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REFERENCES

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EDUCATION

2005 : Ph. D. Advisor : Professeur Shahid Rahman (Université de Lille 3).

Title of the thesis :

LA DYNAMIQUE DE LA NEGATION ET LA LOGIQUE AVEC INCONSISTANCES, QUELQUES CONEQUENCES SCIENTIFIQUES ET EPISTEMOLOGIQUES

VERS UN RAPPROCHEMENT ENTRE LA PHILOSOPHIE ET L'HISTOIRE DES SCIENCES

Mention : Très honorable avec les félicitations du jury à l'unanimité.

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2001 : DEA ; advisor: Professeur F. De Gandt (Université de Lille 3)

Recherches sur le programme de Hilber : les contreverses sur les fondements des mathématiques (Researches on Hilbert's programme : controversies surrounding the foundations of mathematics)

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Chapter IV The collapse of Hilbert's programme

1998 : Maîtrise, advisor F. De Gandt

La naissance de l'intentionnalité chez Husserl : de la psychologie à la phénoménologie
(Husserl's intentionality: from psychology to phenomenology)

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Post-doctoral research and teaching activities

Lecturer of logic and the foundations of mathematics.
A member of the jury and co-director of the following students of master degree in logic and epistemology (may 2007 session):

Virginie Fiutek: on *Abduction*
Aude Popek: on *Obligationes*
Sebastian Magnier: on *the Concept of Impossible Worlds and Epistemic Logic*
Mathieu Fontaine: on *Lambda Abstraction in First Order Modal Logic and Kripke's Rigid Designators*
Gabrielle Maliet: on *Self-deception*

A member of the UMR's research centre at Lille 3 university (Laboratoire 8361).
A member of the editorial board of Cahiers de Logic et d'Epistémology series which are published in collaboration with King's College
http://www.collegepublications.co.uk

Articles et Publications

Tahiri, H.: The Birth of Scientific Controversies: The Dynamic of the Arabic Tradition, Ibn al-Haytham challenge of Ptolemy's *Almagest* (to appear in Rahman, S., T. Street and H. Tahiri (eds.): *The Unity of Science in the Arabic Tradition: Science, Logic, Epistemology and their interactions*, Springer/Kluwer.)

Abstract. The so-called Copernican revolution is Kuhn's most cherished example in his conception of the non-cumulative development of science. Indeed, in his view not only has the Copernican model introduced a major discontinuity in the history of science but the new paradigm and the old paradigm are incommensurable, i.e. the gap between the two models is so huge that the changes introduced in the new model cannot be understood in terms of the concepts of the old one. The aim of this paper is to show on the contrary that the study of the Arabic tradition can bridge the gap assumed by Kuhn as a historical fact precisely in the case of Copernicus. The changes involved in the work of Copernicus arise, in our view, as a result of interweaving epistemological and mathematical controversies in the Arabic tradition which challenged the Ptolemaic model. Our main case study is the work of Ibn al-Haytham who devotes a whole book to the task of refuting the implications of the *Almagest* machinery. Ibn al-Haytham's *al-Shukūk* had such an impact that since its disclosure the *Almagest* stopped being seen as the suitable model of the heavenly bodies. Numerous attempts have been made to find new alternative

models based on the correct principles of physics following the strong appeal launched by both Ibn al-Haytham and, after him, Ibn Rushd. The work of Ibn al-Shātir, based exclusively on the concept of uniform circular motion, represents the climax of the intense theoretical research undertaken during the thirteenth and the fourteenth centuries by the Marāgha School (which owes its name to the observatory of Marāgha in north-western Iran). The connection point, in our view, between the works of Ibn al-Haytham and Ibn al-Shātir is that while the *al-Shukūk* gives the elements to build a countermodel to the *Almagest*, the work of Ibn al-Shātir offers a model which takes care of the objections triggered by the work of Ibn al-Haytham. Furthermore, not only has the basic identity of the models of Ibn al-Shātir and Copernicus been established by recent researches, but it was also found out that Copernicus used the very same mathematical apparatus which was developed by the Marāgha School over at least two centuries. Striking is the fact that Copernicus uses without proof mathematical results already geometrically proven by the Marāgha School three centuries before. Our paper will show that Copernicus was in fact working under the influence of the two streams of the Arabic tradition: the well known more philosophical western stream, known as physical realism, and the newly discovered eastern mathematical stream. The first relates to the idea that astronomy must be based on physics and that physics is about the real nature of things. The second relates to the use of mathematics in the construction of models and countermodels in astronomy as developed by the Marāgha School. The case presented challenges the role of the Arabic tradition assigned by the standard interpretation of the history of science and more generally presents a first step towards a reconsideration of the thesis of discontinuity in the history of science. Our view is that major changes in the development of science might sometimes be non-cumulative, though this is not a case against continuity understood as the result of a constant interweaving of a net of controversies inside and beyond science itself.

Translation of Roshdi Rashed's *Philosophie des mathématiques* (to appear in Rahman, S., T. Street and H. Tahiri (eds.): *The Unity of Science in the Arabic Tradition: Science, Logic, Epistemology and their interactions*, Springer/Kluwer.).

In press

Rahman, S., T. Street and H. Tahiri (eds.): *The Unity of Science in the Arabic Tradition: Science, Logic, Epistemology and their interactions*, Springer/Kluwer.

http://www.springeronline.com/sgw/cda/frontpage/0,0,5-0-69-34544171-0,0.html

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Other Articles

An introduction to logical systems for defeasible argumentation
Essai pour un rapprochement entre la philosophie et l'histoire des sciences

These two papers are avilable on the following website:
http://stl.recherche.univ-lille3.fr/sitespersonnels/rahman/rahmanequipetahiri.html

Forthcoming

Rahman S. et H. Tahiri (eds): Vers une épistémologie poincarienne.
Tahiri H. (ed.): Deux études de logique et d'épistémologie arabes.

To appear in King's College, collection Cahiers de Logique et d'Epistémologie.

http://www.collegepublications.co.uk/

Collequia

Objections to the thesis of discontinuity of science: Ibn al-Haytham's *Doubts about Ptolemy*, FIRST LISBON COLLOQUIUM FOR THE PHILOSOPHY OF SCIENCE: The Unity of Science: Non Traditional Approaches, Lisbon, October 2006.

Naissance des controverses scientifiques : *Al-Shukūk* d'Ibn al-Haytham défiant l'*Almageste* de Ptolémée ; Communication faite au colloque de la SOCIETE DE PHILOSOPHIE ANALYTIQUE, AIX EN PROVENCE, Septembre 2006.