



Montreal Inter-University Seminar

History and Philosophy of Science

The seminar is intended to serve as a forum where researchers from Montreal's Universities and Colleges can report on their research results and exchange ideas on the history and philosophy of science.

Both graduate and undergraduate students may find the seminar helpful and a source of further motivation and inspiration. Graduate students are particularly encouraged to present the results of their research projects.

In the interest of raising public awareness on the implications of important scientific discoveries in various fields, the seminar is open to all who wish to attend.

The Nature of Spacetime and Free Will

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Abstract

The analysis of the consequences of the theory of relativity clearly shows that reality is a four-dimensional world represented by Minkowski spacetime (or other relativistic spacetimes when gravity is taken into account). There could be hardly anything more counter-intuitive than the four-dimensional Minkowski world since it is a 'frozen' world in which the whole history of every physical body is entirely given as the body's worldtube. The view of such a free-will-free world, imposed by science, in which nothing happens constitutes, I think, the greatest intellectual challenge that humankind has ever faced. The reason is that the four-dimensional representation of the theory of relativity is not just a possible interpretation as most physicists appear to believe; it is the only one that does not contradict the experimental evidence. I will specifically show that the kinematical relativistic effects and more importantly the experiments which confirm them are manifestations of the four-dimensionality of the world, as Minkowski advocated, and for this reason they would be impossible if reality were a three-dimensional world (where free will can exist). Hermann Weyl's conjecture, that it is our consciousness that creates the illusion of the passage of time and of free will, and its implications will be discussed in depth.

Date: Wednesday, January 31, 2007

Time: 4:00 PM

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Note: There are regular shuttle buses traveling between Sir George Williams Campus (1455 de Maisonneuve Blvd. W.) and Loyola Campus; see Shuttle bus schedule at the seminar website or at:
<http://www.concordia.ca/info/students/shuttlebus.shtml>