1st ABEP/Oxford Centre for Brazilian Studies Conference
St Anthony’s College, Oxford – 19/03/2004

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Preface - ABEP

Twenty-four years ago a group of Brazilian students and researchers met at the University of London Students’ Union to found ABEP, the Association of Brazilian Postgraduate Students and Researchers in Great Britain. They were then driven by the aspiration of a democratic Brazil.

But Brazil and indeed the world in the early eighties were quite different from today. These last two decades of a turbulent twentieth century and early years of the new millennium have witnessed significant changes in the political scenario both at national and global levels. Moreover, the accumulation of knowledge and the speed of scientific development and communication have few (if any) precedents.

Throughout these years, ABEP has been lead to adapt and evolve. Together with its formal representative roles, it became a virtual community of around 250 subscribers and more than 100 registered members from all over the UK. We still wish for the consolidation of Brazilian democracy but our aspirations have increased in depth and scope. We now aspire to be a country conscious of itself and its role in the world in which science & technology, arts and education are essential ingredients for development. Besides, we perceive ourselves as active players, ready to share responsibilities and willing to contribute. This first ABEP / OUCBS Conference is a major step towards these revised and expanded roles for the Association.

The Conference aims to celebrate the presence of Brazilian researchers and postgraduate students in the UK, the diversity of their backgrounds and research topics and the long-standing Brazil-UK postgraduate links. Both the work by Brazilians and work about Brazil are discussed, with an opportunity to present projects and findings to an educated, non-specialist audience. The sheer number of abstracts in this ‘Research Abstracts 2004’ book is an indication of the demand for such an event.

We are very pleased with the collaboration with the Oxford Centre for Brazilian Studies at the University of Oxford, which provided us the infrastructure, secretarial services and the academic environment of excellence we were seeking for the Conference. We were delighted to have the support from the Brazilian Embassy in London, the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), the British Council and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES). Special thanks go to all staff at the OUCBS, to the speakers and chairpersons and to all our associates, specially the hard-working members of the organising committee.

Dr Jailson de Barros Correia
President,
ABEP 2003-2004
Preface – University of Oxford Centre for Brazilian Studies

Since its creation in 1997 the University of Oxford Centre for Brazilian Studies has, I think I can say, established itself as the leading academic centre for the study of Brazil outside Brazil – and has become a model for the creation of Brazil Centres in other universities in Europe and the United States. The Centre is separate from, but co-operates closely with, the University’s Latin American Centre as well as with a number of other University of Oxford research centres and institutes. It has links with several colleges of the University, especially St Antony’s College, a postgraduate college specialising in the interdisciplinary and comparative study of the major countries and regions of the world.

The Centre is funded through a unique partnership between the Brazilian government, the Brazilian public sector, companies in the British and Brazilian private sectors, the Brazilian non-profit making ‘third sector’, the Higher Education Funding Council for England (HEFCE) and the University of Oxford.

The aims of the Centre are:

• to co-ordinate and develop postgraduate teaching and advanced research on Brazil across the social sciences, life sciences and humanities within the University of Oxford
• to bring scholars, intellectuals and policymakers from Brazil and elsewhere to Oxford, and provide them with the environment in which to pursue the academic study of Brazil and international issues with a Brazilian dimension in a comparative framework
• to attract Brazilian postgraduate students to Oxford, and to foster a new generation of British research students specialising on Brazil
• to promote a greater understanding of Brazil – its history, society, culture, politics, economy, ecology, and international relations – within the University of Oxford and in the UK/EU more generally through a programme of lectures, seminars, workshops and conferences, research projects and publications
• to extend and strengthen academic links between the University of Oxford and universities and research institutions in Brazil, and between the University of Oxford and other universities in the UK, Europe, the United States and elsewhere with centres or programmes of Brazilian studies

The Centre welcomes the opportunity to work with the Association of Brazilian Postgraduate Students and Researchers in Great Britain (ABEP), with the CNPq, CAPES, the British Council and other funding agencies, and with the Brazilian embassy in London, in the organization of the first ABEP/University of Oxford Centre for Brazilian Studies conference, to be held at St Antony’s College, Oxford, in the production of this volume of research abstracts, and more generally in the promotion of Brazilian postgraduate research in the UK.

Professor Leslie Bethell
Director
Centre for Brazilian Studies
March 2004
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HUMANITIES I

Includes:

Archaeology
Architecture
Arts
Education
Linguistics
Literature
Philosophy
Religion
Architecture and Fashion

Ana Araujo (1)
(1) University College London

Abstract: The discussion about the connections that might be established between clothes and buildings is hardly a new one. History provides the evidence of an enduring, though sometimes turbulent affair that leads far back to the Mesopotamian period, and gets as close to contemporaneity as to link together the most up-to-date exemplars deriving from both fields. In nearly all moments of human history one is to find close similarities between the shapes of clothes and buildings. To mention but a few, one could think of the plies of the woman’s dress as cast in the Ionic column, of the medieval ecclesiastic apparel in reference to the architecture of the cathedrals, of the black silk top hats of the 1850s (also known as ‘stovepipe’ hats) echoing the chimneys of the factories... The disciplines of fashion and architecture are surely intertwined, but such a relationship is most of the times overlooked. Particularly from the point of view of architecture, there is a great deal of resistance to the idea of being related to the so-considered unstable and futile universe of fashion. The underlying argument is that architecture deserves a nobler position in the ranking of culture than does fashion.

But what precisely lies behind this embroiled relationship?

The poster will discuss the historical precedents of the relationship between architecture and fashion, focusing on the resistance offered by architects to being related to this other discipline. The aim is to disclose a set of mechanisms operating inside the architectural discipline that, although organized to refute the association with fashion and clothing, will reveal, through a closer examination, the reasons why such a connection has been so strongly repressed.

Keywords: Fashion; Architecture; Clothes; Buildings
Lifestyle, Taste and Authority: Discussing Practices of Home Interior Design in Recife/ Brazil.

Katia Medeiros de Araujo (1)(2)
(1) Ph.D. Student at the Federal University of Pernambuco / Brazil, PPG Anthropology.
(2) Visiting Student at Lancaster University / UK Department of Sociology.

Abstract: This work approaches the issue of consumption and material Culture as a privileged thematic to understand culture and society. The study involves a social stratum that can be categorized as a new middle-class sector of Recife, according to the features of the contemporary social structure designed by Pierre Bourdieu: a kind of bourgeoisie that disposes both of high economic and cultural capital. They are representatives of a new bourgeoisie and petit-bourgeoisie that, differently from the old bourgeoisie that splits up with the modern old intelligentsia, do not require and cannot allow a split between commerce and culture (or economy and society). As a result of the Post Modernist (or the Post Fordist) process of social transformation, they are seeking to legitimate precisely the cultural activities that constitute the center of their economic occupations. These professional areas or subjects are well exemplified by such fields like management, media, design, fashion, entertainment and similar.

The main focus of the debate under construction will be directed to the interaction of the members of this consumer new bourgeoisie and the professionals of interior design, within the process of planning interior design interventions to the consumer’s residences, as well the product of these works, through the perception of both the two involved parts (professional and consumers).

The main aim of the work is discussing (or trying to measure) the spaces of decision that are opened (or not) to the consumers, faced with a supposed imposition of fashion, pressures from marketing and canonical professional ideas about home design. In other words, I’m seeking the way of their authority, or capability to deny or to preserve their opinions and tastes, in relation to their own home structures and appearances, in order to understand the features of the cultural dynamics of this fraction of Recife’s society.

Keywords: Material Culture and Consumption; Economic Anthropology; Home Interior Design.
The Inheritance of 17th-Century French Ballet in the Contemporary Brazilian Carnival Parade

Ricardo Barros (1)
(1) University of Hull

Abstract: The Carnival Celebrations and Parade of the so-called “Schools of Samba” which take place every year countrywide in Brazil up to the present date have been linked to black ritualistic freedom of expression and a vivid demonstration of the African roots in Brazilian culture. More particularly the competitive parade, which takes place in the major cities in Brazil, enthuses audiences and gathers followers and admirers all over the World for its flamboyancy, panache and debauchery. However little is know regarding the very roots and the historic nature of such public events. Superficial hints are provided by the colourful and extravagant costumes and the very ideal of liberation and collective escapism. The reality is in fact that such events trace us back to our Iberian origins and further still to the germ of the Ballet form in 17th Century France. Still limiting our search within Brazilian borders we realise that processions with religious and secular characteristics combined were major events during the 18th Century, reaching their epitome with the “Triunfo Eucaristico” in 1733 and the “Áureo Trono Episcopal” in 1748, in Minas Gerais. The profusion of details described in primary sources, ranging from fabrics used to make the costumes, the order of the procession, street ornaments and the presence of honour guests exemplify the splendour witnessed by the locals - one that could rival today’s Carnival parade if not supersede it. Such Religious festivities were brought through to us Portugal and Spain, were similar events are described by various primary authors such as Claude-François Ménestrier (in 1682) and Michel Bonnet (in 1724). These facts trace us further afield to France, which hosted and promoted a major development and systematic ordering of dancing. The monarch, Louis XIV, ordered the establishment of the Académie Royale de Danse as early as 1661, an entity set up in order to ensure the longevity and proper order of dancing by governing and ruling its composition, production and use. Authors such as Michel de Pure (in 1668) and Michel de Saint-Hubert (in 1641) give us astonishing evidence of the concern and care employed when creating productions such as Ballets, Carouzels, Joustes and indeed Processions, which all relate to and share the same compositional principles as the Ballet. The objective of the present investigation is to reveal the astonishing parallels between those compositional elements to those contained in the contemporary Brazilian Carnival Parade.

Keywords: Carnival; Ballet; Procession; Origins; Brazil
The Expression of Passions in Baroque Dance

Ricardo Barros (1)
(1) University of Hull, 2004

Abstract: The present research project aims to denote the original connection between dance, music and the expression of Passions (according to the Descartian theory) in 17th and 18th century original theatrical choreographies notated in the ‘Feuillet-Beauchamps’ system. It encompasses the study of baroque dance in the light of music, aesthetics, the ‘Theory of the Passions of the Soul’ and its rhetorical connections. The objective of the investigation is to unveil the rhetorical connections between stage dances and music by means of musical and choreographic analysis, in order to enumerate a vocabulary of movement intimately and intrinsically related to musical figures and, most important, to the rhetorical figures, inherent to the creative process in the 17th and 18th centuries. One can conclude from this rich evidence analyzed that both dance and music shared some compositional principles, which relate to the declamation of a “speech without words” with the use of rhetorics as a frame to shape its course and where dance and music interact in order to reinforce the Oratory Speech. In the same manner an orator would carefully choose what rhetoric figures to apply and what intensity of emotion to use in each section of his speech in order to stir the audiences emotions (or “Passions”), composers and choreographers likewise employed specific musical & chorological figures which relate to each other and have specific functions in the discourse. The results of a crossed-analysis process will form a lexicon of figures establishing connections between specific dance sequences and their musical equivalents, as well as their rhetorical meaning. It will be of inestimable value for the reconstruction of original 17th and 18th century dances, for the creation of new dances based on baroque principles as well as for the performance and interpretation of Baroque dance music, now observed from a new perspective.

Keywords: Dance; Music; Rhetoric; Analysis; Baroque
Students’ Interpreting Quantification by Graphs

Liliane M. T. Lima de Carvalho (1), Terezinha Nunes (2)
(1) Universidade Federal de Pernambuco, Brazil
(2) Oxford Brookes University, UK

Abstract: The aim of this project is to examine the interaction between conceptual and representational aspects in the interpretation of graphs. It is hypothesised that neither an analysis of the form of representation used in graphs nor an analysis of the phenomenon represented on their own suffice for understanding pupils’ difficulties in interpreting graphs. Some graphs represent additive reasoning situations (e.g., graphs that display frequencies; see Selva, Falcao, & Nunes, 2004) whereas others represent multiplicative reasoning situations (e.g., functions; see Vergnaud, 1991). The interpretation of graphs that represent these two different types of problems has different levels of difficulty even if the same form of graphical representation is used. Previous research has often focused only on the form of the graphical representation and failed to consider the differences between the phenomena that are represented. This programme of research aims at filling this gap in the literature. The first study analysed how the form of information presentation – by means of stacked-bars graphs, tables, or cards describing individual cases – affect students’ interpretation of probabilities. Students (mean age 12.4 years; n=30; attending a Brazilian public school) were distributed into six groups, which were randomly assigned to each condition of presentation of information. The students were asked to consider the information they had and answer questions about probabilities. For example, one problem indicated that the students in one class had bought either one type of CD player (CD1) or a second type (CD2). The information they received indicated how many students were pleased with their choice of CD and how many were not. They were asked: is it more likely that you would find a student pleased with CD1 or CD2? Why? An analysis of the groups’ answers identified two types of reasoning: comparison strategies (part-part and part-whole relations) and strategies without quantification. Comparison strategies were more frequent when the information was presented by means of graphs or tables – 40% and 35%, respectively – compared to 25% when the information was presented by means of cards. Failure to quantify was more frequent when the information provided was about individual cases (65%) and less frequent when it was presented by means of tables (38%) or graphs (10%). It is concluded that providing information in ways that already quantity it – tables or graphs – facilitates the process of interpretation. When information is provided about individual cases, an extra effort is required for quantification, and this quantification may not take place.

Keywords: Interpreting Graphs; Multiplicative Structures; Probabilities.
Artistes and Impresarios – The Early Years of Brazilian Recorded Music

Geoffrey Brown Chacaro (1)
(1) University of London, Kings College

Abstract: The recording of Brazilian music is today an enormous Industry but where and when did it begin? Who was involved in its creation and what kind of music was first recorded? These and other questions are to be addressed within the historical and cultural context of Rio de Janeiro during the Belle Epoque. During this period, the end of the nineteenth century until the First World War, Brazil and her capital underwent profound alterations. Together with other innovations, these years saw the arrival and expansion of the recording industry.

In the ten years following 1902 thousands of Gramophone recordings were produced, marketed and sold within Brazil. The success of this new technological development was realised primarily by the work of one man, a European immigrant and recent arrival in Brazil.

The careers of the artistes and impresarios involved in this new manifestation of the music business are also to be considered. Amongst those who participated in the early recordings are solo singers, pianists and other instrumentalists together with ensembles such as Choro groups and military bands.

The legacy of these recordings lies in the variety and representation of musical styles that together reveal Brazilian music of this period. It is the music that preceded the rise of the Samba as the dominant national musical expression. It is a neglected world of Mazurcas, Polcas, Choros and Maxixes: a world captured on disc and which must be acknowledged as a fundamental part of the ongoing tradition of Brazilian music.

Keywords: Belle Epoque; Rio de Janeiro; Recordings; Artistes; Maxixe.
Abstract: The paper aims at interpreting works related by the Orpheus theme which engage in a dialogue with one another and which belong to three different semiotic systems: the mythic, the literary and the filmic. The analysis intends to establish the relationship between the three works—the play *Orfeu da Conceição*, by Vinicius de Moraes, the films *Orfeu do Carnaval* (translated *Black Orpheus*) and *Orfeu*, respectively by Marcel Camus and Carlos Diegues—and the Greek classical myth. It also intends to establish the relationship between the various semiotic systems at stake, taking into account the ideological and social perspectives implicit in the process. At the semiotic level, investigation focuses on the elements which, in both films, serve the same function as in the play by Vinícius de Moraes and in the classical myth, which evokes an inherent human aspiration, that of experiencing eternal love. At the ideological level, it focuses on a temporal point of view, portraying different moments of Brazilian history. Vinícius sees the *favela* hill as an idyllic place, the stage for the unfolding of a sad story, for him “a *carioca* tragedy”. For Marcel Camus, the scenario shows Brazil’s image abroad in the sixties: the country of Carnival. Nothing tragic happens in this version, whose end is triggered by an accident. The contemporary scenario of Carlos Diegues expresses the drama of the marginalized people of big cities, who are forced to live at close quarters with drug traffic, police truculence and shootings, in a country far more violent than the Brazil of the sixties. With its network of intertextual links and connections, the texts examined are independent works, new and creative, distinguished by the inevitable cultural traces attached to each version. Although Diegues’ film incorporates the sadness of the myth, it also displays a festive aspect in its praise of the Brazilian music.

Keywords: Myth; Orpheus; Vinícius de Moraes; Carlos Diegues; Marcel Camus.
Formal and Informal Music Learning Backgrounds in Brazilian Higher Education

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Abstract: Nowadays in Brazilian Music Schools there is a mixture of students concerning their previous background, which means that they learn music through different methods. Some students are totally classically trained which implies in receiving formal training whereas others have, besides some formal training, experience with informal musical practices through popular music, that means learning through other methods totally different from the conventional considered at institutions. The aim of this paper is to discuss some aspects of music students with different backgrounds in Brazilian Higher Education context with the support of the literature about formal and informal learning. This will be examined through a pilot study that was carried out at Music School of Federal University of Rio de Janeiro. The pilot consisted of a questionnaire, observation and interviews. Some findings emerged from this pilot study and will be presented.

Different students’ backgrounds reflect in different approaches and attitudes towards learning music as well as imply in a diversity of skills in making music. Many are the challenges and conflicts for the music education community in dealing with those differences. Discussions about methods of learning seem fundamental since the attitudes of musicians will be a reflection of the methods through which they were educated. In this sense Music school has a challenge in knowing how to cope with the new students’ profile, which comes from popular music background because of the differences between their conceptions of music, values, beliefs and attitudes. It is important to discover other ways of teaching and learning music. On the other hand there are benefits for students from Music School in living together and exchanging experiences.

Keywords:
Addressing Cultural Plurality in Brazilian Schools: The Case Study of EFL Teachers.

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Abstract: Cultural plurality is an issue that has been intensely discussed in recent times, in Brazil, largely due to the fact that the new National Curriculum Parameters have been implemented since 1998. The National Curriculum Parameters are organised in themes, and within these, cultural plurality is designed to be addressed as a cross-curricular theme.

This case study examines the way that EFL teachers understand and address issues of cultural plurality in education. The importance of researching in the field of EFL, is that EFL has a responsibility for promoting equality in education. Also, within the FL curriculum, cultural plurality is the theme that is most emphasised in the official documents. The overall argument of my thesis is that unless EFL teachers have adequate understanding of issues of cultural plurality, official policy guidance will not be fully implemented. In order to explore this thesis the methods used to gather data included (i) a questionnaire, (ii) interviews, (iii) a workshop in which teachers developed materials on the theme of ‘race/ethnicity' to discuss with their students and (iv) classroom observation of these materials in use.

Understanding the way that EFL teachers address issues of ‘race/ethnicity' is also a way of understanding the process through which EFL teachers implement what is written in the FL curriculum within their own classes. This thesis focuses on cultural plurality, specially the issue of ‘race’/ethnicity (anti-racist education). This study does not only explore the way teachers address issues of ‘race/ethnicity'. It also seeks to examine the way that EFL teachers educate students about ‘race/ethnicity' in the EFL context. This is designed to promote equality in a plural cultural society such as Brazil.

Keywords: EFL; Curriculum (PCN); Teacher Education; Anti-racist Education; Race/Ethnicity.
Identity and Territorial Representation in Contemporary Art Institutions: The Gap Between Discourse and Practices

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Abstract: In the contemporary society, museums have an important role in the construction of collective memory, cultural identities, ethnicities and history. A space exists where dialogue between different cultures takes place. Sometimes this dialogue can turn into silence. It is there that international competition between nations is constantly reflected, making art institutions a privileged field for sociological research about identity, territory and political matters. Our paper is about how the most important contemporary art institutions represent cultures, identities and territories that are outside of the political, economic and artistic centers. Our principal focus will be the peripherical place and the representation of Brazilian culture in the international art scene. Our research illustrates that hidden underneath statements of political correctness, concerning multiculturalism and equity in the art field, there lies an established hierarchy in the way identities are exposed. Many of the practices in the museums are based on prejudices and stereotypes and, although many of the works chosen are representative of international cultures, better places are reserved for a few chosen countries. And it is not by chance that these same countries hold much of the cultural, economic and political power.

Keywords:

1 A first version of this paper was originally presented at the Sociological European Conference, in Murcia, Spain, September 23\textsuperscript{rd}-26\textsuperscript{th}, 2003 and also at the New School University, NY, the October 20, 2003, at Vera Zolberg’s class Museums and Society.
4 Quemin, Alain. L’art contemporain international : entre les institutions et le marché, Nîmes, Jacqueline Chambon/Artprice, 2002.
The Image, the Mirage and the Deception: The City’s Playwriting

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(1) PUC-RJ (CAPES-sandwich EHESS-FR)

Abstract: Brazilian theatre was developed along with the image of the Capital – what makes it hard to affirm whether the city was the scenery where the drama was set up or vice versa. As the Republic settled down and Pereira Passos started the modernizing process, the city went through an aesthetic reconstruction. New values and customs established themselves inside a theatrical turmoil as we find at the so-called Teatro de Revista the real expression of a city getting in terms with its status of a representative centre of the country. This sort of a mirage, which started to be defined at about 1880, sought the building up of an urban utopia called Rio de Janeiro. Without taking in account its own creatures, theatre and city assumed different shapes depending on who was watching it. Thus, a weak dramaturgy disguised itself in ‘National’ when it tried to achieve realism patterns, by using the city, deceiving metropolis, as its main subject. The text was included in the ‘Theatre Module’ of the exhibition Rio Landscape, at the Rio de Janeiro’s Museum of Modern Art, in August/September 2000.

Keywords: Theatre; Playwriting; Urban Image.
Deconstructing *Se7en*: An Analysis of Film Titles

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Abstract: This study examines how poststructuralist theory is related to deconstructive style in design. It tries to understand why the main-title sequence of *Se7en* (1995) is considered a deconstructive example of design. This study applies poststructuralist theories, chiefly Jacques Derrida's deconstruction theory, as foundations for the analysis. The study begins with a survey of literature on film titles. It also investigates the characteristics of postmodernist design and the history of deconstruction in the design domain. The third chapter explores Derrida's deconstruction theory and methods of analysis based on Roland Barthes semiology. The fourth chapter is the syntheses of the analysis results. The fifth chapter discusses the findings, concluding the thesis. *Se7en*’s credits are a landmark in the history of film titles. Their distinctive aesthetics influenced a generation of film title designers and aficionados. This project deconstructs *Se7en*’s main-title sequence and provides an understanding of how *Se7en*’s film titles relate to deconstruction viewed both as critical theory and aesthetic practice. This study provides an entry point for closer scrutiny into intersections of graphic design and cultural theory.

Keywords: Film Openings; Graphic Design; Semiotics.
Film Openings | The Untold Story

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Abstract: The main objective of this research is the analysis and historical review of the origins and development of the titles designer work, from the beginning of cinema up to the present time. The study intends to develop a parallel between the development of the static traditional graphic design and the design of movie titles, with the intention of verifying how and to what extent the latter has followed the technological and/or aesthetic tendencies from traditional design.

This study starts with the hypothesis that cinema design has accompanied the tendencies of printed design, although with a certain relative delay, and not in the leading position of innovator, since it is still an expensive and permanent activity.

This work also proposes to examine the memory, passage, creation and production of the works of pioneers like Pablo Ferro and Saul Bass, and to focus on the analysis of the technical-aesthetical situation in which the design of opening titles finds itself today.

Thus, the study will able to signpost the possible future directions of title design.

The study will focus on the opening titles of American films from the 40s to the 90s. All the other sections that make part of the film’s publicity and visual identity (i.e. trailers, banners, posters, etc.) will be analyzed in parallel to the intention in order to verify suggestive associations.

The study will be based on historical and analytical methodologies. The historical methods will contribute to the review phase, file creation and organization, criticism and systematization of the source production processes; analysis, interpretation and comparison of oral sources and document sources. The review of the memory will be carried out through interviews with designers, directors and cinema and design critics.

This oral review is intended to offer qualitative interpretations of the historical process in which this specific professional area has developed, its past, its identity and a forecast concerning its future. (Amado e Ferreira, 1998)

The interest in this topic and the effective study will contribute to the opening of a new direction for the design profession, in that it represents the recognition of an activity that is apparently new, while having existed for more than 50 years. The research intends to investigate the development and autonomy of this field in relation to traditional design and the communication field.

Keywords: Film Titles; History; Graphic Design.
Inca Representation of the Upper Amazonian Indians

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Abstract: In studies of the indigenous people of South America there has generally been a historical division between the people of the lowlands and those of the highlands. The ancient cultures that flourished in the Andes are usually seen as superior and more civilised than the groups settled in the Upper Amazon and Amazon Basin. Tahuantinsuyu – the Quechua name for the Inca Empire – was divided into four parts or suyas namely Chinchaysuyu, Condesuyu, Collaysuyu and Antisuyu. The latter, eastern part of the empire was located in the modern-day Upper Amazon region. My research is based on the analysis of some key historical sources written by native Indians and Europeans during the sixteenth and seventeenth centuries. I am focussing on those parts of the sources dealing with the Antis – a collective term for the many varied ethnic groups living in the Antisuyu. On a number of occasions in these sources, the authors emphasise the nudity, savagery, cannibalism and lack of organisation of the Antis. They also mention that notwithstanding all of this, they are good and beautiful people, and their lands are rich and awaiting conquest. They write as if the Antis were living in a primitive state, either waiting to be civilised by the Incas or to receive the Catholic faith from the Spaniards. By analysing these sources I intend to demonstrate that the image of the Antis’ primitive condition is reinforced and exaggerated by the Spaniards during their colonisation of Peru. I also believe that in pre-Columbian times the Incas and Antis had much closer ties (trading and cultural) than was previously thought.

Keywords: Incas; Upper Amazon; Ethnohistory; Pre-Columbian America.
On Teaching Authority Referred to the Girard’s Theory of the Foundress Violence

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Abstract: The 20th Century is both the century of mass school systems and the century of greatest wars. Which connections exist between school and violence: antagonism, collaboration, indifference? René Girard developed a daring sociological approach concerning the human violence. The present paper attempts to refer that theory to the issue of teaching authority. More specifically, we intend to clarify the meaning and ask for the explanatory power of the three following hypothesis: 1) The recognition of teaching authority has a straight validation relationship with the process of institutionalization of human antagonisms generated by mimetic desire. Within a effective social order, the teaching authority normally uses ritualized violence to protect objects (knowledge) from a stronger and primary violence; 2) Human societies have been structured, along the History, having their sovereignty principles in the force of Sacred, Law or Money. The growing importance of Money in life styles of modern societies respond for the creation and central role of professional hierarchies and for the kind of knowledge that is in the basis of scholar programs and teacher authority. 3) As institutional prominence of Money faces a constant, synchronic and diachronic pressure of concurrent sovereignty principles (the Sacred and the Legal), so the teaching authority finds part of its recognition in ritual and political orders which were predominant in past times and/or are progressively important in the present. The growing number of contradictory signs we are receiving and producing in present world disturbs the diagnosis on the fact that we are (or are not) going through a radical crisis in mercantile order, with the powerful deal of generalized violence usually provoked by such transitions. It is important to investigate if teaching authority tends to be driven by the decadency of mercantile order in which it is engaged, and particularly as it does not explore the competition among the three sovereignty principles in order to elevate human existence above mimesis and sacrificialism.

Keywords: Authority, Violence, Teaching.
Teaching Mathematics Student Teachers in Brazilian Challenging Contexts

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(2) Universidade Federal de Minas Gerais – University of Warwick - CAPES

Abstract: As lecturers in teacher education at Brazilian universities, we have observed several issues associated with the relationships between the theories which we are expected to teach to student mathematics teachers, the theories which are actually taught to them, and their teaching practice. These issues are challenging new mathematics teachers, and those who teach them. In addition, the continental dimension associated with previously unequal regional developments caused hugely disparate contexts of formal education in different parts of Brazil. This multifaceted situation allowed or impeded the development of different experiences from the official educational directions. We argue that it is inappropriate for lecturers to attempt to approach students’ expectations by “answering” or “showing” how they can carry out their teaching practices. On the other hand, a presentation of theoretical models without elements which might support an articulation of theory-practice is not an effective learning experience for student teachers. This would reinforce the dichotomy between theory and practice, leaving to students the task of building up their own pedagogical skills. The Brazilian government attempted to remedy the situation which causes the gap between theory and practice in teacher education, publishing a controversial document (Brasil, 2000) which prescribes several actions for pre-service courses. Amongst other recommendations, this document advises that the student teachers’ classroom placements must start in the first year of undergraduate course. The attempt to articulate theory and practice, as suggested by official educational documents, sounds positive. However, we understand that this type of direction per se does not guarantee an adequate teaching approach that integrates theoretical and practical aspects involved in teaching education. We feel it is too idealistic, because students themselves must respond, during their own practice as teachers, to non-trivial issues such as how to actually deal with diversity without losing sight of the many competing situations individuals will face later in their professional lives. We understand that if theories of learning are to be taught in a pre-service teacher education course in a context such as the one in our country, they should account for its cultural and social aspects. In our practice, we have generally been aiming at developing in our students not only a recognition of the diversity in our culture, but also a respect for it and a critical attitude to challenge our socio-economical situation. From our reflections we might conclude that Brazil need a stronger and wider redefinition of policies to support teacher education approaches at schools and universities.

Keywords: Mathematics Teacher Education; Relationships Between Theory and Practice; Policy Issues.
Critical Sense in Interpretation of Media Graphs

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Abstract: Gal (2002) suggests two main kinds of contexts in which the interpretation of graphs might be developed: ‘enquiry’ and ‘reading’. In enquiry contexts the people act as ‘data producers’ and usually have to interpret their own data and report their findings. The reading contexts emerge in everyday situations when people see and interpret media graphs which might be used to emphasize and/or disguise aspects of data (Meira, 1997; Ainley, 2001). School contexts are other situations in which interpretations of graphs are developed (Monteiro & Ainley, 2003). The School contexts have particular features which make them distinct from the others cited. The utilisation of media graphs in a school context seems to be an interesting innovation, as it brings together two different contexts of graphing. Nevertheless, Adler (2000) emphasises that the utilization of resources from out-of-school practices produces an important challenge for teachers, because the recontextualisation can be complicated and sometimes contradictory. That happens because the school graphing activities are not simply a continuation of solving mathematical problems outside school (Ainley, 2000; Evans & Rappaport, 1998). We suggest the notion of Critical Sense in graphing as a skill which can help readers to balance several aspects involved interpretation of media graphs in certain contexts. We focus on the fact that traditional pedagogic contexts, where the purposes of the tasks set and the activities undertaken in graphing are different from those which apply to out-of-school contexts, will be unlikely opportunities for the development of Critical Sense. Bringing media graphs into the classroom will not, in itself, create such opportunities if the tasks which are set remain narrowly-focused pedagogic tasks. Cooper and Dunne (2000) have demonstrated the difficulties which children encounter in answering mathematical questions that are set in ‘everyday’ contexts. They identify this difficulty as arising from the need to understand how much attention should be paid to the contextual content of the task. In pedagogical contexts, the ‘correct’ balance of attention between the everyday and the mathematical is likely to be pre-determined by the teacher, and so there is no opportunity for pupils to experience the need to make a choice for themselves about the balance that is most appropriate for a particular purpose. We wish to study Critical Sense in student teachers as a way of helping us, and them, think about teaching and learning graphing in ways that will support the development of Critical Sense.

Keywords: Teacher Education; Interpretation of Graphs; Mathematics Education.
A History and Analysis of the Constructions of Archaeological Identities in Lebanon: Theories and Methods Serving Colonialism and Nationalism (1860-1945)

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Abstract: This research traces the history of archaeological thought and practice concerning the territory of Lebanon, and the surrounding regions including Syria and Mesopotamia. Special attention is given to the attempts to construct identities since the nineteenth century, and allegories of archaeological identities built in complex socio-political contexts involving the influences of western colonialism, nationalist ideas, and local political and religious (sectarian) conflicts during the early twentieth century.

Keywords: Archaeology; Colonialism; Nationalism; Identity; Conflict.
Typography of Poetry: Methods of Segmentation in Traditional Poetry

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Abstract: This research fits into the group of theoretical works mainly concerned with widening and charting the concept sphere of design, more precisely, in the field of typography. The term ‘typography’ is used in this work to describe features of any verbal graphic language, whether written or printed and therefore considers the features of manuscripts as well as printed words.
The aim of this research is to investigate and analyse how traditional poetry has been handled in books from the typographic point of view. Traditional poetry here is defined as traditional forms of poems, especially those in septet (rhyme royal), ballad, sonnet and form. The research focuses on the binary structure of the poem on the page through opposing features, which means the printed text and the space around it. Segmentation is a visual division at the text into units that, to a greater or lesser extent, reflect an underlying structure. It can be seen in letterforms, indentations, stanzas, rhyme schemes, alignments, initial letters and drop capitals and in the use of illustrations, ornaments, titles and navigation devices. The object book is also considered in terms of page size, margins created by bindings and the kind of publication such as a single author publication or an anthology.
This research tries to answer questions about the evolution of typographic resources in different periods in the history of poetry and also to identify the role of typography in influencing the meaning of traditional poetry.

Keywords: Typography; Poetry; Influence.
The Effects of Culture on Fashion Design

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Abstract: Normally, fashion designers have an enormous capacity to understand the culture of their time and this understanding influences the expression of their creative work, as part of their cultural inheritance. This study will examine the work of three international fashion designers in order to determine the cultural influences that have informed their designs. For example, the British designer Vivienne Westwood is one of the world’s most original and innovative designers. She is influenced by the British class system, she draws inspiration from an eclectic range of sources and her cultural background is expressed through her unique work. Issey Miyake, the world famous Japanese designer referred to as the “designer’s designer” is another example of an expression of this specific and powerful language. His pleated, feather-light garments are inspired by the Japanese art of origami, an evidence of his particular mode of expression through the creation of design products. This study will also analyse Brazilian born fashion designer Lino Villaventura whose work, exhibited at Premier Vision in Paris in February 2003, attracted international acclaim. Previous studies that have investigated the work of Vivienne Westwood and Issey Miyake will be used to analyse how cultural influences can be determining factors in the creative process, in particular how these designers use colour, shape or style, and texture of the fabric, finish or decoration to signify differences in culture. The study will apply these determining factors to the work of Lino Villaventura to discover how Brazilian culture impacts on the creative process.

Keywords: Fashion; Design; Culture.
Time and Space Considerations in the Combination of Different Education Modalities

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(2) University of the Balearic Islands/Spain

Abstract: Especially it is presupposed time and space as variants in the format of the communication in different education modalities, as display the scheme below.

<table>
<thead>
<tr>
<th>Education modalities</th>
<th>Space</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presencial</td>
<td>Traditional Education student-teacher (class room)</td>
<td>Traditional Education The student's self-learning (library, center of studies)</td>
</tr>
<tr>
<td>Not Presencial</td>
<td>Distance Education (video-conference, chat)</td>
<td>Distance Education (web, mail, email)</td>
</tr>
</tbody>
</table>

One of the most significant aspects than it contributes positively to the Distance Education (EaD) is the autonomy of the independent student's learning of any restriction of time (schedules) and space (geographical), joining solutions to problems that until then hindered the traditional teaching. The use of different computation tools allows to make possible this new communication format, and the web space in the new educational computational environment must, for analogy, have all the precepts considered in the traditional physical atmosphere, even those physical environments destined to the a-Synchronous practices; with plots to assist the great existent demand and, in a certain way, imposed by the new existent social patterns.

The educational spaces being them synchronous or a-synchronous, inside of a higher education institution, has as interest to know which is your relationship with the individual, your behavior in a certain space.

Many educators or responsible for the educational environment know that a good administration of everything, as the disposition of the furniture or the interface ergonomic, can facilitate certain behaviors, certain sensations, or it can besides, to hinder others. In this point, it is looked with the critical spirit of the educational theories. Such a sense has to recognize that the traditional pedagogy offers magnificent shows of coherence among the architectural form (physics and ergonomic) and the pedagogic function, and that there is the need of new technologies have to import those thoughts.

The project topic, development and evaluation of the functionality and use of the educational spaces, is due to the consideration of the space dimension as one of the variables to have in mind when it’s time to administrate the educational development.

Keywords: Education Modalities; Educational Computational Environment; Distance Education; Educational Physical Spaces; Educational Virtual Spaces.
Study of the Brazilian Consumers’ Needs as a Strategic Design Tool for a Competitive Fashion Industry

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(2) Kent Institute of Art & Design, KIAD-Rochester (UK)

Abstract: Undoubtedly, the clothing industry is important for the Brazilian economy. Although it represents only 4% of GNP, this industry is the biggest generator of employment among all other transforming industries in Brazil. However through a competitiveness analysis, it can be seen that the Brazilian clothing industry has been affected significantly by market globalization because its production was traditionally organized to meet the demands of the internal market. Analyzing the Brazilian clothing industry, this research attempts to identify the factors that will enable the enterprises to become more competitive and ensure the long term success of the industry. The Brazilian market is served by two main types of companies: large corporations (multi-brand companies) and small and micro companies which produce from luxury products to those without a brand. In the clothing market in Brazil there is a wide gap between what is offered and what the consumer needs; notably because of taste, cultural values, climate, patterning and aesthetic aspects. The questions are: how to raise the profile and value of Brazilian design and offer a differentiated product, as well as facilitating a competitive edge? How is it possible to customize clothes in a market as large and diverse as Brazil?

There are two different aspects to consider when analyzing fashion design. The first – the intangible – concerns trends, attitudes, values and lifestyle. The second – the tangible – concerns the body, its shape and other anatomical factors. There is a tendency within the fashion design industry to ignore tangible aspects. The main objective of this research is to relate the characteristics of clothes to the concepts of anatomical and psychological adequacy.

This research investigates the elements that determine the choice of clothing products from the consumer’s point of view. A random survey was carried out in four big cities of the country. All the consumers were older than 15 years on the assumption that they had some income and could choose without parental interference.

The results indicated that the variables of age, socioeconomic status, sex and occupation, among others, impact differently on the level of importance attributed by the consumers to their needs in clothing consumption.

Using the analysis, the goal is to develop a design research methodology to assist strategic product planning for the Brazilian clothing industry, and consequently, the recovery and development of its internal market share.

Keywords: Fashion; Design; Clothing; Consumer.
Similarities and Differences Between British and Brazilian Consumers’ Preferences in Fashion Products

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Abstract: Globalization has compelled companies to implement new approaches and ideas to remain commercially competitive. For the fashion and clothing industries, design is a core stage of this process. Design research, as a science field, has to consider the environment and face changes and interconnected trends such as economic and cultural globalisation, the spreading of connectivity, the rise of information and the search for sustainability.

The product – clothing – is composed of ergonomics, fashion trends and subjective aspects. This approach pursues a multidisciplinary basis for analysis and research. The main objective of this work is to support the design of new products with an analysis of the features of clothes and their relationship with the user’s perception of needs and satisfaction.

According to theories of consumer behaviour, the decision of the consumer is defined by factors that form three categories of need recognition: (a) individual differences, (b) environmental influences and (c) psychological processes.

Consumers live in a complex environment. Their behaviour in the decision process is influenced by the following environmental influences: (1) culture, (2) social class, (3) personal influence, (4) family and (5) lifestyle.

This research has as a main objective the pinpointing of possibilities of improvement in the development of fashion industry products, aimed for the competitiveness of markets. It may relate the characteristics of clothes with the concepts of anatomical and behaviour adequacy to the perception of user satisfaction, supplying the clothing industry with recommendations about its capacity for product absorption and potential expansion.

This research aims to analyze similarities and differences between Brazilian and British consumer preferences through an in-depth consideration of both the markets and society of these two countries.

Investigative research is considering consumer preferences and the most effective approach for fashion designers to build a model to identify those preferences. In order to form a database of consumer opinion, a market research survey compiled of qualitative and quantitative questions may be used.

Finally, a analysis of consumer’s needs in fashion and clothing products must be carried out, not comparing products that are already in the market, but providing a significant possibility of creating new materials and shapes, based on tangible and intangible needs.

Keywords: Fashion; Design; Clothing; Consumer.
Teaching Methods as Social Practices: A Virtual Learning Environment Experience

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Abstract: This MSc dissertation is a pilot study for a PhD thesis, aiming to collect initial data and to highlight some discourses around teaching and learning online. It is methodologically situated in the field of Critical Discourse Analysis and presents a case-study of an Open University computer-mediated course. The aim is to show the various discourses that constitute the Teaching Discourse of the Open University, and how these discourses prompt the social practice of teaching and learning at the institution.

The analysis counted on three different sources of data: document analysis, interviews with course chair and tutor and online observations of the course conference. The triangulation of methods of data collection allowed the identification of these discourses into practice, under different perspectives.

Teaching methods are social practices. Therefore, teaching methods are not only about the most appropriate techniques to the teaching of a certain subject, but also about what is feasible and convenient for an educational institution to adopt as a practice. The teaching methods adopted by a given institution are defined within a particular time in history and under particular circumstances. At the Open University, the case-study in question, four discourses that regulate the discourse of teaching have been identified: the discourse of capitalism, the discourse of globalisation, the discourse of quality and the discourse of openness.

The Discourse of Teaching at the Open University, then, is constituted by the interdiscursive relation of these discourses. It encompasses the use of new technologies for teaching, aiming at providing teaching quality to students (quality discourse) and achieving further markets (globalisation). It also aims to attract students to the institution (capitalism discourse) and at the same time to offer them flexibility in the learning process (openness discourse).

Critical Discourse Analysis (CDA), the approach to data analysis, allowed the identification of this interdiscursive relation of discourses in the Teaching Discourse of the Open University. Thus, this study presents a reflection upon these discourses and highlights the importance of their awareness if a better understanding of the institutional practices is to be sought.

Keywords: Online Teaching; Online Learning; Discourses; Teaching Methods; Social Practices.
Choreographic Planning Environment: A Tool for Dance Creation

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Abstract: Processes for creating a dance today are multiple, personalized and frequently without an articulated set of procedures. In the educational environment, however, methods and procedures for choreography have to be clearly delineated and consistently defined. Dance and choreography have been traditionally, for a number of reasons, resistant areas to digital devices. Many concerns referring to possible loss of creative freedom, inadequacy of current software, and their high cost for acquisition and learning make digital tools support for dance rarely a serious option. Digital inclusion in Brazilian dance would depend mostly on integrating current and diverse choreographic processes, user-friendly interfaces and low cost. Current dance specific and general multimedia authoring programs offer some software-based solutions to support creative processes in the dance studio. However, there are questions related to the learning curve and to constraints of networked collaborations. This research explores the current standard technology as a way to deal with characteristics found in the educational and professional Brazilian environment and more specifically in the North-eastern region. In this sense, sophisticated equipments such as wearable devices or those for motion capture are initially excluded. A tool for the choreographic process to be operated there would be mainly software-based, running in standard computers which are mostly used for general purpose. Through familiar and easy to use interfaces, the student or choreographer would be able to search, organize and reorganize ideas for a dance interactively using image, sound, video, and handwriting to plan the choreographic design. This would contribute to the demystification of the creative process in dance. On the other hand, the option of sharing ideas through the Internet would be a stimulus to collective reasoning. The research involving those points is an ongoing project called Choreographic Planning Environment which, in near future, will be part of the resources available for students and professional choreographers.

Keywords: Creativity; Choreography; Computing; Interface; Dance.
Constructing the Musical Profession – An Ethnography Among Music Students in Higher Education

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(2) Institute of Education, University of London

Abstract: This ethnographic research examines relations between studying music and becoming a musician, among undergraduate Music students at Instituto Villa-Lobos, Universidade do Rio de Janeiro (UniRio), focussing on their perspectives on the musical activities they engage with – both in and beyond campus. “Music” is seen as the core interest in a field of social action, and the agents selected in the research are people who engage in study and work as concurrent modes of committing to music. Other people who participate in their network of relationships, such as university teachers, fellow students and fellow musicians in off-campus activities, play a secondary role in this ethnography. Assuming that it is possible to follow a number of pathways in becoming a professional musician, a key question to this study is: in the action and perspectives of these students, how does a university course in Music relate to the construction of musical careers?
The study aims at contributing to the understanding of interactions between music students, formal study and current musical practices, as it analyses aspects of technique, aesthetics and social organisation in various empirical contexts. It also seeks to constitute material that may be useful to future studies and discussions in the field of music education – especially those connected to higher education – and other fields of research in social action and music.

Keywords: Ethnography; Music Students; Musical Profession.
The Progression of Linguistic Knowledge Through Language Games: A Reflection About Games as Learning Tools in the EFL Classroom

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(2) Lancaster University, UK

Abstract: This poster aims at presenting some results of the research I have been developing as a PHD student in Brazil and as a visiting researcher at Lancaster University, UK. Having as its main purpose to accomplish an in depth discussion about the use of games as teaching-learning tools in the EFL (English as a Foreign Language) classroom, my research is oriented by two main goals:
1. Investigate the progression of language games as well as their role in the process of knowledge construction in three different learning stages of the foreign language, which represent the first, second and fourth year of exposure to the target language.
2. Promote the teacher’s reflection about his/her own practice in the EFL classroom in what concerns the use of language games through the observation of his/her teaching, the construction of a theoretical framework and the dialogue with the researcher in reflective sessions taken place after the video recording of the teacher’s class.

The set of data for this research was collected in a Language School in Brazil and consists of seven videotaped games, written assessment forms answered by students after the videotaping of each game, three recorded interviews with the teachers and four dialogical reflective sessions from which two teachers and the researcher participated.

The theoretical framework that gives support to the discussion concerning the use of games in the EFL classroom is mainly based on the studies of Vygostky (1930), Leontiev (1934), Elkonin (1978) Huizinga (1944), Caillois (1955), Cook (2000), Bruner (1975), Lier (1985) and Rojo (1999, forthcoming). In what concerns the reflective process and the role played by the researcher in the construction of this process, I have been seeking theoretical support basically in the conceptions of Bakhtin (1929, 1953, 1975), Coulter (1999), Fullan (1996) and Freire (1992).

Besides providing essential information concerning the research questions, the context and the theoretical framework, this poster intends to focus on some analysis results about the construction of knowledge in the games collected, which is currently being developed at Lancaster University.

Keywords: Rain; Urban Environment.
On Places and Deposits – Worship Practice in the Transition Late Bronze Age-Early Iron Age in Central-Western Europe

Adriene Baron Tacla (1)
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Abstract: The term ‘deposit’ is widely used to classify a variety of objects put down in a same location. They can be observed either as isolated/single finds or as part of multiple sets in ‘natural’ contexts such as watercourses and springs, marshes, mountains, caves, plains, forests and groves. In those hoards and single finds observed at the areas in study (Bourges/France, Vix/France, Châtillon-sur-Glâne/Switzerland and Eberdingen-Hochdorf/Germany), one notices a pattern guiding the selection of objects deposited. These are metal objects, which mainly fall into two categories of artefacts: weapons and ornaments.

Traditionally, they are used to support two arguments of organization of landscape. Many scholars have interpreted the widespread occurrence of deposits according to the dichotomy ‘sacred’ versus ‘profane’, so that it structures not only social practice, but also the known-world, establishing a division of places in the landscape. In this sense, objects deposited in watery contexts represent a ‘holy’ realm whilst the dry ones characterise a ‘secular’ dimension.

On the other hand, it has largely been suggested that the general distribution of such deposits points to a level of integration between different areas of Europe in Antiquity. The hypothesis of long-distance exchange routes takes into account the typology of deposit-finds as well as the quotation by classical authors on Mediterranean trade. In a rather deterministic way, these references to ancient waterways have been used as the natural explanation for the creation and distribution of settlements throughout the landscape.

Was the creation of ritual centres and settlements during the first millennium BC merely guided by economical interests and demands? What did underlie the selection of these places? My aim is to pursue the quest of meanings in the landscape and their relationship to sacred beliefs for the appropriation of such landscapes is rooted in ritual and religious practice.

This poster presentation is linked to my PhD thesis, which has been developed at the Institute of Archaeology, University of Oxford, with the support of CNPq.

Keywords: Iron Age Europe; Sacred Places; Votive Offerings; Landscape Archaeology.
An Intelligent Classroom: A New Approach for a Learning Environment and its Impacts on Pupils’ Behaviour

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(1) University of Reading

Abstract: The UK Government recognizes the need for an improved understanding and changes to improve the classroom environment and facilities in order to increase learning acquisition. As an outcome of these new ideas, proposals are being developed and implemented through the “Classrooms of the Future” project. Testing and feedback of this will enable lessons to be learnt for the “Schools of the Future” concept.

The current study focuses upon innovations and new technology-based classrooms (referred to here as intelligent classrooms). Research already indicates that students are willing to accept information and communication technologies (ICT) in the classroom environment. One study has used behavioural mapping to analyze the effect of the classroom environment on the practice of teachers. The focus of this research is to study if these new intelligent classrooms will affect the behaviour of pupils in these new learning environments.

Behavioral mapping is being used to observe, monitor of the classroom environment and analyze usage. Two new classrooms designed by INTEGER (Intelligent and Green) in two different UK schools provided the case studies to determine whether intelligent buildings (learning environments) can enhance learning experiences.

Tools have been developed to collect information and data. It includes interviews with students and teachers, class observation and images recording (pictures and video) of the new spaces. Some feedback has already been provided regarding the use of the classroom. It was possible to get a “sense of belonging” mainly from the kids who were involved in the design process somehow. It was also possible to notice that interactions seem to be not diminished by the use of the new technology in place, which is positive for the study and for the new classroom concept.

Keywords: Classroom Environment; Intelligent Buildings; Behaviour; School.
Imagism and the Configuration of a Literary Northeast in Gilberto Freyre and João Cabral de Melo Neto's Works

Silvana Moreli Vicente (1)
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Abstract: A study of the intellectual trajectory of both Brazilian writers Gilberto Freyre (1900-1987) and João Cabral de Melo Neto (1920-1999) reveals the remarkably effect of Modern American and English vanguard poetry on their thinking and writing. Freyre and Melo Neto had early contact with American and English Literature. As careful readers of Imagist authors, they were able to promote back in Brazil the main aims of that movement through vigorous intellectual debate. These included the use of concrete language, the avoidance of romantic themes, the freedom to choose any subject, and the representation of precise, clear images. The main argument of this work concerns the originality with which both writers made use of Imagist-derived principles in order to produce innovative works which helped to shape and expand in significant ways the literary portrayal of the Brazilian Northeast, initially associated with the regionalist novel of the 1930s. Amongst the most relevant of Freyre's works for this discussion are Casa-Grande e Senzala (The Master and the Slaves), Sobrados e Mocambos (The Mansions and the Shanties), Ordem e Progresso (Order and Progress), and Poesia Reunida (Collected Poetry). Amongst the most relevant of Melo Neto’s work are O Cão Sem Plumas (The dog beneath the skin), Morte e Vida Severina (The Death and Life of Severino), and A Educação pela Pedra (The Education through Stone). We are going to see that both writers are influenced by the innovative literary solutions of Imagism, but they articulate and recreate them, with remarkable originality, in different ways in the Tropics.

Keywords: João Cabral de Melo Neto; Gilberto Freyre; Imagism; Literary Image of the Brazilian Northeast.
HUMANITIES II

Includes:

Business
Economy
Geography
Law
Sociology
Urban Studies
An Investigation of the Labour Market Earnings in Poor Areas: Evaluating the Sources of Wage Inequality in the Slums of Rio de Janeiro

João Pedro Wagner de Azevedo (1)
(1) University of Newcastle

Abstract: It is known that although in most developing countries the incidence of poverty is higher in the rural areas, the population in those countries is urbanizing quite rapidly. Moreover, in some regions of the planet, such as Latin America, the urbanization of poverty is already a fact. Although poverty rates are higher in rural areas than in urban areas in the region (55% vs. 39%), in absolute terms there are more than twice as many urban poor than rural poor - 68 million rural poor compared with 138 million urban poor. Most of the times, the urban poor is only able to afford housing in areas characterized by precarious public health, a lack of basic infrastructure (including water delivery), inadequate public services, substandard sanitation, and widespread violence and insecurity, such areas are also referred as slums. According to a new report from the United Nations Human Settlements Program, "The Challenge of Slums: Global Report on Human Settlements 2003", at least 1 billion people worldwide currently live in urban slums. Within 30 years, if current trends continue, one out of every three people on the planet will live in such conditions.

It is clear then, that urban poverty and the dynamics of the slums have a substantial importance on the development debate.

This paper presents empirical evidence on the determinants for labour market earnings and inequality for males and females in the slums of Rio de Janeiro. This paper exploits a unique data set of 21,704 household from 51 different slums from the city of Rio de Janeiro. This data set has been augmented with contextual information from the 2000 census as well as geographical information on the boundaries of on each of these communities. We estimate earnings equations based on the measurement framework of Mincer (1974), as well occupational bias adjusted earnings following Lee (1984) and Bourguignon et al (2001), and compare them with findings of other developing countries. We present tests of the segmentation hypothesis, including several of the dual labour market hypothesis.

Keywords: Urban Poverty; Occupational Choice; Earnings; Inequality.
Credit and Entrepreneurship in the Slums of Rio de Janeiro

João Pedro Wagner de Azevedo (1)
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Abstract: The role of traditional financial institutions on the development of poor microentrepreneurs has only recently started to be addressed by the economic literature. This paper sheds light on this issue through an empirical study on the importance of traditional financial institutions on the performance of 4,500 entrepreneurs from the slums of Rio de Janeiro. Using unique data from the census of microenterprises of 51 slums in Rio de Janeiro, this essay analyzes the relationship of the poor entrepreneurs with the traditional financial system and the role of credit on their labor status mobility, as well as on their business profitability. The work shows that although the traditional financial institutions do not offer tailored services and products to the microentrepreneurs from the poor communities of Rio de Janeiro, it still represents the main source of credit (70%) for those who take-up this product. This work uses a multivariate Logit model to estimate the relevance of the credit supplied by these institutions, on labors status mobility, controlling for several other factors. The credit coefficient was statistically significant and robust, and showed that self-employed entrepreneurs that took credit in the past 12 months were at least 1.5 more likely to became an employer, than those that did not take credit. The analysis of the role of credit on the profitability of these business establishments suggested that credit had a positive and statistically significant impact on the financial performance of these entrepreneurs, with a positive and statistically significant average treatment effect.

Keywords: Occupational Choice and Mobility; Professional Labour Markets.
The Perception and Management of Subsistence Risk Amongst the Potiguara: An Analysis of Economic Life and Environment Management in an Indigenous Village of Northeast Brazil

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Abstract: The Potiguara are an indigenous group living on the Atlantic coast of Brazil, which Portuguese colonists first encountered in the sixteenth century. The Potiguara economy is based essentially on small-scale agriculture, primarily oriented towards subsistence. In recent years, the process of integration into the market economy has accelerated changes, with various implications for social and political organisation and for the environment.

This paper addresses how contemporary Potiguara manage their environment, in particular how local practices and institutions seek to cope with subsistence risk. It is already well-established that risk avoidance is at the core of agriculturalists’ concerns. Among the Potiguara, risk is one of the main elements in the decisions related to agricultural production. Therefore, understanding local concepts of risk and its management is paramount to the understanding of economic behaviour and environmental practices.

The Potiguara territory was a privileged site to carry out this research, since land - usually amongst the most significant limiting variables in an agricultural way of life - is extensively available to the people that live in the territory, and therefore can be ruled out as a determinant of the difference between people’s economic standing and the strategies they pursue. This was relevant to understanding the importance of other factors limiting agricultural production and shaping the interactions with the environment.

Keywords: Agriculture; Subsistence Risk; Environmental Management.
To Whom are Patents Important? Evidence from UK Manufacturing

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Abstract: This study investigates the determinants of the importance of patents as a protective mechanism in UK manufacturing industry. Particular issues to be addressed are i) the extent that the importance of patents varies across industrial sectors and firms’ size, ii) whether innovativeness and competitiveness impact on a firm’s perceived importance of patents, iii) whether innovation co-operation and government support affect the importance of patents for the firms engaged in those activities, and iv) how the importance of other mechanisms of appropriability may impact on the importance of patents. The motivation for this piece of research is that although there have been many attempts to empirically investigate firms’ propensities to patent, such studies by concentrating upon patents applied for or issued may not be particularly informative and may overestimate how important is the fundamental attribute of patents, that is stopping others from copying. It is therefore both of importance and of interest to explore the basic role itself rather than the level of patenting activity. Our analysis derives from responses of firms to questions in the third UK Community Innovation Survey, which was administered in 2001 and relates to innovative activities of UK firms over the period 1998-2000. The estimations were carried out using ordered logit models, the dependent variable being ordered and non-continuous. Overall, our findings for UK manufacturing are that i) the importance of patents varies across industrial sectors and by firm size, ii) a perceived high importance of patents is associated with the degree of innovativeness, iii) competition is to a certain extent conducive to a greater importance for patents, iv) innovation collaborations and government support may increase the importance of patents depending on the agents engaged in these activities, and v) the importance of patents is heavily dependent on firms’ own appropriation strategies. We conclude that our results to a large degree although not totally match previous studies of this kind, suggesting that despite the multi-faceted role played by patents the main objective of those who take out patents in UK manufacturing is to exercise property rights over their inventions. This also suggests that contrary to our suspicions patent numbers may be a good proxy for evaluating the importance of patents as a mechanism of protection. We do find however that patents may not be a substitute but rather a complement to other protective devices and this is new.

Keywords: Patents; Manufacturing, UK.
Economic Aspects of Fire Use and Prevention: A Household Model for the Brazilian Amazon

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(2) Universidade Federal do Pará (UFPA) – Lecturer at Economics Dept., Brazil
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Abstract: Man-made forest ground fires are a crucial cause of the destruction of Brazilian Amazonian forests. Although much has been written about Amazonian deforestation, understanding of the economics of forests ground fires remains rudimentary. This study focuses on human activity in the Brazilian Amazon as the main source of fire ignition. More specifically, it is our intention to present a household behaviour model that assesses their decisions linked to the use and/or prevention of fire. Agriculture and extensive cattle ranching are the activities to be assessed in order to reveal the rationale that lies at the roots of Amazonian household behaviour with respect to fire. Empirical data will be used to identify and understand: a) The economic causes of household’s decisions to use fire as a management tool; b) The costs & benefits of fire prevention activities; c) Practical changes in terms of public policies for the region. Our hypothesis is that land users’ propensity to set fires decreases, while their investment in fire prevention increases, as agriculture becomes more intensive and permanent. This will be tested in an econometric model based on theoretical framework of household behaviour modelling and portfolio management decision. Primary data was collected through a household survey in two different sites in the Amazon region: Santarém (PA) and Guanará do Norte (MT), which were chosen for their strong representativeness of the frontier occupation process and recent dynamics of rural production in the region as well as important specificities in terms of household composition. Our main goal is to obtain a diagnosis of the level of investment made in rural properties and the history of fire occurrence in order to contribute to the debate over the economic and environmental aspects of Amazonian development.

Keywords: Environmental Economics; Land-use; Fire-use; Amazonian Development; Sustainability.
On the Transmission Mechanism of Monetary Constraints to the Real Side of the Economy: The Brazilian Case

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Abstract: Contrary to the predictions of international finance theory, inflows of capital triggered by financial liberalisation have neither equalised real interest rates nor increased income growth in Brazil. How to explain this puzzle? We show that a perverse combination of income elasticities of demand for imports and exports is able to generate low income growth rates and high real interest rates in a model that combines mainstream and unorthodox features. As domestic income grows and imports rise faster than exports, the real exchange rate is expected to depreciate in order to clear the Balance of Payments (or the foreign exchange rate market). An incipient capital outflow arises and interest rates increase. Faster adjustment in capital rather than goods’ market therefore generates a high real interest rate differential between Brazil and the rest of the world. Another possible interpretation for the model is that the Brazilian Central Bank fixes interest rates on a high level when there is exchange rate depreciation because it fears soaring inflation of the pass-through from exchange rates to prices.

Keywords: Real Interest Rate Parity; Balance of Payments; Exchange Rates.
Virtual City Strategies: Understanding the Development of Urban-Technology Policy Making

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Abstract: The last decade or so has witnessed a frenzy of city-makers and local authorities struggling to comprehend policies involving the technological development of cities around the world. These policies have been characterised by initiatives predominantly related to the use of Information and Communication Technologies (ICTs).

This research draws on the idea that these strategies in their entirety, together with other influential factors – such as infrastructure, physical spaces where the new technologies can be accessed, the structure of virtual spaces (websites on the Internet, intranets, etc.), civic (public) and commercial (private) motives, as well as the actors-network involved with these elements – form the basis for the sociotechnical construction of what is being called virtual city.

Virtual cities, in turn, represent the current historical phase of urban development, considering the integration and interaction of the new elements of the network society with elements from other periods of urban history, all interwoven in the same city.

The development of virtual cities depends, nevertheless, on a series of economic, political, social, cultural and spatial aspects influenced by specific local conditions.

The aim of this research is to provide means for the identification of some dilemmas presented by strategies for the technological development of two distinct realities in Europe: Antwerp in Belgium and Newcastle upon Tyne in the UK. The developments in Europe are particular important due to its parallel struggle for economic, social, cultural and spatial ‘unification’.

The methodology aimed at the comparison between these two cases by focusing on their distinct ways of integrating traditional urban and ICTs policy-making. This study is based on a three-fold theoretical framework involving the theories of social construction of technologies (SCOT), a comprehensive typology for virtual cities, and the concepts of recombinant architecture.

The findings of these two case studies point to complex endogenous and exogenous barriers as well as blurring relations between cities and ICTs as the most influential dilemmas presented to local authorities on the integration of urban and ICTs policy-making.

The phenomenon of ‘interpretive flexibility’ (part of the concepts related to SCOT) was found to have a particular relevance in this process. The inability of local authorities to deal with inevitable divergent interpretations for the same local virtual city strategy led to unsuccessful projects in terms of integration between urban issues and ICTs.

A series of policy and planning recommendations supported by the identification of the above-mentioned dilemmas completes this study.

Keywords: Urban-Technology; Virtual Cities; Urban and Regional Planning; Social Construction of Technologies; Recombinant Planning.
How to Turn a Theoretical Planning into a Successful Competitive Advantage, and into a Profitable Business

André Flores (1)
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Abstract: Marketing and Management Strategy: How to turn a theoretical planning into a successful competitive advantage, and into a profitable business.
A case study of a Japanese car manufacturing - Nissan Motor Company, LTD and “Nissan do Brazil”.
I have decided on this topic for two different reasons: Firstly, because of my passion for the dynamics of the automobile industry. The second reason lays in the vital importance of Strategic and Marketing Planning thinking for organizations trading on an extremely competitive global market.
The methodology aimed at the analysis of this case by focusing on its distinct and successful way of taking a near-fatally wounded automaker from the ruins back to profitability. This study will be based on strategic and marketing planning involving the theories of turnaround, join-venture, alliance and competitive strategies.
Furthermore, some characteristics of the automobile market will be analysed, such as: how customers chose their cars, how manufacturing car companies chose new models, what are the automobile market future tendencies, and how well prepared, in terms of differentiation, are companies to face the standardization of the cars shape.
The two main objectives of this project are to interpret how the theoretical strategy forces act on an empirical example and point out the characteristics and differences from the case study.

Why Nissan?
Nissan Motor Company was selected because of the success of its completely restructured 3-year business plan, called “Nissan Revival Plan” (NRP), which was launched in 1999. The main objective of Nissan challenging plan was related to streamline its business - closing plants, reducing headcounts, shrinking and transforming suppliers and eliminating non-core assets.
Also, I will be studying the new Strategy Planning, which is part of the Revival Plan, called “NISSAN 180”. Nissan’s new business plan is, equally, a three-year plan that has been implemented since 2002. This latest strategy has a new and not least arduous purpose. It is focused on increasing its market share, by the creation of attractive products, the establishment of a sustainable and profitable growth, and the provision of a top level return on investments to Nissan’s shareholders.

Why “Nissan do Brasil”? 
Brazil was chosen by Nissan’s head office to be the strategic base for the Mercosur (Latin America Free Trade Agreement). This decision was reinforced in 1999 by the alliance with Renault, which gave support for Nissan to consolidate its expansionist strategy.
In December 2001 Nissan and Renault Alliance set its first manufacturing plant in the city of Sao Jose dos Pinhais, in the state of Parana.

Keywords: Automobile Industry, NISSAN, “Turnaround”, “Joint-venture”, “Alliance”.
Abstract: The innovative aspiration of this research is to apply Sen’s work in the context of urban poverty, a connection not so far made in the research literature on this sector. By the end of the 1990s the World Bank recognised that their current upgrading policies were not alleviating poverty. Consequently they redefined their concept of poverty moving away from based on the writings of Nobel Prize winner Amartya Sen (1999), who believes “poverty must be seen as the deprivation of basic capabilities rather than merely as lowness of incomes” (1999:87). This more elaborate way of conceiving poverty may help to reconfigure policies and thus accomplish increased poverty alleviation. However, meanwhile the World Bank’s urban policies have become ambiguous and contradictory. Market enablement strategies are still been practiced which conceptually seems to be in disagreement with Sen’s approach.

Therefore this study seeks to assess how this change in the conceptualization of poverty has affected the World Bank’s squatter settlement upgrading strategies. My study hopes to fill the gap in the existing literature by relating Sen’s concept to the urban sector and thus to elaborate the current relationship between squatter settlement upgrading and poverty alleviation. This research seeks to assess the extent to which the World Bank has adopted Sen’s recommendations and redirected its squatter upgrading policies as it claims. Or has it been selective in taking new indicators that will support its preconceived ideology?

In order to assess if there has been a practical change in the direction of the World Bank’s squatter upgrading strategy, I propose to evaluate a classic World Bank squatter upgrading project: the Novos Alagados project from Salvador, Brazil. Furthermore, a comparison with another squatter settlement in the same city, named Calabar, where improvements took place through organized community involvement, aims at unfolding the key practical and theoretical issues of the conceptualization and alleviation of poverty. Using a comparative approach this thesis seeks to evaluate which of these settlements has been more successfully alleviating poverty in accordance with Sen’s definition. Housing policy and settlement upgrading has a long and complex history in Brazil. This research will review the changes on Brazilian urban development strategies as a result of the changes on international donors’ concepts of poverty, thus to understand the contradictions between the current definition of poverty and urban policies. Finally, this evaluation of the impacts of the upgrading project at Novos Alagados through the Capability approach aims at generating a better understanding of the relationship between poverty alleviation and squatter upgrading projects.

Keyword: Sen; Poverty Alleviation; Upgrading; Brazil.
Laws of Deliberation: Contribution to the Discourse of a Democracy to come

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Abstract: In the context of a political theory of law – one that does not condone the oblivion of the question of grounds, and consequentially, the contours of the immanent crises within legal theory and institutions – a non-traditional discourse on the relationship between law and democracy can be identified. The work of Jacques Derrida, namely as it postulates a democracy to come, puts forward such a discourse, or grammar. The French author traced back his demarche to prominent former hypercritical authors: Benjamin, Marx and Rousseau. This paper provides a further development of this evolving discourse. Inspired by an apparently unimportant reference in Spectres of Marx, it redescribes current legal-political models of legitimacy through the perspective of deconstruction, focusing primal attention to the concept of deliberation, its past, its margins, and its economy in practice – the eve of judiciary decisions, the hesitation of Parliament, and so forth. From its ancient genesis, on the one hand, the concept is made congruent with an appeal to community (and a community of law), and to a differential kind of politics, disturbed by the radical otherness. From its performative effects, on the other hand, the thought of de-liberation articulates the most recent accounts of the idea of freedom with the most terrifying and entralling political community of today: the rogue state (l’état voyous) which is fundamentally (as dangerously popular and untamed) an ally of a democracy to come.

Keywords: Democracy; Deliberation; Legal-political Legitimacy; Derrida.
On the Discursive Construction of Race in a Small Corpus of Brazilian Newspaper Reports: A Comparative Study Based on Critical Discourse Analysis and Corpus Linguistics

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Abstract: Research on race issues in Brazil traditionally stems from social sciences and comparative literature, which do not usually take on board analysis based on empirical data (Sodré, 1999; d’Adesky, 2001; Carone & Bento, 2002; Magalhães, 2003; Nascimento, 2003). Within CDA, Van Dijk’s work draws on cognitive/textual categories for the analysis of genres associated to media discourse and Wodak’s work on cognitive categories as well as race theories for the analysis of racist discourses in the press (van Dijk, 1987, 1993; Wodak, 2001). Within the field of cognitive psychology Potter & Wetherell’s research on racism includes issues of social structure, power relations and ideology (Potter & Wetherell, 1992). In the field of corpus and text analysis there is investigation of the cultural meanings of collocations around keywords such as racial, ethnic, tribal. across texts and corpora (Khrisnamurthy, 1996; Stubbs, 1996, 2001). The present ongoing research work takes on board Brazilian theoretical concepts of race and racism in academic texts in the field of social sciences, as well as a combined methodology of CDA and corpus and text analysis in order to investigate the discursive constructions of race and racism in a small corpus of Brazilian newspaper articles. This corpus has been compiled with articles from Folha de São Paulo, a Brazilian quality newspaper, from January to July 2003, with a total of 25,417 words. The research methodology is threefold: a corpus analysis (Stubbs, 2001) of collocates around the nodes raça, racial, racismo, etnia, étnico(a), branco(a)(s), negro(a)(s), preto(a)(s); intertextual analysis as proposed by CDA, taking into account hybridity of genres, discourses and styles as well as categories such as suppression and cohesion in the genre under scrutiny, and an comparative analysis of the meaning of these keywords in current Brazilian dictionaries. The aim of the research is to answer the following research questions: is the discursive construction of race in academic texts different from the one in the corpus of newspaper texts? What is the role of cohesion in the reproduction or change of discursive constructions of race in this corpus? Which social actors are being suppressed?

Keywords: Corpus and Text Analysis; Racist Discourse; Newspaper Reports; Critical Discourse Analysis.
Abstract: San Sebastian of Rio de Janeiro City, July 3, 1892. In this typical carioca winter’s Sunday were inaugurated many entertainments sponsored by the Zoological garden’s owner, Sir João Batista de Viana Drummond, the baron of Drummond. The park was placed in the “pitoresco bairro de Vila Isabel”, close to the Engenho Novo mountains. Due to the particular occasion, the bonds companies set up special wagons to carry the authorities and the common people in front of the Zoo. Trespassing the Zoological garden’s gates, the visitor received a ticket. In this ticket was printed a picture representing an animal. Fixed to a post about 3 meters high, next to the park’s entrance, there was a wooden box. Inside that box had been hidden one of those pictures, chosen by the baron himself within a list of 25, including for instance the ostrich, the cow, the butterfly and the crocodile. That Sunday, at 5 PM, the box was opened for the first time and everyone finally discovered the mysterious animal and the identity of the winners of the 20$000 reward, valuing about 20 times the ticket price. Once it had regained its freedom, the ostrich made 23 lucky visitors happy… Anyway, three years after its creation, “o jogo dos bichos” already was forbidden by the law, and it managed to survive as an illegal lottery. At this time the animals could count on enough autonomy to keep on living outside the Baron’s garden walls. That’s because betting on the different animals had become a town habit and it was possible to buy poules/tickets in other places in the capital of the Brazilian Republic, different from the Zoo. So, shops owned by the Baron, book-makers agencies, dry goods stores and street peddlers, for instance, offered to the people the chance to win money with this game. Neither illegality, nor the creation of a specific law included in the Lei de Contraveções Penais (1941) in order to punish its practice, could stop the animal betting. In this way, o jogo do bicho reached the middle of the XX century looking like an organized business, with functions and a well defined hierarchy... and persecuted by the police. The aim of this paper is to reflect on the experiences provided by the bicheiros (people working in this lottery) from the Rio de Janeiro street corners, selling luck or bad chance to the players, running from the police and trying to create different ways to survive in a society which purpose was their arrest, the same destiny accorded to the baron’s animals. For that, I intend to use as my main sources some interviews to the bicheiros, criminal trials, police reports and local press.

Keywords: Jogo do Bicho; Rio de Janeiro; Memories; Gambling; Law.

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5 Jornal do Brasil, p. 5, ed. de 04 de julho de 1892.
Globalisation: Evil or Good?

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Abstract: “The World is in a rush, and it is getting close to its end”, said the Archbishop Wulfstan, in a sermon in York, in the year 1014. (Guiddens, 1999:1) Although the words of the Archbishop was mentioned about a thousand years ago, it seems that they are still vivid in our modern society. There is no doubt that the Archbishop would never ever imagined that ten centuries later his words would be mentioned by a sociologist, a professional that only appeared in our society in the last century, to describe a historical period of our modern society. The fact that this world is in a process of changing is a reality; however, it seems that this process has been developing in a very quick process and these changes have altered the relations and connections between peoples and communities- a process, which has been designed by the term ‘globalisation’ (Held, 2000:2).

According to Giddens (1999: 6 and 7), we live in a world of transformations, affecting almost every aspect of what we do. For better or worse, we are being propelled into a global order (globalisation) that no one fully understands, but which is making its affects felt upon all of us. Globalisation is a very complex phenomenon, it is affecting every dimension of human’s life; either one likes it or not, one has to embrace it and makes it part of his or her daily life. From the author’s point of view, globalisation is a process that is narrowing down the distances between economic, political, social, technological, legal and environment in the worldwide society, affecting each individual’s life in this world. Some scholars have been arguing that globalisation is creating a world of winners and losers, few on the fast track to prosperity, and majority condemned to a life of misery and despair. Rather than a “global village”, it seems that the world is becoming more like to a “global pillage” (Held, 2000:12). The question to ask ourselves is: Which side are we? The winners or losers? From the author’ point of view; the answer depends very much where one is situated in our global society! Perhaps the best way to analysing both positive and negative sides of globalisation, is applying the words from someone who attended First Social World Forum, Porto Alegre, Brazil in January 2002: “We are here to show the world that another world is possible!” (Klein, 2002:193).

The unstoppable process will continue, but the daily results depend on those who are ruling the system.

Keywords: Globalisation; Winners; Losers.

Analysis and Design of Organizational Systems: Towards a Unified Theory

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Abstract: This thesis is about organizations, technology and the environment. Firstly, it advocates that organizations are ready for unified theories and thus it proposes a unified theory of organizational systems. Secondly, it focuses on the general picture of organizations and technologies pursuing the capabilities of high degrees of cognition, intelligence and autonomy in order to deal with complexities which come from the environment. It advocates that the pursuit of these capabilities by organizations is a necessary feature not only for their survival and development, but also for the achievement of more complex goals. Thirdly, it supports the assertion that certain machines today (named cognitive machines) are coming to play an increasing role in organizations as decision-makers and problem-solvers. Such machines are emerging to participate and to act instead of people in the name of organizations. Therefore, this thesis analyses the implications of these new participants for the elements of the organization (such as its social structure, goals, technology and people) and also for the environment. Fourth, it explores the analysis and design of machines which are able to carry out complex cognitive tasks in organizations. It contributes by presenting the design of a framework of computational machines which resemble humans in the cognitive processes of representing and organizing knowledge, computing perceptions, decision-making and problem-solving. Moreover, this thesis puts such a framework into the context of economic decision-making; it shows that machines derived from this framework can be used to simulate bounded rationality; it also demonstrates that such machines can be used to reduce or to solve intra-individual and group conflicts which arise from decision-making processes in organizations. Fifth, it provides quantitative and qualitative analyses on the economic, political and social implications of organizations for the environment. Such analyses provide the thesis with evidence and thus they indicate the alignment of explanations and predictions of results with practical outcomes, i.e. with real data from the market.

Keywords: Organizations; Technology; Environment; General Systems Theory; Cognitive Science and Artificial Intelligence; Complexity; Autonomy.
Competitive Advantage and Price Reactions to Low Cost Carrier Entry in the Brazilian Airline Industry

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Abstract: Competition between rapidly expanding low cost carriers (LCC) and traditional network full-service carriers (FSC) has recently become one of the most significant issues regarding the airline industry. Although the segment of the formers is basically a phenomenon of fully or partially liberalised markets - and thus dates back to the US deregulation process of the 1970s -, it was only recently, however, that it started to be recognized as a relevant and distinct business strategy and profitable market niche. Following the successful paradigm of the pioneer Southwest Airlines, in the United States, airlines such as Ryanair and EasyJet, in Europe, flourished in the market, and soon the concept has spread worldwide (examples being Air Asia, Virgin Blue, Air Arabia, etc). Moreover, this segment is expected to expand considerably within the next years, and this has undoubtedly been forcing legacy carriers to respond progressively – a movement that is shaping the frontiers of competition in the industry.

This paper aims at addressing this matter by empirically investigating price reactions to the entry of LCC Gol in the Brazilian domestic market. Firstly, a study of localized competitive advantage regarding the determinants of pricing power is performed (intra-route model) as a precondition for the subsequent analysis of the pattern of reactions to entry by legacy carriers (inter-routes model). The later is designed aiming at explaining variation between entered and non-entered markets. Both models are estimated with fixed effects panel data. Results indicate that (i) Gol’s entry was not restricted to short haul flights, suggesting that she could not fit into the classical Southwest Airlines paradigm, and also that the degree of the newcomer’s product differentiation is a relevant feature; (ii) market structure at the route and airport levels are relevant at explaining pricing behaviour. We then compare our results with the findings of Evans and Kessides (1993), which rejected market share effects at the route level, and conclude that our analysis better suits airline markets at a very recent and/or immature stage of economic liberalisation.

Here we provide crucial departures from previous literature on LCCs. Firstly, by performing a previous analysis of the sources of the incumbent's competitive advantage in terms of pricing power. Secondly, with both elements of product differentiation and entry barriers. Finally, with airport-specific effects control in the inter-routes modelling, and thus being in a position of accounting for the researcher's unobservables that could affect incumbent's pricing behaviour across routes.

Keywords: Industrial Organisation; Competition; Low Cost Airline.
An Assessment of the Impacts of Liberalisation in a Brazilian Air-Shuttle Market

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Abstract: This paper aims to assess the impact of recent economic liberalization on a relevant market of the Brazilian airline industry: the "Ponte Aérea", a pioneer air shuttle service, created in 1959 by an agreement of airline managers, and which dominated the route linking the city centres of Rio de Janeiro and São Paulo for almost forty years. The competition model presented here was developed to represent the rivalry and strategic interdependence in a shuttle market scheme with heterogeneous opponents, some of them within code-share agreements. Heterogeneity is mainly due to different schedule delay by each airline. Firms are assumed to play a static oligopoly game in which price is the strategic choice variable. As route-level costs are non-observable by the econometrician, the approximation of Brander and Zhang (1990) is then performed in parallel with the estimation of first-order conditions for firm' profit maximization, which permitted inferring pertinent cost side information from data.

In order to estimate the impacts of liberalization on the air shuttle market, an analysis of changes in the competitive conduct and in the degree of product heterogeneity. Firstly, it makes use of the conduct parameter approach in a Bertrand setting - as in the study of the European airline industry of Captain and Sickles, 1997 -, in order to infer the extent of deviation from Nash equilibrium, and the behaviour of airlines during the process of regulatory reform. In conjunction with conduct analysis, it also investigates a potential rupture in the degree of product differentiation due to post-deregulation tactics of demand segmentation and introduction of frequent flyer programs - by using the index of heterogeneity suggested by Singh and Vives (1984).

Keywords: Industrial Organisation; Competition; Air-Shuttle.
Willingness to Pay for Mortality Risk Reduction Related with Air Pollution in Sao Paulo, Brazil

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Abstract: Air pollution is one of the most serious environmental health risks in Brazil, in particular among big cities like Sao Paulo. Respiratory and cardiovascular diseases restrict the population’s activities and increase the probability of death. Several studies have reported significant associations between urban concentrations of air pollution in Sao Paulo and all-cause mortality, cardiovascular mortality, and respiratory mortality, plus deaths due to more specific causes such as pneumonia and chronic obstructive pulmonary disease. A governmental intervention is required to implement policies that aim to increase air quality, and cost-benefit analysis can be an interesting tool to evaluate the environmental legislation. The monetary evaluation of the health effects is an essential input to the cost-benefit analysis of any policy implementation, since these health effects seem to correspond to the major component of the benefits of policies to improve air quality. Reductions in risk of death are widely believed to be the most important benefit underlying many environmental programmes, including those concerned to reduce air pollution. Thus, when undertaking a cost-benefit analysis of environmental programmes that reduce air pollution, economists must estimate the benefit of reducing risks of death. This study aims to estimate the population’s willingness to pay to reduce risks of death and, consequently, the value of a statistical life (VSL) in Sao Paulo, Brazil. It was used a methodology developed and tested in several countries (USA, Japan, Canada, England, France and Italy), involving a contingent valuation survey conducted on computers. This survey instrument was adapted to the Brazilian specific characteristics and used to elicit the willingness-to-pay measure related to reductions in risk of death in Brazil. This paper provides details of the survey assumptions and elicitation instrument; a descriptive analysis of the obtained sample; and the (parametric and non-parametric) willingness-to-pay estimates for different risk reductions.

Keywords: Air Pollution; Risks; Willingness to Pay; Contingent Valuation.
Scientific Knowledge and Politics: The Role of the Polytechnic School in the Modernisation of São Paulo

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Abstract: During the first thirty years of twentieth century the city of São Paulo has undergone a radical process of modernisation. The application of new technologies and the construction of a complex infrastructure transformed a small village into a modern city in a short space of ten years. The disputes between different political groups in issues concerning modernisation were usually resolved by consulting scientists and engineers who were the responsible for giving the final word to approve or disapprove the application of modernising policies. For that reason the Polytechnic School, the most important scientific institution of the state of São Paulo, was the main centre of discussion to the development of patterns that will be followed by other small cities in the state. This political role was given to the Polytechnic School and its professors who were responsible for deciding how the city should be governed. Since its foundation in 1893 the Polytechnic School was the centre of the scientific research in the state of São Paulo. Originally the school was formed as a centre to provide skilled workers to work on the railways and in several different technical areas. However, with the development of the city, the arrival of foreign companies to run the electrical grid, water system and other key facilities, the Polytechnic School became an important political institution. Some of the decisions reached by its professors and engineers led to the approval of several controversial projects in the city. This was largely due to conditions set by scientists, engineers and their institutions that give them the power to influence political decisions concerning the future of the city of São Paulo. Thus, the support of the Polytechnic School was crucial to achieve the modernising goals proposed by the PRP (Republican Party of São Paulo) and to guarantee the hegemony of their policies.

Keywords: Science; Politics; Urbanization; Modernization.
Exploring Systems Thinking to Address Sustainability

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Abstract: In the last 30 years environmental degradation and economic crisis have triggered a world wide discussion on issues like poverty, inequity, north-south relationships, global trade and climate change, among others. With the report of the Brundtland Commission and after the UNCED-Conference in Rio de Janeiro in 1992, these issues were increasingly included in discussions regarding sustainable development, which incorporated the notion of sustainability, and which has been transformed in the dominant “development paradigm”. Nevertheless, the definitions of sustainable development and sustainability have been the subject of great controversy, and to achieve a common understanding has proven to be difficult. The way to address sustainability and sustainable development and how to put into practice their underlying assumptions in development projects have also been the subject of much dispute. Sustainability is frequently considered an emergent property of complex systems, which are systems that cannot be described and whose behavior cannot be explained nor predicted from the meticulous dissection and isolation of its components. In complex systems, it is paramount to be aware of the fundamental role of the intricate relationships among its components, and the analytical method no longer can be considered the best epistemology to address them. Therefore, systems thinking has been suggested as a better approach to deal with sustainability. Systems thinking arose from different traditions of understanding, with the consequence that different epistemologies, theories and practices have been labeled as systemic, and it has been understood and applied more frequently as a way of describing the (complex) world, instead of inquiring about it. Sometimes the simple identification of a system has been considered sufficient to make the claim that a systems thinking approach is being adopted. Therefore, when applying this way of thinking to address sustainability the outcomes can be remarkably different. In this paper, an attempt is made to identify the major traditions of applying systems thinking approaches to address sustainability and sustainable development. The objective is to review the different ways this approach has been used to address these issues, and to discuss its possible implications in policy and decision making processes. The major traditions in using systems thinking already identified range from its (superficial) application to conceptualize the problematique of sustainability and sustainable development, to its instrumental application in developing strategies for monitoring and measuring progress toward sustainability.

Keywords: Systems Thinking Approach; Sustainability; Environment; Development.
Adaptive Capabilities of Small Producers and the Limits of their Competitiveness: A Case Study of Small-scale Irrigation Farmers

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Abstract: This study examines issues related to rural development and liberalism. Specifically, it seeks to evaluate the adaptive capabilities of small producers and the limits of their competitiveness when faced by the technological changes and capitalist forces, currently in effect in Brazil. The study focuses on a particular small-scale group: the irrigation farmers, who have been severely affected by the recent economic transformations. The study assumes that these small-scale irrigation farmers are not clearly defined as peasants, landless or small-scale business farmers⁶, which make it a case in point for the benefit of public policies, for instance. Another assumption is that the irrigation technology, especially employed in irrigation schemes which production is market-oriented, is progressive and demanding in terms of usage knowledge, maintenance, with a continuous need of capital investment. Those conditions in turn, demand improved managerial skills. The case study was conducted at the Jaíba Project, located in the state of Minas Gerais. The fieldwork was conducted in between March and August 2002. A semi-structured survey was applied to a stratified random sample of 150 small-scale farmers. Some recorded in-depth interviews were carried out randomly according to the researcher’s judgment. Ultimately, the study attempts to advance the debate on whether these small-scale farmers are developing adaptive capabilities or are rather survival strategies. The analytical frame between the two responses to technological changes and capitalist forces may help to fill the theoretical gap in the theory of profit maximising peasant⁷. This endeavour’s starting point is the small-scale irrigation farmer’s rationale. It is expected that this debate will contribute to understand their resorted mechanisms when working under the pressure of changes and of market.

Keywords: Small-scale Irrigation; Adaptive Capabilities; Competitiveness; Technological Advancement; Economic Liberalisation.

⁶ Ellis (1993) discusses the construction of the peasantry concept for economic analysis. His discussion on this topic informs the approach taken in this study to help define the small-scale irrigation farmers.
⁷ See Ellis (1993).
Local Organisations, Collective Actions and Rural Development: A Case Study in the Amazon Region

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(3) Economist of Para University (Brazil)

Abstract: The aim of this article is to provide a debate about social capital focused on rural area institutional networks and their influence in promoting collective actions to accelerate rural development. Since the beginning of the 1990s academia, non-governmental organisations and departments of development agencies have paid special attention to the concept of social capital and the sub-categories that it involves. Social sciences and particularly economics have incorporated the network and tie categories as essential to an understanding of the importance of institutions to social and economic performance. It can be generally accepted that rural development is not only agricultural growth; on the contrary it involves a number of different social, economic, cultural and environmental aspects. For the last thirty years the re-construction of agricultural productive activities on a small scale has been the recipient of political bias by many national governments and in other cases by NGO’s to develop rural areas along with developing countries. A brief empirical analysis of these actions in the Brazilian Amazon shows that some regions are more dynamic than others, phenomenon that may be explained from many diverse perspectives, such as the economic theory of the comparative advantages. However, it is clear that the dynamics of the region are also linked to the strong presence of social capital, characterised as networks between and among local government departments, non-governmental organisations, agricultural communities, associations, co-operatives and markets represented by private organisations.

Keywords: Local Organisations; Social Capital; Rural Development; Amazon.
Menu Placement in Government Web Documents

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Abstract: My research focuses on menu placement in government web documents. These documents are chosen because they have become an important source of information for world citizens in general and more specifically for Brazilians. However, little is known about the way the graphical interface helps the user find information in government web sites. It seems that many users have problems finding information due to the complexity of the layout and the menu arrangements in these web sites. The types of menus and their placement on screen can assist the user to find information more easily. The aim of the research is to find out whether changes to the placement of different menu categories of Brazilian government web documents affect users’ preferences and speed and accuracy of finding information. The research is approached from an analytical (survey) and experimental perspective.

From an analytical perspective, fifty government web sites from ten different countries are analysed. The analysis leads to a description of how navigation is organised into different menu categories in government web documents, and identifies similarities and differences between menu patterns among different countries. From an experimental perspective, Brazilian government web documents are the objects of analyses. The experiments investigate: (1) the relationship between the presentation of menu and web content, and (2) the effect of different menu positions and orientations on a screen. The findings of these studies are important because they may explain why certain menu placements might be better than others.

At this moment, two studies have already been carried out. The first study investigated table of contents (TOC) presentation on both the same and separate screen to the web content. The difference in the search efficiency found between using the TOC together or separate from the web content suggested that further investigation should be carried out. A second study was conducted in order to investigate TOC presentation on both the same and separate screen to the web content, using different types of TOC, and also different kinds of tasks. The study was conducted in Brasilia with thirty six volunteers. I am currently working on the data analysis.

Keywords: World Wide Web; Government; Interface Design; Menus.
Learning to Trust Lula: Contagion and Political Risk in Brazil

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Abstract: We examine whether Brazilian sovereign spreads of over 20 percent in 2002 could be due to contagion from Argentina or to domestic politics – or both. Treating unilateral debt restructuring as a policy variable gives rise to the possibility of self-fulfilling crisis, which can be triggered by contagion. We explore the political-economy explanation of panic in financial markets inspired by Alesina (1987), which stresses market fears of an untried Left-wing candidate. In Brazil, fears of a radical Left-wing President imitating Argentine default may have served as a channel for contagion. A crucial feature of the Brazilian experience was that Lula learned to become market-friendly and shifted his announcements during the campaign accordingly: we show how, together with market learning of his newly adopted policies, this led to a fall in sovereign spreads. We also discuss how IMF support helped provide time for these adjustments of policy and perception to take place.

Keywords: Sovereign Spreads; Political Risk; Bayesian Learning; Time-Consistency.
Participation in the Mainstream of Sustainable Livelihood and Sustainable Development: A Focus in the Amazon Region

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Abstract: The article focuses on social participation under the approach of sustainable livelihood. In the last ten years the majority of rural development community projects in developing countries have been developed around the mainstream of sustainable development, and particularly the approach of sustainable livelihood. These projects have been carried out incorporating social participation as a form with which to explore community knowledge, economic potentiality and social strengths. These have been considered good examples of community projects by development agencies since they have implemented sustainable livelihoods in the communities within a social participation framework. However, there is disagreement on what constitutes social participation within the development enterprise. The aim of this article is to understand how social participation conceptions have influenced the links between the different assets of the sustainable livelihood framework. The analysis focuses on two different community projects in the Amazon region both of them supported by national and international agencies.

Keywords: Social Participation; Sustainable Livelihood; Sustainable Development.
The Development of Trust Within Food Supply Chains: Assessing the Brazilian Beef Chain

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Abstract: Brazil is one of the most important players in food production and marketing. However, Brazilian food chains are still relying on traditional vertical relationships and old business practices. There is a traditional mistrust between food producers and processors due to bad past experiences and opportunistic behaviour. In the last decade, a key point to competitiveness is the full compliance with international regulation on food safety standards. In order to comply, it is necessary the monitoring of the whole supply chain to enable the assurance of safety. Relevant literature points out the development of partnerships and alliances as the best way to do this. Brazilian food chains are strategically changing their organisational structures. Thus, the mistrust has to be overcome by the creation of trustworthiness. This study analyses, through a rapid appraisal and case studies, the development of trust in the Brazilian beef chain. Two marketing channels are observed. The first channel is the supermarkets own brand chains and, the second one, the export-driven chains. A theoretical framework based on transaction costs economics, value chain and different levels and kinds of trust is developed to carry out the research. The focus is on the identification of the governor of the chain. Several actors, internal or external, can play this role with different results. Findings identify those governors that stimulate upgrading and transferring of best practices and, consequently, on more efficient chains. These results contribute to public policies on food safety regulation and chain competitiveness.

Keywords: Beef Chain; Food Safety Standards; Competitiveness.
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Prevalence of Dental Erosion and Dental Caries Among Schoolchildren in the UK - A Pilot Study

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Abstract: Dental erosion appears to be emerging as a condition affecting a growing number of children and adolescents, but there are scant data for its prevalence worldwide. Aims: To assess the practicalities for future fieldwork including a larger Brazilian sample and to calibrate the principal investigator in the use of the chosen dental indices. Objectives: To determine the prevalence of dental erosion and dental caries among schoolchildren in the UK.

Design: Twenty-five schoolchildren (mean age=13.08yrs, range 11-14 years) were examined for both dental erosion and dental caries at one school in Tyne and Wear. Parents and students were asked for their written consent to participating in the study. Ethical approval was granted by the local ethics committee. The WHO criteria were used for assessing dental caries. Dental erosion was evaluated using the criteria of the National Diet and Nutrition Survey 2000.

Methods: Oral examination took place in a school room, using a head mounted light. Clinical photographs were obtained from a sample of the schoolchildren.

Results: Fifteen subjects showed some evidence of dental erosion and 44% had caries experience. From the 15 students with erosion, one had enamel and dentine involvement, requiring clinical intervention. The other 14 subjects had erosion affecting enamel, indicating the need for preventive counselling, but not restorative treatment. Erosion was most commonly diagnosed on the palatal surfaces of the upper central permanent incisors. Only two students had erosion on the occlusal surfaces of the lower first permanent molars. However, among those with caries experience, the first permanent molars were the teeth most affected by dental caries. A statistically significant association was not found between the prevalence of dental erosion and dental caries. Moreover, in this small sample size, gender did not have statistically significant influence in the prevalence of either dental erosion or dental caries.

Conclusion: The high prevalence of dental erosion observed in this sample emphasizes the need for further studies, aiming to assess whether it can be considered a new dental public health problem and to provide a base on which to build strategies for its prevention.

Keywords: Prevalence; Dental Erosion; Dental Caries; Schoolchildren.
Meningococcal Disease in Brazil: Clinical Characteristics, Outcome and Bacterial Load


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Abstract: The clinical spectrum of meningococcal disease includes meningitis and septicaemia (or both) and blood bacterial load correlates with disease severity in septicaemic cases. This study aims to describe clinical characteristics, outcome and bacterial loads in blood and cerebrospinal fluid (CSF) of Brazilian cases of meningococcal disease. Consecutive cases with a clinical picture of bacterial meningitis or meningococcal septicaemia were enrolled in the city of Recife, Brazil (population 1.4 million), assessed on admission and followed daily during hospital stay. Cases were confirmed by culture or polymerase chain reaction (PCR) in blood or CSF. Bacterial loads were measured by amplification of the \( \text{ctr}A \) gene in an automated Taqman PCR. From 142 suspected cases initially enrolled, 69 had confirmed meningococcal infection, being 59 (86%) type B and 10 (14%) type C. Nine (12%) of the confirmed cases have died. Meningitis alone was present in 22 (32%) cases, whereas 5 (7%) had only septicaemia and 42 (61%) had both forms. In blood samples, the median bacterial load was significantly higher in non-survivors (1.6 x 10^7, inter-quartile range: 4.4 x 10^5 to 3.7 x 10^7) than in those who survived (2.0 x 10^4, 3.4 x 10^3 to 3.3 x 10^5), p=0.001. In CSF, however, median levels in survivors (5.8 x 10^6, 9.5 x 10^3 to 9.2 x 10^7) and non-survivors (2.8 x 10^6, 1.2 x 10^6 to 1.3 x 10^8) were not significantly different. These findings, which expand previous analysis of this cohort of patients, confirm the association of blood bacterial loads with poor outcome in meningococcal disease and show that bacterial loads in CSF do not seem to be associated with higher mortality.

Keywords: Meningococcal Infection; Bacterial Load; Mortality.
Bacterial Load and Inflammatory Response in African Bacterial Meningitis


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Abstract: Studies from developed countries show that pro and anti-inflammatory cytokines and chemokines play a leading role in the pathogenesis of bacterial meningitis and meningococcal septicaemia. Little is known about patterns of host response in the epidemic-prone African meningitis belt, where meningococcal infection presents mainly as meningitis. This study aims to describe bacterial load and the pattern of host inflammatory response to bacterial meningitis in sub-Saharan Africa. Between January and February 2003, consecutive cases with a clinical picture of meningitis were enrolled at Yirgalem Hospital, Southern Region of Ethiopia, where patients were assessed on admission and followed daily during their hospital stay. Cases were confirmed by PCR and bacterial loads were measured by amplification of the \textit{ctrA} gene by Taqman PCR. Cytokines and chemokines were measured by ELISA. From 31 suspected cases initially enrolled, 21 were confirmed by PCR and are described here. Eighteen had group A meningococci and 3, pneumococci. The median age was 14 years (range 6 to 60), 10 were male, none had petechiae or purpuric rash and 2 died during hospital stay. The median bacterial load in the CSF of meningococcal cases was \(2.3 \times 10^7\) copies/mL (range, \(4.4 \times 10^4\) to \(4.7 \times 10^9\)). Bacterial loads correlated positively with CSF TNF-\(\alpha\) (\(p=0.01\)) and RANTES (\(p=0.018\)) and with plasma IL6 and IL8 (\(p<0.001\) for both). This first description of bacterial loads and their association with cytokine and chemokine production in African bacterial meningitis provides insights into the role of these substances in the pathophysiology of bacterial meningitis in this population. Larger studies to identify its association with outcome are warranted.

Keywords: Meningococcal Infection; Bacterial Load; Mortality.
Personality Type and its Implications with Success at Code-Review

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Abstract: This study was part of an interdisciplinary research project called DIRC (Interdisciplinary Research Collaboration on Dependability) which is interested in finding solutions and techniques to develop dependable software and systems. For this, a study of the research regarding personality factors involved in software development was necessary prior to conducting the main body of the research.

The literature shows that it is possible to notice large variations in individual performance, it was then suggested that some innate human trait could be behind such variations. Although personality has already been studied as an important factor in the process of software development, it usually treats programming as a single process, ignoring its different parts (which may require different skills). The aim of this study then, was to identify which personality types (according to Myers Briggs Type Indicator – MBTI) are related to success at a code-review task. To examine this hypothesis, 2\textsuperscript{nd} year computing science students at Newcastle University were asked to complete a set of three tasks.

The first task was a questionnaire designed to obtain extra information about the students. They were able to rate their knowledge in Java (the language adopted for the code-review task); their abilities to find bugs in their own and others’ programs and last but not least their preferred part of the programming process.

The second task was a code-review exercise (the bugs in the code have to be indicated – but not corrected). The students received a 4 page Java program, its manual and API. They were told that all the bugs were semantic but they were not told about the number of bugs in the code (16 bugs were added manually).

The final task was a personality assessment. The students received the MBTI booklets and were asked to answer the questions in the way which made them feel most comfortable.

There were an extra set of data which was the students’ first year marks in modules related to Java. While analysing the data obtained (by Pearson’s correlations and T-Tests), it was found that students with an “Intuitive” preference had a higher performance in code-review than the non-intuitive students.

Keywords: Personality; Code Review; Performance; Software Development.
Wildlife Use and Conservation in the Amana Sustainable Development Reserve, Brazilian Amazon

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Abstract: Subsistence hunting is an important source of protein for traditional Amazonian communities, but may threaten animal populations if not undertaken sustainably, putting both wildlife existence and people’s subsistence at risk. Sustainable Development Reserves (SDRs) were established in the Brazilian Amazon in the 90’s to address both natural resources conservation and people subsistence. However there is still little knowledge about the extent, importance and implications of different forms of resource use in these reserves. Therefore there is an urgent need to assess the sustainability of these practices based on sound scientific knowledge which will allow the development of frameworks for the proper management of these resources. This study will be carried out in one of the largest communities around the black water Amana Lake, located in the recently established Amana SDR (1998). This community is the focus of a pilot program for assessing natural resources use and conservation in the reserve’s upland forests. The two main objectives of this study are to assess: (1) the conservation status of wildlife and the sustainability of hunting, and (2) the roles (economic, nutritional) of wildlife to traditional people. To accomplish these objectives, (1) current harvests and density estimates of wildlife (in lightly and heavily hunted sites) will be used to feed different sustainability models and the results will be used to evaluate the sustainability of current hunting practices. Harvest patterns will be used to assess the role of bushmeat in fulfilling basic human protein needs, and the valuation method of shadow pricing will be used to estimate the non-market value of bushmeat to these people. A Participatory Hunting Management Plan will be the major output of this project, which is likely to be used later in a larger scale around the whole reserve.

Keywords: Hunting; Sustainability; Amazon; Wildlife; Valuation.
A Cell Motility Structure That Should Not Be There

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Abstract: Eukaryotes have developed ways of moving themselves through their environment, ordering organelles within the cell, and coordinating cell division. Central to these fundamental biological processes is a network of interconnected filaments called the cytoskeleton. Each eukaryotic cell type arranges its cytoskeleton according to its own requirements and some groups have evolved their own unique cytoskeletal structures.

The order Kinetoplastida comprises a group of flagellated unicellular eukaryotes that include parasitic as well as free-living species. These cells contain one of these unique cytoskeletal structures, called the paraflagellar rod (PFR). The PFR is an intricate lattice-like construction of protein filaments running inside the flagellum, and actively involved in cell motility. However, one group of kinetoplastids was thought to lack this PFR structure although they swim in the same way as PFR-containing species. This group also harbours a symbiotic bacterium in their cytoplasm and shows other interesting features that classify them as being a monophyletic group.

We investigated how these organisms are able to swim despite the apparent lack of the PFR found in other kinetoplastids. We have found in these endosymbiont-bearing kinetoplastids a gene for one of the 2 major proteins of the PFR. This gene encodes an expressed protein that is able to rescue cells of a PFR-containing species which had been artificially manipulated to disrupt the PFR, showing that the protein is functional. Moreover, when we carefully re-examined the ultrastructure of the flagellum of endosymbiont-bearing kinetoplastids, we discovered that these organisms do indeed possess a PFR, if somewhat reduced. This demonstrates the existence in the endosymbiont-bearing kinetoplastids of a cell motility structure that had been missed in previous published analysis.

Keywords: Kinetoplastida; Paraflagellar Rod; Cytoskeleton; Motility.
Insights Into Flagellar Function And Pathology From Studies With Trypanosomes

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Abstract: Motile cilia and flagella have important functions in the reproductive and respiratory tracts of humans – but we know little about the molecular composition of these important organelles. As ciliated/flagellated cells are terminally differentiated in higher eukaryotes they are difficult to study at the molecular and biochemical level. In contrast, flagellated protozoa offer enormous advantages – they can be cultured in large quantities for biochemical study and a range of advanced post-genomic technologies are available for gene function investigations. Cilia and flagella of eukaryotic cells are constructed from a highly conserved structure – the axoneme, a complex arrangement of over 250 structural proteins. Both the structural and molecular composition of the axoneme have been preserved through evolution – many of the same proteins that build the flagella of lower eukaryotes, such as trypanosomes, are also found in human cilia/flagella.

Our aim is to elucidate the molecular basis of diverse flagellar functions in trypanosomes and relate this information to the structure and function of human cilia/flagella.

Keywords: Trypanosomes, Cilium, Flagellum, Motility.
Specialist Reply Letters in the Referral System: the Views and Practices of Secondary Level Medical Specialists in the Municipality of Camaragibe, PE, Brazil: a Qualitative Study

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Abstract: This qualitative study, performed by health professionals of the Family Health Programme (FHP) from the municipality of Camaragibe (Pernambuco), aimed to identify possible factors that explain the low reply rates, from specialists at the secondary level to generalists at the primary health care level (FHP), observed in the municipality of Camaragibe, metropolitan region of Recife, Pernambuco. Semi-structured interviews were carried out with 12 secondary level specialists between September 2003 and December 2003. Interviews were categorized according to intrinsic factors (perceptions, opinions and attitudes) and extrinsic factors (human and material resources) that may explain the low reply rates. Initial analysis demonstrates a range of comprehension and attitudes regarding the use of reply letters. In general, deficiencies in understanding its importance, a lack of participation in municipal health system organization and deficient work processes at the secondary level were observed. Identification of limiting factors that interfere with reply-letter writing may help to direct strategies that improve continuity of care, inter-professional respect and outpatient services.

Keywords: Interdisciplinary Communication [MeSH]; Referral and Consultation [MeSH]; Correspondence [MeSH].
Abstract: The Guaraquecaba Environmental Protection Area - EPA, which is located in Parana State in southern Brazil, is part of the Atlantic Forest, one of the two kinds of rain forest in Brazil. Situated along the Brazilian coastal area, the Atlantic Forest is an ecosystem with unusually high biological diversity stretching across more than 20 degrees of latitude. With high mountains forming a coastal range and a distinct climate, this geographical diversity encourages a rich variety of species. Occupied by mankind since 1500, today most of these ecosystems are found in small and separated fragments. The biggest fragment of Atlantic forest is encountered in Parana State where the national Government has created an Environmental Protected Area (EPA) in the region of Guaraquecaba. This decision was designed to protect the remaining ecosystem fragment in this area. The aim of the project is to predict different kinds of forest communities using a modelling approach in a Geographical Information System - GIS. The specific objectives were to:

- Establish a predictive model for forest species mapping
- Test the validity of the model in the field
- Refine the model
- Use the model outputs to determine ecological quality
- Monitor impact of human activity from sequential satellite imagery
- Determine the threat to areas of high ecological quality from human activity

Keywords: Rain Forest; Predictive Vegetation Mapping; GIS; Remote Sensing.
Azole Cross-resistance in Oral Candida Flora from Brazilian HIV 1-Infected Child

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Abstract: Case report - A 5-years old HIV 1-infected child who acquired HIV vertically has been monitored at the Paediatric Immunodeficiency Outpatient Service, University of Campinas’ State, Brazil. The child started HIV antiretroviral therapy since 1999 and never received antifungal therapy. During a screening to investigate Candida colonization and antifungal susceptibility in 52 brazilian HIV 1-infected children we isolated Candida albicans-B from this child. Susceptibility of the isolate to amphotericin B, fluconazole, miconazole, and itraconazole was determined by a microdilution method adopted by the National Committee for Clinical Laboratory Standards. The isolate showed low susceptibility to all azoles tested. To investigate the possible cross-resistance to 8 azoles, the effect of azoles on the maximum specific growth rate of isolate was determined in aerobic batch cultures by a Bioscreen C Analyser; a high-throughput system in 200 separate cultures. Voriconazole, fluconazole, itraconazole, ketoconazole, miconazole, econazole, clotrimazole, imidazole, additionally amphotericin B, and nystatin were tested in different concentrations. The isolate showed cross-resistance (Table 1) to the several azoles tested. The voriconazole, a recent antifungal agent used in the treatment of recurrent oropharangeal candidosis, inhibited only 65% and 84.7 % of growth respectively in the concentrations of 32µg/ml and 64µg/ml. Fluconazole inhibited only 57.9% and 65% of growth in the concentrations of 32µg/ml and 64µg/ml respectively. However clotrimazole showed growth rate inhibition percentage of 90.8%, amphotericin B 89.3%, and nystatin 95.3%. The emergence of cross-resistance to antifungal azoles in paediatric patients, including azoles not previously used in children, does therefore occur. This study represents the first azole cross-resistance case concerning oral Candida flora in Brazilian HIV-infected child.

Keywords: HIV1-infected children; cross-resistance; Candida; Brasil.
Follow up Study - Oral Candida Flora from Brazilian HIV 1-Infected Children in the HAART Era

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Abstract: HIV-infected patients often suffer from severe forms of oropharyngeal candidosis, mainly caused by Candida albicans. This study analyzed the HIV Protease Inhibitor (IP) influence over oral Candida flora from 52 Brazilian HIV-infected children, comparing the Candida species identified before the IP using (GI) and under IP therapy (GII). There was a significant increase of non-albicans isolates from 9.6% to 28.8% (p=0.005) between GI and GII groups respectively. In the GII group the second most frequent species was C. tropicalis (n=9) followed by C. parapsilosis (n=8). Rare species found in the GII group included C. dubliniensis, C. novergensis, C. humicula and C. rugosa. All isolates in this investigation were susceptible to amphotericin B. Most of C. albicans and non-albicans isolates were susceptible to fluconazole, itraconazole and ketoconazole. However amongst C. tropicalis isolates (n=7) one of them was resistant to FLCZ (MIC > 64 µl/ml) and one C. albicans-B isolate showed cross-resistance to all azoles tested. The influence of the IP using over the virulence factors particularly in Candida albicans isolates, and emergent non-albicans species with low susceptibility to antifungal agents, represent a serious problem in the medical field. This study represents the first follow up investigation concerning oral Candida flora and antifungal susceptibility in Brazilian HIV-infected children.

Keywords: HIV1-infected children; oral Candida; Brasil.
Genetic Polymorphisms Related to Predisposition to Drug Addiction and Personality Disorders

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Abstract: Genetic evidences have been connected to interindividual differences in susceptibility to drug addiction as well as to some personality disorders. Several authors have reported that genetic factor could play a relevant role estimated at 40-60% of the total risk, and up to 40% of the interindividual differences in drug metabolism and response according to a Swedish study. In some in vitro experiments, it has been seen very large variations in the metabolism of some selective substrates, ranging rates as high as 2000-fold for example, due to genetically polymorphisms in the several genes loci across the genome.

Given the high complexity of our Central Nervous System (CNS), the variation in the metabolism of either endogenous or exogenous substrates, including drugs of abuse, may play unpredictable effects, including vulnerability to addiction and the appearance of some behavior disorders. For instance, same doses of heroine, which has negligible pharmacological activity, develop different ranges of addictive effects among individuals depending on its rate of conversion to 6-mono-acetylmorphine (the active ingredient), and this peculiarity is pointed to the variance in certain genes involved in its metabolism which have been referred as polymorphics. The majority of CNS disorders are considered as complex genetic traits, consequently the main focus in this kind of study has been to provide reasonable evidences and ways forward by moving from loci to haplotypes and allelic variants; however this has proved to be one of the biggest challenges nowadays.

Our project intends to screen polymorphic candidate genes that mediate some pathways in the metabolism of substances of abuse by establishing an association study between case and controls individuals. Samples will be taken from drug dependents on a variety of illicit drugs, such as opioid, cocaine, amphetamine and marijuana. Samples from control individuals will be collected at least in the same amount of the target population. The experiment will also make use of methodological techniques to quantify the frequency of drug-taking, the behavior, the social impact, the psychological effects and objective and subjective consequences of drug use. Family history and environmental contribution will also be assessed by the use of questionnaires.

The information from this may provide a more precise definition of the genetic factors involved with susceptibility to drug addiction and its correlation to some personality disorders. In a future it might be feasible to design treatments to be administered based on the genetic profile of the patients.

Keywords: Drug addiction; Personality Disorder; Genetic Predisposition; Haplotype.
The Genius Monkeys: Tool Use by *Cebus apella libidinosus* Living in the Caatinga Dry Forest

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**Abstract:** Tool use was one of the evolutionary causal forces in the disproportionate brain enlargement and extensive technology observed in *Homo sapiens*. However, the prime movers for the origin and evolution of human tool technology, which probably boosted an increase in brain size, remain the focus of debate. *Cebus* spp. monkeys abilities to use tools and to solve problems are notable and make them excellent models for understanding evolution of tool use. Yet, despite thousands of hours of field observation on four different species until now there has been an almost complete absence of observations of tool use in the wild. This lack of tool use, by contrast with their abilities in captivity, has been explained by low terrestriality or by a lesser intelligence in relation to great apes. I suggested that low abundance of food resources could act as a strong pressure for tool use. I observed a group of *C. apella* for one year and half at the Serra da Capivara National Park in the dry Caatinga forest of Southeast Piauí, Brazil. Despite frequent droughts, an extended dry season and seasonal scarcity in fruit availability, capuchins are found at moderate densities in this habitat. The monkeys were observed to use stones to dig for underground storage organs, and to crack open dry branches, cactus pith, seeds and dry *Manihot* tubers. The use of stones to pound the ground, helping to dig up tubers/roots or locate insects, is a remarkable type of tool use as yet undescribed for non-human primates in captivity or the wild. They also used branches to probe tree holes and rock crevices. These twigs were often modified by removing leaves or stems. The two most accepted hypothesis (social intelligence and frugivory-mental maps) hypothesis for the expansion of the neocortex in higher primates excludes tool use. I suggested that the extensive use of tools by *Cebus* can be linked to their extractive foraging style and perhaps the ancestor of hominids and great apes had a similar foraging style.

Keywords: Tool Use; Dry Forest; Brain Evolution.
Chemokine Gene Expression in *Leishmania major* Infected Toll-like Receptor Competent and Deficient Mice.

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**Abstract:** Diseases of the immune system, the Leishmaniasises, are caused by the intracellular protozoan parasite *Leishmania*, occur in 88 countries worldwide including Brazil, and the endemic areas of disease are still spreading ([http://www.who.int/tdr/diseases/leish/](http://www.who.int/tdr/diseases/leish/)). These parasites cause a heterogeneous group of clinical manifestations ranging from self-healing cutaneous lesions to severe visceral forms of the disease, which are lethal if left untreated. To date, there is no vaccine against *Leishmania* in routine use anywhere in the world, and treatment for the disease is largely dependent on the use of costly, highly toxic drugs. The aim of this study was to characterize the contribution of Toll-like receptors (TLRs) to the induction of chemokine expression in host defence to *Leishmania* infection. Activation of TLRs by various microbial products triggers the expression and subsequent production of specific cytokines and chemokines. Although the essential role of TLRs during bacterial infections has been well documented, little information is available on their role in parasitic infections. Studies on TLR signalling pathways have emphasised the role of specific chemokines in linking innate and adaptive immunity. Chemokines are molecules that mediate the recruitment of immune cells by chemotaxis to the site of infection, and can also cause activation, influencing Th1/Th2 differentiation and anti/protozoan activity. The involvement of chemokines in Leishmaniasis has been demonstrated in both cutaneous and visceral forms of the disease, with a correlation between MCP-1 and IP-10 chemokine expression and healing of cutaneous lesions. In this work, the expression of a subset of chemokines was studied in TLR4 competent (TLR4+/+) and deficient mice (TLR40/0), following infection with *Leishmania major*. Chemokine expression at the site of infection (the footpad), in the draining lymph node and in the spleen of infected animals was determined using two different methods of analysis. The results indicate that *L. major* infection causes an overall upregulation of RANTES, MIP-1α, IP-10 and MCP-1 in the footpads and lymph nodes, while expression of these chemokines is constitutive in the spleens of TLR4+/+ and TLR40/0. In conclusion, different patterns of expression were detected depending on the time post infection, but there was little variation in the expression of these four chemokines in the presence or absence of TLR4. These data contribute to our understanding of the role played by chemokines in the development of the inflammatory and immune response to *Leishmania* infection.

**Keywords:** *Leishmania major*, Toll-like receptor, Chemokines.
Development and Optimisation of an Intranasal Scopolamine Microcapsule Formulation

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Abstract: The aims of this project are to develop and optimise suitable microcapsule formulations containing scopolamine for nasal delivery, which can be used by astronauts to prevent motion sickness. To reach these aims, scopolamine base was produced and subjected to TLC analysis using Dragendorff’s reagent to aid the identification of the active compound and any degradants. Empty microcapsules as well as those containing scopolamine were prepared by complex coacervation. An ultraviolet spectrophotometric method was developed to analyse whether any scopolamine had been entrapped in the microcapsules, and an HPLC method was developed to quantify any drug entrapped.
No degradation products were found to be formed by the treatment process on the evidence of TLC analysis. The ultraviolet spectrophotometric method of analysis was shown not to be sufficiently sensitive to quantify scopolamine in microcapsules made by the complex coacervation method, following acid or alkaline digestion. The quantification of scopolamine in the microcapsules was however possible using an HPLC method. After acid and alkaline digestion, scopolamine was found to be entrapped. In addition, when alkaline digestion was used, all scopolamine underwent degradation, while scopolamine was only partially degraded using acid digestion. It was therefore decided that it would be necessary to use a different method of microcapsule production and spray-dying is now being evaluated.
In conclusion, the complex coacervation method was shown to not be suitable to prepare scopolamine microcapsules. Ultraviolet spectrophotometric analysis was not sensitive enough to quantify scopolamine in the microcapsules but the HPLC method was found to be sufficiently sensitive.

Keywords: Scopolamine; Microcapsule Formulation; Motion Sickness; HPLC.
Diversity and Activity of Sulphate-Reducing Bacteria (SRB) in Freshwater and Brackish Sediments

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Abstract: Microbial ecology is the field of science that investigates the relationship between microorganisms and their environment. For many years studies of microbial ecology were carried out exclusively using traditional techniques of enrichment and isolation, which is known to be suitable for a minor fraction of microorganisms. However, recent approaches based on molecular biology allowed studies of microorganisms that cannot be easily cultivated, leading to a best picture of the microbial community in situ. It is known that microbes are widespread in the environment and play an essential role in the biogeochemical cycles and degradation of pollutants. Microbial ecosystems are usually highly heterogeneous, comprising members with specialized metabolic capacities, such as sulphate-reduction carried out by sulphate-reducing bacteria (SRB). This group of anaerobic microorganisms has been extensively investigated in marine sediments, where they dominate the terminal anaerobic oxidation of organic matter. In contrast, SRB are poorly studied in freshwater systems, mainly because of the belief that their activity is limited by sulphate. The aim of this research was to compare the role of SRB in freshwater and brackish sediments from the River Colne estuary, Essex, U.K. Sulphate reduction rates (SRR) were measured with $^{35}$SO$_4^{2-}$, whereas diversity and abundance of SRB were investigated by 16S rRNA-based techniques. In addition, methane production measurements and slurry experiments amended with metabolic inhibitors were used to investigate competition between SRB and methanogenic archaea. The results indicated that sulphate reduction in the freshwater sediment was found to be 7-folder higher than in brackish sediment, despite the lower sulphate concentrations. The relative contribution of sulphate reduction to terminal carbon mineralization was up to 100% in the brackish site and 68% in the freshwater site. Genotypic diversity of SRB in both sites was apparently similar, being dominated by members of Desulfosarcina group. It is hypothesised that tight coupling between sulphate reduction and sulphide re-oxidation maintained high SRR in this low-sulphate environment. The very high SRR at the freshwater site compared to the brackish site also suggested high availability of electron donors, possible because of subsurface exudation of labile organic molecules from plant roots, as shown in other similar environments.

Keywords: SRB; Anaerobic Sediments; Sulphate Reduction; Molecular Biology; Microbial Ecology.
MATHEMATICAL
&
PHYSICAL SCIENCES

Includes:

Chemistry
Computer Science
Engineering
Physics
Formation of Soluble Organic Compounds During Anaerobic Wastewater Treatment

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Abstract: The protection of natural resources is a major task in achieving sustainable development. Increasing contamination of water resources by uncontrolled disposal of wastewater puts the supply of water to the population at risk, and endangers the environment. As a result, wastewater treatment and wastewater reuse are key aspects for sustainability, since they promote the preservation of limited water resources which have been facing qualitative and quantitative threats.

Although there are many different processes for wastewater treatment, there has been an increasing interest in the anaerobic technology, especially in developing countries like Brazil. This is because anaerobic wastewater treatment produces less sludge (excess biomass that requires further treatment) and requires less electricity, making the process cheaper and more competitive when compared to aerobic treatment and other physical-chemical processes. In addition, anaerobic treatment produces methane, a non-fossil fuel that can be utilized in the wastewater treatment plant and further reduce costs. Despite the advantages, one factor that limits the application of anaerobic biotechnology is the relatively high concentration of organic material in the effluent. Characterization of both aerobic and anaerobic effluents has shown that the majority of the residual chemical oxygen demand (COD) is due to soluble microbial products (SMP) excreted by the microorganisms during the biological treatment. Therefore, in order to increase the efficiency of anaerobic technology, it is important to know the environmental conditions and operational parameters that affect the production of SMP. Reduction of effluent COD and increase in the efficiency of anaerobic treatment is essential to convince skeptics and may lead to a wider acceptance and application of this sustainable technology.

Therefore the main objectives of this project were to determine the composition of the residual COD, and to investigate the environmental factors and operational parameters that lead to the formation of SMP in anaerobic reactors. The results showed that SMP production increased during both organic and hydraulic shock loads, and that cell lysis seemed to be an important source of SMP during hydraulic shock loads and low pHs. The production of SMP also increased in the absence of nutrients and in the presence of the toxic compounds chromium and chloroform. Characterization of anaerobic effluents by gas chromatography-mass spectrometry showed the presence of many aromatic compounds, and chromatographic analyses revealed that cell lysis and extracellular polymers (ECP) were important sources of SMP. This research has shown that one way to minimize SMP production is by avoiding stressing the microorganisms and promoting cell lysis, which can be accomplished by ensuring optimal growth conditions (pH, nutritional balance) and absence of stressful factors (e.g., toxic compounds) in anaerobic reactors.

Keywords: Anaerobic Biotechnology; Wastewater Treatment; Effluent Characterization; Residual COD; Soluble Microbial Products.
A Model for the Public Transport Network Design Problem

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Abstract: From the pioneer work of Lampkin and Saalmans (1967) till the techniques using artificial intelligence like in Chakroborty (2003), the problem of determining near-to-optimum network of urban public transport systems has been exhaustively studied. Even though, it has been attracting researchers all over the world nowadays. This can be explained by the problem extreme complexity and, in consequence, the impossibility to find “the” optimal solution for a real-scale problem, and the difficulty of finding good solutions, called “near-to-optimum. We have developed a model that goes further in the local realities of metropolis in developing countries. Using both origin-destination matrix and road system as basic input data, this is an approach more realistic then the ones found in the literature, because several other constraints were considered. The model considers different levels of service, to be set by the transport planner, and the actual capacity and main infra-structure restrictions (as railways and stations, bus corridors, and narrow streets only for cars). These parameters include: operator's point of view (it means maximum profit), passenger's perspective (it means maximum level of service), and other possibilities between both. The goal it to optimise existent transport network, taking into consideration main characteristics of the system, passenger’s desires, budget constraints and long-term planning. This model differs from the ones applied, for instance, in London or in Singapore also by its lower cost of implementation. To test the model we are setting a partnership with local transport authority of Fortaleza, a Brazilian city of 2,100,000 inhabitants. Its first underground line is being constructed, and this will be a good opportunity to take all data used on its planning to be inputted in the proposed model. It would be possible then to evaluate the project, and eventually bring to it some important improvements.

Keywords: Transport Network Design; Combinatorial Optimisation.
Identification of Aircraft Non-Linearities from Flight Flutter Test Data

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Abstract: Flight flutter tests are performed in aircraft industry to guarantee that flutter will not occur inside the designed flight envelope of new or modified aircraft. The methodology consists of flying the aircraft in several test points inside the flight envelope and performing a traditional modal testing in each of these points. The basic elements of the modal testing consist of exciting the structure in some way, measuring the response in different locations and using the output/input relationships to extract modal parameters such as natural frequencies and damping ratios. The damping ratios are a direct measure of the structural stability and so the monitoring of their values between consecutive test points can show the approaching to flutter. The variation of damping, however, can be very abrupt between consecutive test points, what makes necessary the use of more elaborate methods for flutter prediction rather than the simple extrapolation of the damping vs. test point curves. One important limitation to the current approach is the assumption of linearity for the extraction of the modal parameters. In reality, the nonlinear effects due to the structure, control systems and aerodynamics have a great influence in the structural behaviour. A nonlinear phenomenon that has been observed during flight flutter tests of military aircraft is the limit cycle oscillation (LCO). The occurrence of LCO is not as catastrophic as flutter, but because it corresponds to a zero damping ratio, it is very difficult to distinguish between the two phenomena. This is of great concern for the aircraft industry because big delays in the flight flutter testing programme can occur if a LCO (or flutter) is encountered in a lower speed than the one initially expected by the flutter calculations. Because the LCO can not be predicted accurately at present, its occurrence is a surprise and a doubt for engineers. The big challenge at the moment is the development of accurate methods for LCO prediction, but this is only possible after identifying the nonlinearities that occur during the flight tests. In this work, some approaches for nonlinear identification of flight flutter test data are developed and validated using simulated and real data sets.

Keywords: Flight Flutter Testing; Nonlinear Identification.
Three-Dimensional Reservoir Sedimentation Model

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Abstract: The present study is a three-dimensional model for reservoir sedimentation, forming an advance for the 1D and 2D models currently available. The Navier-Stokes equations for incompressible flow are solved to obtain the flow field through the reservoir. The solver employed to do this was the SIMPLE, the widely used algorithm of Patankar and Spalding. The suspended sediment transport through the reservoir was modelled with the 3D Advection-Diffusion equation. A Cranck-Nicholson scheme was used to discretize that equation for it to be solved. A line-by-line algorithm, the 3D equivalent to 1D Thomas algorithm, was used to solve the system of equations resulting from the Cranck-Nicholson scheme. Finally, to assess the bed variation and movements, a bed-load 2D continuity equation was used and solved straightaway. For this, two bed-load functions were used each one for a bed direction. This is a new view in a sediment transport model since such approach has been used only in laboratory channels according to the reviewed literature. The model was then verified against laboratory data and in a case study based on data from Itaipu Reservoir in Brazil. The laboratory test confirmed the viability of the flow and sediment routing component of the model. This test demonstrates the ability of the model to reproduce sediment deposition patterns both along and across a reservoir cross section. This demonstrates the usefulness of the 3D approach. Also, only a 3D model can take transversal and longitudinal water and sediment input, a possibility of the present model. This is an innovation concerning to the modelling of reservoir sedimentation.

Keywords: Reservoir Sedimentation; Navier-Stokes Equations; Sediment Transport.
Skin Detection and its Application for Real-time 3D Hand Tracking

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Abstract: Any marker less visual method designed to detect and track an object without the intervention of a human operator must confront the question of how in the first instance to associate features observed in the image (be they pixels, edges, corners, etc) with the object itself. An initial automatic segmentation and localisation must be feasible. The definition of a method for locating hands in images seems to be complicated if one considers that hands are articulated objects that can present both high variation in their shape, and in their degree of self-occlusion. However, despite the wide variance in the appearance of different people's skin, it is observed that, if brightness is disregarded, there is a reasonable uniformity in human skin colour. Therefore, if image entities are represented using a colour space in which brightness is a subspace orthogonal to chromacity, skin colour samples tend form a rather compact cluster in the chromatic subspace.

A wide range of classification techniques has been applied to distinguish skin colour from other object's (background) colours. For applications such as real-time hand tracking, speed is an issue. Therefore, we have chosen to implement a method in which classification is performed using a compact lookup table. Jones and Rehg have shown that a histogram model provides high accuracy and low computational cost, though they made use of the three channels of the RGB colour space. As brightness provides noisy information to discriminate between skin and background pixels, we decided to adopt the UV channels of the YUV colour space. An advantage of the UV colour space is that, being two-dimensional, the lookup table requires less memory and less training data to provide a good classification rate. Another advantage is colour cameras often deliver images using the YUV representation, so no colour space conversion is required, saving computational time.

To give more support to this choice, we have done comparisons between the UV and other chromatic spaces (CIE and HSV) and verified no significant difference in the compactness of a skin colour cluster obtained from over half a million skin colour samples.

This technique is applied as a pre-processing step to for a hand locator based on matching using a sparse template. This hand locator initialises a 3D hand tracker, which uses the edges of the colour-classified images as feature measurements to update the pose of a 3D hand model. The aimed application of this system is to enable the wearable robot developed by W. Mayol-Cuervas to identify the 3D pose of a pointing hand that could be used to re-direct the gaze of its active camera.

Keywords: Skin Colour Detection; Hand Tracking; Computer Vision.
1200 nm-wide Supercontinuum Generated in Tapered Conventional Fibres Pumped by Low-Cost Laser

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Abstract: The small effective area, strongly modified chromatic dispersion (CD) and easy input coupling of tapered single-mode fibres make them an effective medium for generation of an ultra-wide wavelength spectrum (called supercontinuum, or just SC) in the output of the fibre. The taper fibres were made by the travelling flame procedure where a flame heats the fibre and, simultaneously, its ends are pulled. The final structure is a standard fibre (125µm) in both ends and a central region with waist of just few microns diameter.

To obtain a wide spectrum, the CD of the fibre should be small enough at the pump wavelength. However, the simplicity of the tapered fibre structure means there is limited scope to engineer the CD of the taper. The only design parameter explored until now has been the waist diameter. In this work we use the medium surrounding the tapered fibre as a second design parameter, allowing us to flatten the dispersion spectrum and generate a 1200nm-broad SC using nanosecond pulses from a low-cost microchip laser. Previous experiments required femtosecond pulses from sophisticated modelocked lasers.

We immersed tapered fibres in heavy water (D₂O), which has similar refractive properties to ordinary water but without the strong absorption peak around 1450nm. The immersion reduces dispersion and flattens its variation around the emission wavelength of the laser, 1.06µm.

Conventional fibres (Corning SMF28) were tapered with low loss (~0.2dB) and uniform waists, and exposed to the output of a diode-pumped Nd:YAG laser (pulse width 0.6ns, repetition rate 7.25kHz, average power 40mW). Output spectra were measured from a tapered fibre with a waist of diameter 2.5µm and length 90mm, before and after immersion in D₂O. The spectrum from the immersed sample is much broader than that from the sample in air, and extends over the complete octave ~650-1300nm; a visible red spot could easily be seen at the output. The second step was use this immersed taper to pump a second taper (1.9µm waist diameter) that as zero dispersion around the peak of the first taper. The final spectrum extends for more than 1200nm, from 400nm to 1600nm.

In conclusion, the CD of tapered fibres can be usefully engineered by immersing them in fluids. For example, by immersion in heavy water it is possible to use cm lengths of tapered conventional fibre to generate an 1200 nm-broad SC from a low-cost ns source: long lengths, high powers, short pulses, complex structures or expensive laser systems are not necessary to generate ultra-broadband light in fused silica waveguides.

Keywords: Nonlinear Optics; Optical Fibre; Supercontinuum.
Patterning of Surfaces: New Manufacturing Methods and Applications

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Abstract: In engineering surfaces, if a uniform microrelief with regularly shaped asperities is produced, this can provide the opportunity of designing with a uniform, known surface relief and the ability to produce such surfaces consistently on actual machine parts. Many applications can be proposed for the texturing of surfaces, such as improving lubrication, removal of wear debris, tissue ingrowth in biomedical implants, sealing, aerodynamic and hydrodynamic effects, reduction of stiction, optical effects, mechanical interlocking, increase of friction, reduction of friction, etc. This work explores the possible methods available for changing the surface topography of engineering components. A literature survey presents the currently available methods, their advantages and limitations. New methods are suggested with improved characteristics of cost, speed, feasibility, tribological performance, etc., as well as new applications where textured surfaces could lead to better behaviour. A selection methodology was established to classify and rank the methods, aiming to create a model to select techniques for changing surface topography. Also, this work presents an exploratory tribological evaluation of textured surfaces under sliding conditions. The tests consist of lubricated reciprocating tests using various tribological conditions. The experimental apparatus for these tests has been implemented and the tests have already started, but no conclusive results are available so far.

Keywords: Rain; Urban Environment.
Generation of High-Peak-Power Ultrashort Light Pulses in Optical Fibers

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Abstract: Ultrashort optical pulses are essential elements in several fields, both in industry and in research laboratories. They can be used, for example, to generate extreme ultraviolet radiation in inert gases and X-rays and attosecond (10\(^{-18}\) seconds) pulses in laser-induced plasmas, and for material processing without heat propagation that generally degrades the machining process. However, the highest obtainable peak power from a laser is limited because at high powers the interaction between pulses and laser medium becomes nonlinear and leads to pulse degradation. To overcome this problem one can use the technique of chirped pulse amplification (CPA). In CPA, the pulse exiting the laser is temporally stretched by propagation in a dispersive medium. To conserve energy, the stretching is accompanied by a decrease in pulse amplitude and, thus, peak power. The stretched pulse can then be amplified without nonlinearity being observed in the amplifier. Subsequently, the pulse is recompressed in a dispersive medium with dispersion opposite to that of the stretcher. The resulting pulse has a peak power much higher than that directly obtainable from the laser output. Using CPA, solid state lasers can yield up to terawatts (10\(^{12}\) Watts) peak powers. However, these lasers are generally bulky, have high electrical power consumption, and constantly require servicing. Lasers built entirely in optical fibers, on the other hand, are compact, low-cost, do not require alignment of optical parts, and have very low power consumption. Problems arise, nevertheless, when one tries to obtain high-power pulses from an all-fiber laser system. As the interaction length between light and fiber material is at least of a few meters, the highest achievable peak power is just above a kilowatt, even with fiber CPA system. In this work we obtained pulses at a wavelength of 1550nm (infra-red) with peak powers as high as \(~12.5\)kW and durations under a picosecond (10\(^{-12}\) seconds). We used an all-fiber CPA system in which pulse recompression was achieved in an air-core photonic bandgap fiber. These recently developed fibers are able to guide the light through an air core surrounded by layers of glass tubes that diffract the light and keep it confined to the core. The high peak powers achieved result from the fact that the optical nonlinearity of air is 1000 times lower than that of glass. The system can be optimized to yield higher powers and can be made to operate at other wavelengths.

Keywords: Optical Fibre; Ultrashort Pulses; Chirped Pulse Amplification.
Gravitational Lensing Magnification by Clusters of Galaxies

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Abstract: The light from distant objects is deflected by intervening mass inhomogeneities, and that is called gravitational lensing. We use numerical simulations of the large scale structure of the universe and high resolution simulations of clusters to calculate the gravitational lensing magnification caused by these mass concentrations. The expected cosmological mass distribution in a flat universe with low matter density (cold dark matter) and a cosmological constant was simulated on a large volume redshift cone. A mock galaxy catalogue was generated from the mass distribution and thousands of galaxy groups were identified in the luminous sky projection. We calculate the expected magnification around the galaxy groups and with that the induced QSO-group angular correlation due to magnification bias. This correlation is an observable and can be used to estimate the mass of the clusters and also make cosmological inferences. We also use higher resolution simulations of ten clusters to study the role of small scale structure and test assumptions about cluster homogeneity and lensing approximations. We find that the numerical results from simulations are in agreement with analytic predictions and compare those with some observational results. The observed QSO-galaxy group correlation is stronger than the predictions for the cosmological model used (the presently fashionable concordance model). This suggests that there could be unknown systematical errors in the observations and data reduction. If the observed signal is assumed to be just due to gravitational lensing then the magnification is stronger than expected. That could be due to more massive clusters or more efficient lensing than usually predict from theory and simulations.

Keywords: Gravitational Lensing; Galaxy Cluster; Mass Estimation; Large Scale Structure of the Universe.
Brazilian Construction Contractor’s Competitiveness in the International Market

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Abstract: Competitiveness has become an important issue for nations and industries. Developed countries were the attention of most studies on the subject, so far. However, many studies are already focusing on the developing world. In this research, attention is on Brazil, a developing country, with big potential for upgrading its industries, and becoming more competitive. The country is introduced and its construction sector is characterised. This study concentrates on the biggest Brazilian contractors, which are (or could be, in the near future) competitive players in the international construction market. 10 case studies were conducted and analysed in the light of Michael Porter’s Diamond framework for international competitiveness. The Diamond is composed of four main determinants, which influence international competitiveness of a country’s industries. These are factor conditions, demand conditions, related and supporting industries, and firms structure, strategy and rivalry. Porter includes two additional variables to complete his diamond (chance and government). The effect of one determinant depends on the state of others, and advantages throughout the diamond are necessary for achieving and sustaining competitive success. Emerging patterns from case study analysis are compared. The drivers of Brazilian contractor’s competitiveness are then formulated. Outcomes show that Brazilian construction companies have challenges, obstacles to overcome, but they also have many competitive advantages when acting in the international market.

Keywords: Brazilian Contractors; Competitiveness; Diamond Framework; International Market.
Machine Assignment Analysis Using an Ant Colony Algorithm

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Abstract: Natural processes have proven to be a very rich source of inspiration for optimisation schemes, such as simulated annealing and genetic algorithms. The same is true for ant colony optimisation (ACO) algorithms, which use the metaphor of an ant colony to model, for instance, the scheduling of distributed computing systems and related problems. The scheduling of xray detectors for usage in Astex Technology's high throughput protein crystal crystallography experiments has proven to be a very demanding task, and the search for analytical and modelling tools is of extreme importance to establish reliable forecasting procedures for the system's yield. The following work presents the results of an ACO-scheduling scheme for the X-ray diffraction facilities at Astex and its usage as an analytical tool to understand the current scheduling process.

Keywords: Process Optimisation; Protein Crystallography; Ant Colony Algorithm.
How to Evaluate the ‘Goodness’ of a Summary

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Abstract: According to the Oxford English Dictionary the term summary of a statement or account comprises the chief points or the sum and substance of a matter. A summary is expected to be comprehensive yet brief and readable. We believe that our program SummariserPort, can produce readable, brief and comprehensive summaries of texts of variable lengths – from news reports to full-length books. However, the evaluation of a summary depends, in a very general sense, as to how close it is to the chief or key points in the source text. This is crucially important when we discuss automatic evaluation of summaries; and it forms the main aim of this research: how to evaluate the ‘goodness’ of a summary automatically? In other words, we want to investigate if a possibility of an evaluation conducted by computer would be preferable, avoiding some drawbacks, like time consuming, expense and not depending of human intervention. We are trying to overcome these problems developing an efficient and accurate evaluation procedure which is straightforward, yet effective. To do so, a statistical ranking technique is being used to calculate the probability a summary is similar to its corresponding original text.

Keywords: Summary; Summarization; Evaluation; Summary Evaluation.
Effects of Disorder and Electron-Electron Interactions in Quantum Hall Systems

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Abstract: I’m doing my PhD in Physics at State University of Campinas (Unicamp - Brazil), being supervised by Professor Peter Schulz. At the moment, I’m developing part of my PhD research project at the University of Oxford under the supervision of Professor John Chalker from the Theoretical Physics Department (for a one year “doctorate sandwich” – started on September 2003).

The Physics I’m studying is related to low dimensional quantum systems, investigating more specifically some behaviours of systems that present the Quantum Hall Effect, i.e., two dimensional electron systems in the presence of magnetic field.

Few years after the discovery of the Quantum Hall Effect (QHE), it was conjectured that the extended states from the Landau band centers should "levitate" in energy, rising above the Fermi energy, as the magnetic field vanishes or the disorder is sufficiently increased. This levitation hypothesis leads to important consequences, as pointed out by the Global Phase Diagram of the QHE. Using a numerical approach in 2D lattice models treated in a tight-binding framework, we could identify and quantify the energy shifts of the extended states from Landau band centers (Ana L. C. Pereira and P. A. Schulz, Phys. Rev. B 66, 155323 (2002)). The idea of the work that is being developed at Oxford is to address the effect of screening on inhomogeneous quantum Hall liquids in order to analyze the local electronic density, which is related to interesting recent experiments on the microscopic structure of the compressible and incompressible regions in the integer quantum Hall regime.

Keywords: Quantum Physics; Quantum Hall Effect.
Physical and Numerical Investigation of Three-dimensional Hydrodynamic and Mixing Processes in Disinfection Tanks

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Abstract: Hydrodynamic and mixing processes are two of the key factors that control the bio-chemical efficiency of water supply and wastewater treatment plants. Since the majority of treatment processes are functionally dependent on the hydrodynamics, then the main hydraulic parameters, such as: the loading rate, flow distribution, density currents and retention time, can profoundly affect the key indicator concentrations in the effluent.  

Current designs of treatment tanks are still based on simple flow assumptions, such as completely mixed or plug flow. Key hydraulic parameters obtained using these idealised-flow conditions, e.g., particle retention time, are still being used for determining the optimal chemical doses. However, flow fields measured from treatment tanks exhibit strong three-dimensional flow patterns, with circulation being recorded in both the horizontal and vertical planes. Stagnant flows and dead zones, which are related to circulation, can severely affect the treatment efficiency and reduce the output quality. Various numerical models have been developed for simulating the water and wastewater treatment processes, ranging from one-dimensional homogeneous to three-dimensional turbulence flow models. However, to-date only simplified models such as one-dimensional box type have been used for practical design works. Detailed processes based on two- and three-dimensional models have not yet been widely used for the following reasons. Firstly, most numerical models used in water treatment tanks were originally designed for internal flows that are not capable of predicting accurately the details of flow parameters near the free surface. Secondly, for those models originally developed for free-surface flows the assumption of a hydrostatic pressure distribution in the vertical direction has been generally used. This type of model cannot be applied to flows with strong vertical accelerations, thus they have only limited use in predicting flow fields in treatment tanks. Thirdly, detailed measurements from either prototype or physical model units are very limited and hence rigorous calibration of sophisticated numerical models has not yet been carried out.  

In this study a new computational fluid dynamics model has been developed and applied to simulate flow and solute transport processes in a typical water treatment tank. The model is based on the finite volume method, solving the three-dimensional Navier-Stokes and the advection-diffusion equations with a hydrodynamic pressure distribution and a k-ε model to account for turbulence. The model has been calibrated with experimental data of velocity fields and solute distribution acquired in a 6 m³ model tank located in the Halcrow Hydraulics Laboratory, Cardiff School of Engineering.

Keywords: Numerical Modelling; Physical Modelling; Hydrodynamics; Solute Transport; Turbulence Model.
Diffusion of Technological Knowledge in Construction Supply Chains: the Role of Specialist Contractors

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Abstract: It is now recognized that specialist contracting organizations play a fundamental role in the supply chains that serve construction projects, especially in the case of technologically complex projects that need to be developed within compressed schedules and tight budgets. Specialist contractors participate in the development of the design solution, in the procurement of specialty items and fab shop assembly, and in installing the systems on site. To accomplish these tasks, specialist contractors bring together engineering and design competences with fabrication and construction competences within a single firm. While existing research recognizes the potential contributions of specialty contractors’ knowledge to project delivery, the processes by which this knowledge gets created in first place within the boundaries of the specialty contractor firm remain largely absent from the literature. This research proposes to carry on a ethnography to investigate how specialty-contractor knowledge is created, sustained, and diffused, first within the boundaries of the firm, and second across boundaries with engineering and other contracting organizations. Specifically, this paper reviews relevant literature on knowledge management and innovation.

Keywords: Construction; Knowledge Management; Innovation; Operations Management; Specialist Contractors.
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