soul rules perhaps over the movement of human body.

According to St. Thomas Aquinas

“But because we assert that many things are done in the inferior bodies besides the natural corporeal actions, for which the movements of the heavenly bodies are not sufficient; **therefore in our opinion we must assert that the angels possess an immediate presidency not only over the heavenly bodies, but also over the inferior bodies.**“

St. Thomas Aquinas

Regarding agency of angels  
in the visible world  
St. Thomas (*doctor angelicus*)  
follows Plato and the holy doctors  
against Aristotle.

# St. Thomas' view

Spiritual substances (angels) rule the movement of the heavenly bodies.

Spiritual soul rules over the “local movements” of the human body.

Spiritual substances (angels) rule over the “local movements” of the other inferior bodies.

# Consequence of Aristotle's view

The movement of the heavenly bodies and the movement of the inferior bodies are **qualitatively different**.

Aristotle's mechanics clashed  
with Galileo's and Newton's mechanics

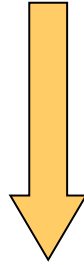
According to the new Mechanics, the  
movement of the heavenly bodies and the  
movement of the inferior bodies obey the  
same laws and are **qualitatively the same**  
kind of movement.

The collapse of the Aristotelian physics led to the deny the agency of the angels on both, the heavenly and the inferior bodies.

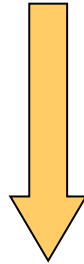
- Angels are not needed to explain the movements of the inferior bodies (Aristotle).
- The movement of the heavenly bodies and the movements of the inferior bodies are the same kind of movement (Galileo and Newton).
- Angels are not needed to explain any movement.

As a consequence one also denied  
the agency of any spiritual cause  
on corporeal movements,  
and in particular  
the agency of the spiritual soul  
on the human body.

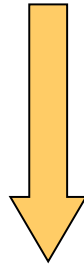
Aristotelian physics & Classical mechanics



The angels are superfluous



The soul is superfluous



Freedom is impossible

# Kant was aware that (deterministic) scientific causality excludes freedom

“There is no such thing as freedom, but everything in the world happens solely according to the laws of nature. [...]

**“For it cannot be alleged that, instead of the laws of nature, laws of freedom may be introduced into the causality of the course of nature. For, if freedom were determined according to laws, it would be no longer freedom, but merely nature. Nature, therefore, and transcendental freedom are distinguishable as conformity to law and lawlessness.”**

The Critique of pure reason, Second edition 1787, B 473 and B 476

# The deterministic temporal causality of “classical physics” excludes freedom

At Kant’s time science (i.e. “classical physics”) conceived causality only as temporal deterministic causality (what happens today is completely determined by what happened yesterday).

Temporal deterministic causality excludes obviously free will.

**You cannot have both:  
freedom and “scientific” determinism**

**Either is freedom an illusion or  
“classical physics” cannot be considered complete**

According to quantum mechanics  
laws of freedom can be introduced into the  
causality of the course of nature

quantum mechanics

+

freedom on the part of the experimenter



freedom on the part of Nature

Thomas Aquinas'  
physics



the human  
body's  
movements  
are ruled by  
a spiritual  
soul



angels rule the  
movements of the  
animals and other  
inferior bodies

Quantum physics



The  
experimenter  
makes free  
choices



freedom  
is possible



there are free choices  
in nature too



quantum angels rule the  
quantum phenomena

**Restoring the agency of the spiritual soul  
in the human body  
entails  
restoring the agency of the angels  
in the visible world**

See:  
A. Suarez, Classical Demons and Quantum Angels, arXiv:0705.3974 [quant-ph] 27May 2007

# Spiritual causes in ancient and today's science

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## The End

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