

FOREWORD

As the pursuits of the sciences, arts, literature or engineering or any conceivable discipline, are all anthropocentric endeavors which are solely depending on human logic, creativity and intuition, it is unlikely that the methodologies of them all are totally disconnected. Even amongst two disciplines, which are seemingly quite farther apart and completely orthogonal, there may be some common threads in modes of thought, lines of discourse, methods of analysis and interpretation of data.

Thus, a conference exploring the methodologies of diverse disciplines which brings together active inter-disciplinarians from various fields of study may serve the purpose of finding commonalities, identifying distinct features and initiating discussions which can, with some concerted efforts, foster inter-disciplinary dialog among practicing researchers and young minds. At such conference, ideally, people will emphasize how they do things, how they reason, how they interpret (but less so on what they do). It is expected that these dialogs would, while sharing this information, lead to cross-fertilization and even to some collaborative research ventures. This was the aim of the first international interdisciplinary conference on Computer science, Humanities, Engineering/Education/Economics and ScienceS (natural and social sciences) interactions, also known as the First Interdisciplinary CHES Interactions Conference.

The seeds for this conference were sown in the Summer of 2006, as we got together for the Third Feynman Festival conference at the University of Maryland, USA. We picked Saskatoon in August 2009 as the venue for the first gathering. From the very early planning stages of the conference, we were well aware, that a conference of this type can easily get out of hand, get diluted and become a forgotten episode. In order to avoid such cataclysm, we assigned ourselves a few tasks. We set ourselves as a first task to invite serious researchers whose work influenced more than just their main discipline. Secondly, we reminded our speakers, regardless of their international status, that the two main goals of this conference were i) to share their methodologies with people from diverse areas of research and ii) to draw parallels between their field of study and other disciplines as much as possible. Our third task consisted in imploring them to submit papers for inclusion in the proceedings.

We believe that this proceedings volume shows that we were quite successful in attracting serious scholars of international renown from a diversity of disciplines.

Given that this is a first attempt at organizing such a unique conference, we were not disappointed to observe that some contributors decided not to leave their comfort zones. As we have indicated above, we actively asked contributors to explore the common and distinct features of their field(s) of study with those of other disciplines. We also reminded them to carefully assess constraints and be aware of misconceptions which may be generated when one borrows concepts and techniques from other fields.

Almost all contributions in this proceedings volume fall into either one or more categories of generation, practice and communication of knowledge across disciplines. Many authors spoke about applications of a set of techniques to more than one area of study.

Not all presentations and discussions of the conference are included in this proceedings volume. The reader will find an extensive discussion of statistical physics approaches as they apply to cognitive psychology, economics and market analysis and phase transitions as they pertain to religion and languages (Tsallis, Stanley, Jackson, Switzer and Ausloos). Knowledge acquisition and epistemology are the subjects of more than one contribution (Juurlink, Gupta, Pollack and Roychoudhury). Methods of quantum mechanics and its applications were the subject of the papers by Goyal, Busemeyer and Khrennikov. Some of them ventured into pointing out the pitfalls and mishaps that might befall if one imports metaphors of one discipline to another one oblivious to the subtle distinctions amongst them (Jackson, Porter, Rangacharyulu and Haven). Csapó elucidated symmetry and asymmetry as underlying currents in music composition, while Augsburg focused on integrating different modes of inquiry for school teachers.

We have many people and organizations to thank for the success of this conference. The Honorable Rob Norris, Minister of Advanced Education, Government of Saskatchewan (Canada) was a supporter and provided funds. We have also received financial support from the Universities of Saskatchewan and Leicester (UK). Janusz Kozinski, Dean of Engineering at the University of Saskatchewan, not only sponsored this conference, but he also lent his staff to actively help us in organizing the event. Brij Verma of the Division of Science

gave a helping hand in organizing the local events. As always, Marj Granrude and Angelika Ortlepp of the Physics and Engineering Physics department provided unstinting help. M.P.M. Nair donated his time, energy and technical prowess in videotaping the full conference. Karen Tanino and Anne-Marie Cey were indispensable in pulling the conference together and getting the word out. We also thank Peter Jackson (Dean of Social Science at the University of Leicester) and Alan Bryman (Head of Department of the School of Management at the University of Leicester) for their ongoing support.

Thanks also to Stephen Garrett (from the Mathematics Department at the University of Leicester) for suggesting Paul Towers (also in the Mathematics Department) as ‘the’ gentleman who would take care of all our formatting problems. Stephen was indeed correct!

We must also thank Philippe Haven for having supplied one of his drawings to grace the cover of this proceedings volume.

Preparations for a sequel to this conference, which will be held at the University of Leicester in the Summer of 2011, are underway. We look forward to a continuation of engaging intellectual discourses of diverse disciplines enriching each other.

Chary Rangacharyulu (Dept. of Physics and Engineering Physics; University of Saskatchewan (Canada))

Emmanuel Haven (School of Management; University of Leicester (UK))