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With a Little Help from our (Virtual) Friends

Simulating Peer Interactions for Assessment and Intervention in Children with Social Skills Deficits

Figure 1

Childhood interactions with peers allow children to experience the intimacy and conflict inherent in human relationships [1]. Some children find establishing and maintaining peer relationships natural and easy. Others, such as children with autism spectrum disorders (ASD), may experience extreme difficulties that put them at risk for poor social adjustment, depression, and isolation in later life [2]. These children also miss out on the learning opportunities that come through reciprocal social interaction with peers. Luckily, with intervention and support, children can improve their skills. However, to provide an effective intervention, a child's interaction skills with peers must first be assessed. Only then can a treatment be tailored to the needs of each child.

There is wide agreement among clinicians and researchers that both assessing peer interaction skills in natural situations and including typically-developing peers in interventions are needed. However, practical limitations, such as availability of typically-developing peers willing to participate, and difficulty standardizing and consistently repeating the behaviors of these confederate children, has to date largely prevented these efforts.

Our research pursues the hypothesis that virtual peers (VPs) – 3D, life-sized, animated children that interact with real children using speech and gesture – can be used to address these limitations, both for assessment and intervention. For assessment, we are designing activities that use multiple VPs to simulate group interaction. These activities are designed to elicit social behaviors, such as joining a game or maintaining an interaction, so that these skills can be evaluated. For intervention, we use VPs to allow children to practice essential skills, such as contingency and reciprocity, which are needed for effective peer interactions. We are also developing

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A Little Help from our (Virtual) Friends (cont.)

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Editor
Colin G. Johnson
Computing Laboratory
University of Kent at Canterbury
aisbq@aisb.org.uk
http://www.aisb.org.uk/aisbq/index.shtml

Advertising and Administration
Therie Hendrey-Seabrook
aisbq@aisb.org.uk
School of Science and Technology
University of Sussex
Falmer, Brighton
UK, BN1 9QH
Tel: (01273) 678448
Fax: (01273) 671320

a new learning platform that enables children to control the behaviors of the VP while it interacts with another person. We believe this platform may help children plan and reason about how to engage in contingent and reciprocal interactions with peers, thereby improving their skills.

The VP system currently in use in our research (Figure 1) can initiate stories, give backchannel feedback, respond to a child's input, and use non-verbal behaviors to show attention and encourage continued interaction. In previous research with typically-developing (TD) children, literacy and social skills significantly increased after storytelling interactions with the VP [3]. For our current purposes we needed to expand the VPs' abilities. The challenge has been to build a more elaborate behavioral model for the VP that will allow both assessment of social skills and interventions to improve social skills. This requires simulating group peer activity and implementing conversational and play exchanges that elicit reciprocal interactions.

To achieve these goals we observe children with ASD and TD children in social contexts. We use these observations to construct a model of typical behavior, which we subsequently implement in a cohort of prototype VPs (Figure 2). Then, we compare the behaviors of children while they interact with the prototype VPs versus their behaviors with actual peers. Based on these observations we refine our design of the VPs. Such a process of observing, redesigning, and refining characterizes our work.

For our assessment work, we have been observing 4-5 year old TD children's free play in a group setting. Our goals for these observations are to: (1) design new group activities for the VPs by identifying the activities and games that elicit the most reciprocal interactions among peers; (2) identify and characterize in a formal model the kinds of reciprocal behaviors characterizing children in these group activities as the basis for our assessment of social skills deficits. On the basis of our results, we are currently implementing a cohort of VPs capable of engaging in the same kind of interaction with one another, and of inviting the real child to join them. We believe that a VP-based assessment of this sort may address some of the difficulties presented by current assessments, because they are easy to control, consistent, and readily available. Thus, VPs may positively impact the effectiveness and accuracy of interventions and assessments available to children with developmental disorders like autism.

Figure 2

With a Little Help from our (Virtual) Friends (cont.)

For our intervention work, we have been observing the play of 7-12 year old TD children, and of children with autism, in a semi-structured setting. Each child tells stories in turn with a TD peer and a VP. The stories are analyzed both quantitatively and qualitatively for narrative content, turn-taking behaviors, and topic management. This 2x2 design (children with ASD v TD children; VP v TD peer conversational partner) allows us to make several comparisons that contribute to the design of VPs: (1) where children with autism differ most from TD children in this kind of storytelling so that we can target our intervention to these areas; (2) where children with ASD may demonstrate increased competencies with the VP than they do with TD peers, so that we can build on these strengths in an intervention; and (3) where the behavior model of the VPs is deficient with respect to behaviors exhibited by TD children. Our current results suggest that children with autism approach activities with the VP with excitement, and that their ability to contribute appropriately to the conversation may be more evident with VPs than with real peers, and may improve over the course of the interaction with a VP but not with a TD peer [4]. These results certainly suggest that VPs may be useful as an effective intervention for children with autism.

The research described here is in progress, and our current work includes evaluation of both the assessment and the intervention tools.

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Justine Cassell, Andrea Tartaro, Miri Arie
Centre for Technology and Social Behavior
Northwestern University, USA

Multi-Robot Cooperation Inspired by Immune Systems

Usually mobile robots need to interact and engage with one another to achieve assigned tasks more efficiently. These autonomous multi-robot systems would be highly beneficial in assisting humans to complete suitable tasks. This research is suitable to be applied to real-world situations for example, in rescue operations, military missions, service robots, and industrial robots. These areas would greatly benefit with the use of multiple robots that can effectively cooperate with one another. Furthermore, these types of scenarios have dynamically changing environments that require the robots to have a robust and adaptive cooperation.

In such multi-robot systems, distributed intelligence is highly needed in the team whereby decisions are processed in each individual robot. Biological systems are examples of information processing that are capable of solving problems in living organisms in a distributed manner. Some of these biological systems have neural networks in the brain that are capable of processing information through impulses at the synapses, genetic systems in constructing the organism genes and immune systems that protect and maintain the homeostatic state of the living organism.

These salient characteristics lead to the advances in research on Artificial Immune Systems (AIS) and their applications in engineering fields particularly in the Multi-Robot Systems (MRS) domain [1]. Moreover, situations faced by multi-robot systems require real-time processing and response, which are the apparent features of the biological immune systems. Therefore, this research proposes an immune system based algorithm to achieve cooperative behaviour in a team of robots. Using the algorithm inspired by immune network theory, the robots can have the capability for performing their mission in an unstable environment.

The immune system is a system that eliminates foreign substances from an organism's body. The foreign substances such as bacteria, fungi, or virus cells that can harm the host are called pathogens. When such substance activates an immune response, it is called antigen, which stimulates the system's antibody generation. Each antigen has a unique set of identification on its surface called epitope. This antigenic determinant is where the host's antibodies would attach to, by using its paratope (see Figure 1). Antibodies are cells in the immune system that kill antigens in order to maintain the host homeostatic state, i.e. balancing the body's health status. Prominent character-

Multi-Robot Cooperation Inspired by Immune Systems (cont.)

istics of the immune system is that there is no central control of the host's cells in fighting antigens that invade the host, and the system's adaptability in responding to various kind of antigens. The related cells cooperatively merge at the affected area and produce appropriate antibodies for that particular situation. This phase of immune response exhibits cooperative behaviour of the related cells.

Studies in immunology have showed that antibodies are not isolated but they communicate with each other. Each type of antibody has its specific idiotope, an antigen determinant as shown in Figure 1. Jerne proposed the Idiotypic Network Hypothesis which views the immune system as a closed system consisting of interaction of various lymphocytes (B cells that mainly produce antibodies to fight specific antigens) [2]. Referring to Figure 1, idiotope of antibody i stimulates antibody i+1 through its paratope. Antibody i+1 views that idiotope (belonging to antibody i) simultaneously as an antigen. Thus, antibody i is suppressed by antibody i+1. These mutual stimulation and suppression chains between antibodies form a controlling mechanism for the immune response [3]. This large-scale closed system interaction is the main mechanism that can be used for cooperation of multi-robot systems.

The relationship of the immune systems with multi-robot systems is evident where obstacles, robots and their responses are antigens, B cells and antibodies respectively.

Table 1 lists the parallel of MRS and immune systems terminologies.

Immune network theory as described earlier is suitable as a basis for emulating cooperative behaviour in a multi-robot environment. Obviously, in immune network the processing of information is done in real-time and in a distributed manner, as what a multi-robot system requires. The objectives of this study are to propose an immune-inspired approach on cooperation, and to establish an adaptive cooperation algorithm in heterogeneous robot teams. This is because the application areas would inevitably require multiple robots of different specifications and capabilities. Adaptive cooperation entails that the multi-robot teams would be able to withstand failures that might occur in the teams. Furthermore, the effect of the proposed approach in terms of efficiency in cooperation is also being studied.

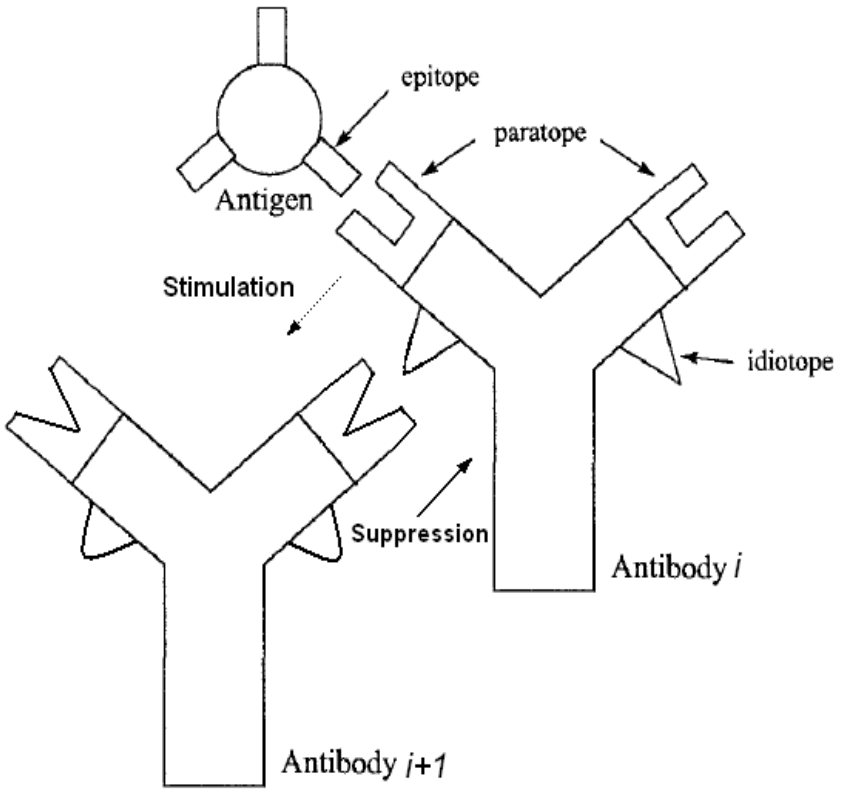

Figure 1: Antigen-antibody binding and Jerne's Idiotypic Network Theory.

Multi-Robot Cooperation Inspired by Immune Systems (cont.)

Currently we are using the Player/Stage simulation platform on a Fedora Core 6 Linux OS to test the proposed algorithm [4]. The next phase is to transfer the simulation experiment onto mobile robots for further investigations. In this research, we argue that the immune network is a suitable analogy for multi-robot cooperation problems. Experimental data will ensue to validate the applicability and efficiency of the proposed algorithm. The study would continue in this area, whereby the robots' tasks will be appropriately changed to suit other application domains.

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Sazalinsyah Razali, Qinggang Meng, Shuang-Hua Yang
Department of Computer Science
Loughborough University
S.Razali@lboro.ac.uk

Immune Systems	Multi-Robot Systems
B cell	Robot
Antigen	Robot's Environment
Antibody	Robot's action
Immune network	Robots communication
Stimulus	Adequate stimulation among robots
Suppression	Inadequate stimulus from robots

Table 1: Relationship between Immune Systems and Multi-Robot Systems.

"What was that you said?"
Embodied Conversational Agents for Robust SLDSs

Human-Machine Interaction (HMI) theorists have long envisioned artificial systems with which human beings could interact, and even relate to, in ways analogous in form (if not entirely in concept or essence) to how they interact with, and relate to, each other. In short, the world of HMI has been increasingly playing with the idea of natural interaction. Accordingly, discussions have developed, and are still developing, concerning design goals and the related design principles. For instance, what makes any particular sort of interaction natural, and how can we measure its degree of naturalness? And more fundamentally, as not only designers but also philosophers have asked, is it appropriate (i.e., is it an appropriate design goal), or in what ways and for what purposes, if any, can it be beneficial, for people to interact with an artificial system in as similar as possible a manner as how we interact with other people? How close does this come to personifying a thing, what are the desirable and undesirable, conceptual and practical consequences of it, and does it even make sense to do so?

Whether such an assertion is true or not, what we certainly are seeing today is a proliferation of studies that explore a variety of approaches to human-like HMI, dealing with different aspects of human interaction, most notably spoken dialogue (with its four main elements: speech recognition, speech generation, dialogue design, and the pseudo-cognitive processes to "understand" the messages received and to generate meaningful communication goals and their associated messages), body movement and facial gestures (exploiting the visual channel), manipulation of physical objects (touch or haptic interaction), and physical presence (e.g., human-like robots). In the specific case of spoken dialogue systems, the technologies are now mature enough to allow the creation of trustworthy applications. However, "robustness" problems still arise in concrete limited dialogue systems due to the fact that there are many error sources that may cause the system to perform poorly [1]. At the same time, embodied conversational agents (ECAs) [2] are gaining prominence in HCI systems, since they make for more user-friendly applications while increasing communication effectiveness. What we propose is to look into the effects of adding an ECA onto a concrete spoken dialogue system, and the potential benefits that can be derived from this, particularly regarding various difficult dialogue situations that have been identified by various leading authors in the field [3,4], and some we ourselves suggest. [5]

Embodied conversational agents offer the possibility to combine several communication modes such as speech and gestures, making it possible, in theory, to create interfaces with which human-machine interaction is much more natural and comfortable. Some of the situations in which a conversational agent could have a positive effect are the following:

- Turn management: Here the body language and expressiveness of agents could be exploited to help regulate the flow of the dialogue [6]. Usability experimental analysis on how the facial feedback provided by avatars can make turn-taking smoother in the COMIC multimodal dialogue system has been presented in [7].

- Error recovery: The process of recognition-error recovery typically leads to a certain degree of user frustration. In fact, once an error occurs it is common to enter an error spiral, because as the user becomes increasingly frustrated, her frustration leads to more recognition errors, making the situation worse. ECAs may help to limit such feelings of frustration and by so doing make error recovery more effective [8].

- User confusion: A common problem in dialogue systems is that the user isn't sure what the system is doing and whether or not the dialogue process is working normally [9]. This sometimes leads the dialogue to error states that could be avoided. The expressive capacity of ECAs could be used to help the user keep track of what stage the dialogue is in (i.e., what the system is doing and expecting from the user).

Our research framework, comprising a dialogue and ECA behaviour scheme, and an experimental framework, has been designed with these typical spoken dialogue system problems in mind, so that we may study the effect of an ECA in a variety of dialogue situations. Our goal with our ongoing work is to contribute to building a body of knowledge on how well ECAs can work in improving HMI parameters and user satisfaction, and to gaining insight on the characteristics ECAs should have in order to produce such improvements. Research in these areas is still in early days, and the dimensions involved and parameters to control are still only vaguely defined, so slow and painstaking trial-and-error searching for answers is central.

With respect to the evaluation scheme, our approach is to combine system and interaction performance and event data registered automatically with user's responses to questionnaires. It has been inspired by Möller [10] and PARADISE [11]. What we have done is to follow the ITU P.851 recommendation [12] on questionnaire design for the subjective assessments, and Möller's objective parameters [13] for quantifying the system and interaction performance and event data. To evaluate our system, we have decided to expand these previous works. Hence we include dimensions (in the form of sets o questions) that we have seen appropriate for evaluating user perceptions related to the ECA. At this point, and leaning on those previous references, we are trying to develop a reasonable conceptual scheme which is focused on three classes of factors that may affect acceptability in our evaluation frame: Usefulness, Likeability and Rejection factors. Finally, an open question in our future work: Which is the contribution of an ECA in the quality of a system? Is it possible to measure it using standardize methods?

"What was that you said?" (cont.)

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Beatriz Mencía, Alvaro Trapote and David Pardo
Signal Systems and Radiocommunications Department
Universidad Politécnica de Madrid
Spain
Email: beatriz@gaps.ssr.upm.es

Learning to Rank Order and its Applications

Introduction

Rank ordering is a vast area of research. Its aim is to obtain a list of instances created according to the presence (or absence) of some desirable characteristics. Ordering of data can reveal different types of hidden information and different levels of dependency in data than class membership of data. Rankings are very intuitive sources of information and support decision-making on an everyday basis.

Learning to order is a machine learning paradigm that aims to construct ordering functions that order alternatives in an optimal way.

Background

Methodologies and techniques employed in rank ordering depend on its applications and types of available information about the data to be rank ordered.

In [1] the problem of ranking based on the information about pairwise dependencies (indicating which instance of a given pair is to be ranked above the other one) is discussed. Such information is called "preference judgement". It should be noted that pairwise dependencies within the data may not always be available.

In [4] the approach presented is a mixture of various data analysis techniques. The aim of the presented model is to predict the variable of ordinal scale for each given instance. This task is similar to the classification problem, however different classes have different levels of similarity between each other, i.e. one class contains the instances which are the most relevant to a given subject, one contains those which are the least relevant, and the middle classes may be higher or lower in such "ranking". The presented methodology derives from the large margin classifiers methodology. The drawback of the model is that it does not provide any ranking within a single class and cannot identify the top k ranks, depriving the user of important information.

Ordering is a useful technique supporting the design of Bayesian networks as rank ordering the features "restricts the number of the structures to be learnt" [3]. It is also applied in industry, for example to create preference ranking of industrial products. In [2] the technique for creating a global ranking based on partial ranking (each of them taking into account only one feature of a product) is discussed.

Distance-based ordering

The distance-based ranking is created according to similarities between a given

Learning to Rank Order (cont.)

query instance and each element of a set to be rank ordered. The similarity between instances is measured with the use of distance functions (metrics). The choice of a proper metric is crucial for the performance of the ranking algorithm.

Let $X=\{x_1, x_2, \ldots, x_n\} \subset R^n$ be a set to be rank ordered, let $P \in R^n$ be a query instance and let $r^a = \langle r^a_1, r^a_2, \ldots, r^a_m \rangle$ be the actual ranking of the elements of (with r^a_i representing the rank label of the instance x_i). The optimal metric $f : R^n \times R^n \to R$ satisfies the following condition:

$$\forall_{i,j<m} \quad r_i^a < r_j^a \implies f(p, x_i) < f(p, x_j)$$

Metric learning for distance-based ordering

Metric learning for distance-based ordering can be conducted if the training set $T \subset R^n$ with given actual rank labels r^a is available. Our hypothesis is that the ordering efficiency can be improved if the problem of metric learning is reformulated as a search of a transformation $H: R^n \to Y$ (for example, projection into higher dimensional space) and a distance function $f^* : Y \times Y \to R$ such that $\forall_{i,j<m} \quad r_i^a < r_j^a \implies f^*(H(p), H(x_i)) < f^*(H(p), H(x_j))$ where $T = \{x_a, x_2, \ldots, x_m\} \subset R^n$ is a training dataset. The step of projecting the data into higher dimensional space aims at providing better separability of the data. The problem arising with the projection is to find the appropriate space and the mapping. This difficulty can be overcome with the use of kernel functions as in Vapnik's Support Vector Machines [5,6], which allows the user not to know the higher dimensional space explicitly.

Initial experiments

Initial experiments involved training attribute weighting of weighted Euclidean distance. Distance-based ranking was used as a basis for features estimation. Due to the complexity of the optimisation problem, a genetic algorithm has been used to search for the weighting. The results were presented at the SGAI Conference in Cambridge on December 2008.

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Maria Dobrska, PhD student
Supervisors: Dr Hui Wang, Mr William Blackburn
School of Computing and Mathematics
University of Ulster at Jordanstown
BT37 0QB, Northern Ireland, UK
dobrska-m@ulster.ac.uk

Conference Report: The Fourth Conference on Interdisciplinary Musicology (CIM08)

Why should a report on a musicology conference be of interest to the readership of AISB? Well this unusual conference provided an excellent opportunity to present work on simulating intelligent musical behaviour and cognition, with a strong emphasis on collaboration across disciplines.

This series of annual conferences, the brainchild of Richard Parncutt, aims to encourage an interdisciplinary approach to the study of music in academia. There were a healthy number of sessions devoted to cognitive, computational, and artificial intelligence-based approaches to music, showing a keen current level of interest in such research.

Collaborative work involving people from both arts and science backgrounds can be of substantial benefit, as there is a broader depth of knowledge to be drawn upon to base the work. A cross-disciplinary approach also helps balance the priorities of each discipline, for example, placing emphasis on both the musical validity of a system and the methodology that the system implements. This is as opposed to focusing on one way of thinking at the expense of the other – a common pitfall when working across the arts/science boundary.

To help foster interdisciplinary collaborations, there is a particular requirement in the call for papers for CIM conferences: each submission must be from at least two authors, each representing different

Fourth Conference on Interdisciplinary Musicology (cont.)

academic disciplines. The most common combinations of disciplines included computing and music or music psychology. More uncommon combinations also proved fruitful, for example the work by Reynaud Meric and Makis Solomos in using philosophical approaches to aesthetics to analyse contemporary music.

Another unusual aspect of this conference series is that keynote speakers are not arranged in advance, but are selected from the best of the submissions received. Michel Vallières gave the opening keynote, on a paper co-authored with Daphne Tan, William E. Caplin, Joseph Shenker and Stephen McAdams. This entertaining talk examined how people perceive the structure of musical themes, in comparison to music theoretical ideas of how parameters such as tempo or harmonic progression help to identify the beginning, middle and end of a theme.

Vallières discussed empirical experiments where the participants were asked to judge what the temporal function of various musical extracts was: as 'beginning', 'middle' or 'end' segments. The results gave insights into how useful each musical parameter was in determining these roles. In particular, Vallières highlighted how the use of these parameters varied according to the musical expertise of the participant.

In the session on Artificial Intelligence perspectives, Alan Marsden and Geraint Wiggins described their use of AI search techniques in computational music analysis. The particular form of analysis being investigated is Schenkerian analysis: a reductionist technique used to identify the underlying structure of a piece of music.

Successful Schenkerian analysis involves a high degree of subjective evaluation. Finding the appropriate analysis for a piece of music is not just a case of following the right steps in the right order, but requires insight and musical training; moreover the number of potential analyses increases rapidly with the length of the piece. Hence Marsden and Wiggins have employed a number of search methods; their best results so far are from an A* best-first algorithm, using Marsden's heuristics for Schenkerian analysis to guide the search.

The authors defended their choice of using computational search techniques as being a tried and tested way of finding solutions to a problem as quickly as possible. This contrasted well with a later presentation by Panayotis Mavromatis that utilised a more cognitive approach, to model how humans find solutions to musical problems.

Although Marsden and Wiggins' work is an ongoing project rather than finalised work, the preliminary results look promising. It will be interesting to see how this project progresses in the future.

Emergence in music is of particular interest to me, so a paper presented by Makis Solomos and Agostino Di Scipio captured my attention. Exploring how we construct our own interpretation of music as we listen to it, the authors suggest that music is what emerges during a performance. In interacting with the performance, passively or actively, the audience contributes to the music, as does the environment where the music is performed. The authors are hinting at (but not directly mentioning) the embodiment of music in an interactive environment.

The fascinating angle taken in this talk was the interaction between composer (Di Scipio) and musicologist (Solomos). Di Scipio composes with musical emergence in mind; Solomos analyses Di Scipio's music retrospectively. This talk effectively became a discussion between the two authors as to how their ideas converge. Although they posed many more questions than they answered, the presentation was highly thought provoking.

Combining so many disciplines under the banner of one conference leads to some novel and exciting ideas. The challenges in presenting work to such a varied audience were generally well met. The inclusion of research on non-Western-classical music, such as Byzantine and Flamenco music, gave the conference a more international and diverse feel. On the whole the paper standard was high and the ethos of the conference well subscribed to.

At the recent International Computer Music Conference there was an impromptu discussion about the challenges associated with combining expertise across different disciplines. Conferences such as CIM may prove to have much value in developing cross-disciplinary work and encouraging wider collaboration. The next CIM conference will be in Paris, in 2009.

Anna Jordanous
Music Informatics Centre/Creative Systems Lab
University of Sussex

Conference Report: European Conference on Computing and Philosophy

Artificial intelligence has since its inception stood at the very threshold between philosophy and computing, and the European Computing and Philosophy (ECAPS) conference serves as a forum for AI and computer science researchers explicitly interested in philosophy. A new emerging trend at this conference was the attempt to bridge the chasm between the study of computing in "continental" postmodern thought and the traditionally "Anglo-American" analytic approach. First brought to the attention of many by the infamous Searle-Derrida debates over the nature of language, this debate has now spread to computing, as witnessed at ECAPS in Marseilles this June.

While ECAPS tends to be dominated by practitioners from backgrounds in AI and analytic philosophy, this year there was a special track on "IT, Cultural Diversity and Technoscience Studies" in order to bring more postmodern theorists from critical theory and discourse studies into the fold. While analytic philosophy is often decried as lacking an understanding of the power relations in the wider social context, "postmodern discourse" has widely been criticized as being simultaneously pedantic and ridden with impenetrable jargon. The initial contact between these two factions at the conference was rough indeed. Some papers fulfilled these stereotypes; the presentation by Diana Lengersdorf of "Programmers at Work: Reconstructing Social Practices in an Internet Agency" dressed the obvious point that male-dominated programming firms are sexist in postmodern cant, yet other papers like Philippe Lemoisson's "Sharing Knowledge in the the 3W paradigm; how do we erect theories above the swamp of our brains?" managed to blend neuroscience with Karl Popper in order to create something that verged on an equivalent of early Wittgenstein trying to reconstruct the Tracatus on neurons rather than logic. My own presentation on the "The Dialectics of Digital Collectivity" which inspected the none-too-subtle connection between the idea of universality in Hegel and Berners-Lee's usage of "Universal Resource Identifiers" (later changed to "Uniform") on the Web outraged the chairs, Margit Pohl and Jutta Weber, who nearly threw copies of Foucault and Adorno at me, although as someone who both read Hegel under Jameson and works with Berners-Lee, I only could respond they had a depressive and incorrect reading of Hegel.

Yet an apparent bridge between the two disciplines was found on a subject of continual interest to both AI researchers: phenomenology - the study of introspectively accessible phenomenon, some of which are often referred to by those in the analytic tradition as 'qualia.' While two presentations, the keynote of Igor Aleksander on "Virtual Phenomenology" as well as David Perez Chico's paper on "What phenomenological aspects of the problem of the other minds teach us" and "Towards Intelligent Machines Grounded on Formal Phenomenology" by Jean Sallantin and others, were well-received, by far and away the paper of most interest was the argument put forward by Darren Abramson on "Computational Functionalism, Phenomenology, and Externalism." Abramson takes on three theses close to the heart of AI, namely that " qualitative states supervene on computational functional states; qualitative states supervene on local physical states; and, some objects compute, and others do not." He then argued that if this is the case, and functional states are partially determined by external states, then therefore qualitative states supervene on both internal and external states, and so qualitative phenomenological states like qualia depend on more than local physical states, and so the second thesis must be rejected. In this manner, a radical externalism co-opts even the last lonely stronghold of dualism, the hard problem of consciousness itself.

One new research area that emerged was the philosophical study of many "Web 2.0" phenomenon. This area of interest was brought up in many ways. Luc-Laurent Salvador's "Neither Wikipedia Nor Knol" brought up the point that progress in science crucially depend technologically-mediated collective practice in blogs and wikis, even though these "publishing" forms are given little credit in academia. Jean Sallantin, the chair of ECAPS, attempted to remedy this by deploying the innovative "Wiki-Debate" website that let conference participants leave comments and indicate likelihood of attendance to particular presentations online—and this was in turn used to optimize the order of presentations, so that multiple popular presentations were not scheduled simultaneously. The most innovative paper was Edith Felix's "Web 2.0 and Heidegger's Gestell," which brought an explicitly Heideggerian analysis to the Web. Heidegger's influence on AI has historically been via Dreyfus, which has led most AI researchers to ignore the fact that for Heidegger the "enframing" caused by the technology and concepts of a culture - the "Gestell" - is the "determinant of human conditions." This point is brought to the forefront with the Web 2.0, for the "writing of contents and sharing" leads to the "creation of groups based on communities of interests," yet if these are formed by companies like Google, to what extent does this supposedly "free" creation bind its creators to the imperative that all knowledge must be ready-at-hand so as to have commerical value? On the other hand, does not the Web 2.0 engender a vast multiplication of communities that lets every individual find their "Geschick" or "unique fate" moreso than the isolated German village that Heidegger romanticizes? It is precisely this thinking that are could lay some of the groundwork for a new philosophy for the new Web. While quality varied immensely at ECAPS, the few high quality papers, ones that use computing as an vehicle to create and reinvigorate concepts, makes the conference worthwhile.

Harry Halpin
University of Edinburgh
H.Halpin@ed.ac.uk

Society News

AISB Convention

The 2009 AISB Convention will be held at Heriot-Watt University in Edinburgh between 6th-9th April.

This will consist of the following symposia:

- Killer Robots or Friendly Fridges: The Social Understanding of Artificial Intelligence
- The 2nd Swarm Intelligence Algorithms and Applications Symposium (SIAAS-09)
- The Social Networks and Multi-Agent Systems Symposium
- Affective Bodily Expression
- Persuasive Technology and Digital Behaviour Intervention
- Evolutionary Algorithms for the Design and Understanding of Complex Systems
- New Frontiers in Human-Robot Interaction
- 2nd Perada Workshop on Pervasive Adaptation
- Behaviour Regulation in Multi-Agent Systems
- Affective Mental States Symposium—From Emotion to Reason
- AI and Games
- PERSIST Workshop on Intelligent Pervasive Environments
- Workshop on Matching and Meaning
- 2nd AISB Symposium on Computing and Philosophy

In addition there will be a debate on alternatives to the Turing Test, the society general meeting, and social events. More details can be found at:

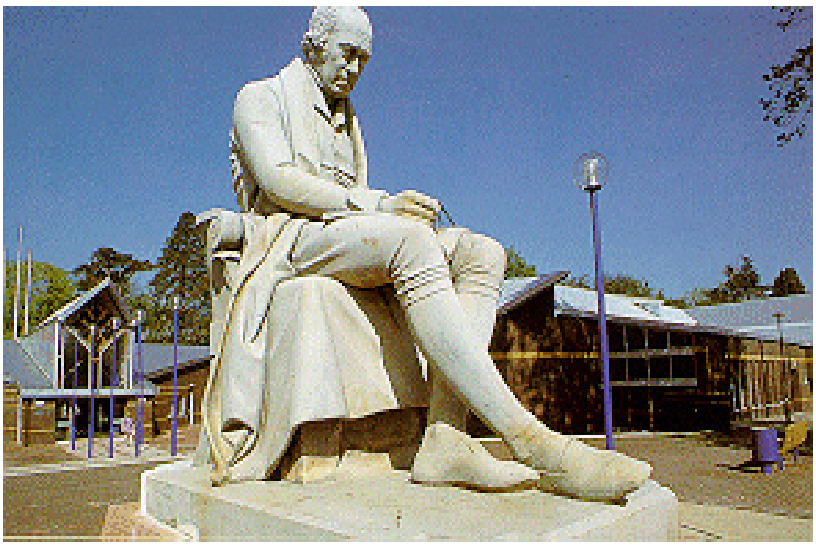
http://www.aisb.org.uk/convention/aisb09/index.php

Vice-Chair Election

Following a recent election within the committee, Mark Bishop has been elected as Vice-Chair of the society.

Video Competition

The AISB is holding a competition for short videos that that will contribute to the public understanding of any aspect of the area known as Artificial Intelligence. The video material should be in English, of three minutes maximum duration, and available online. There will be three prizes. Submissions are due by the 15th March 2009, and full details can be found online at:
http://www.aisb.org.uk/publicunderstanding/video_competition.shtml



Heriot-Watt University

Fr. Hacker's Guide for the Young AI Researcher

Cognitive Divinity Programme
Institute of Applied Epistemology

The Life of A. Hacker

6. Immense International Impact

Towards the end of the 80s, the commercial arm of the Cognitive Divinity Programme began to develop a series of products we collectively christened **WWW™** (**W**orship **W**ithout **W**orries). We digitised a large number of religious tracts and holy books, drawn from across the World's faiths, and cross-related them with hypertext links. We found a ready market among priests of all religions as an aid to both writing sermons and denouncing the contradictions in rival religions. In 1990, we got an unexpected request from a researcher at CERN to adapt this technology for linking together scientific papers and data. CERN's Dr. Timberlee then developed **WWW™** into a general-purpose document-linking tool, renamed it the World Wide Web and, in a now familiar pattern, claimed all the credit for transforming the nature of information retrieval.

By the mid 90s, the success of our **FETISH™** (**F**aith **E**xpounded, **T**heology **I**nterpreted and **S**pirituality **H**elped) idol had blossomed into the instrumented house: **DOGMA™** (**D**octrinal **O**bligations **G**overned & **M**onitored for **A**dherence). Programmed with the tenets of your religion, **DOGMA™** monitors your behaviour and insists on your obedience to them. For instance, suppose you are required to eat brussels sprouts on Sundays: your fridge will monitor your sprout store, ordering more if stocks run low; your oven will ensure that you cook them on Sundays; and your lavatory will check that they have passed through your system. As penance for any evasion, a fine is automatically levied from your bank account, ensuring a steady income stream to the Cognitive Divinity Programme.

Undeterred by the lack of recognition for **WWW™**, we are now extending it to *The Romantic Web*. No one wants their cherished beliefs contradicted by mere facts. Fortunately, the diversity of knowledge available on The Web will support *whatever* you want to believe. Given your contention, The Romantic Web uses *Seductive Inference*™ to seek out and combine the evidence required to support it. We have already made major sales to many political parties, who are using The Romantic Web to develop evidence-based policy.

Now my autobiography is drawing to its end, we plan a new service to AISBQ readers. Agony Uncle Aloysius, will answer your most intimate AI questions or hear your most embarrassing confessions. Please address your questions to fr.hacker@yahoo.co.uk. Note that we are unable to engage in email correspondence and reserve the right to select those questions to which we will respond. All correspondence will be anonymised before publication

Fr. Aloysius Hacker

If you have lots of ideas about what we should have in the Quarterly, contact the Editor about becoming an *Editorial Board Member.*

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http://www.aisb.org.uk/aisbq/index.shtml

Want to write something?

The link above gives access to full guidelines for the submission of reviews and technical articles. Books available for AISB members to review are also listed.

The deadline for the next issue is:
9th April 2009