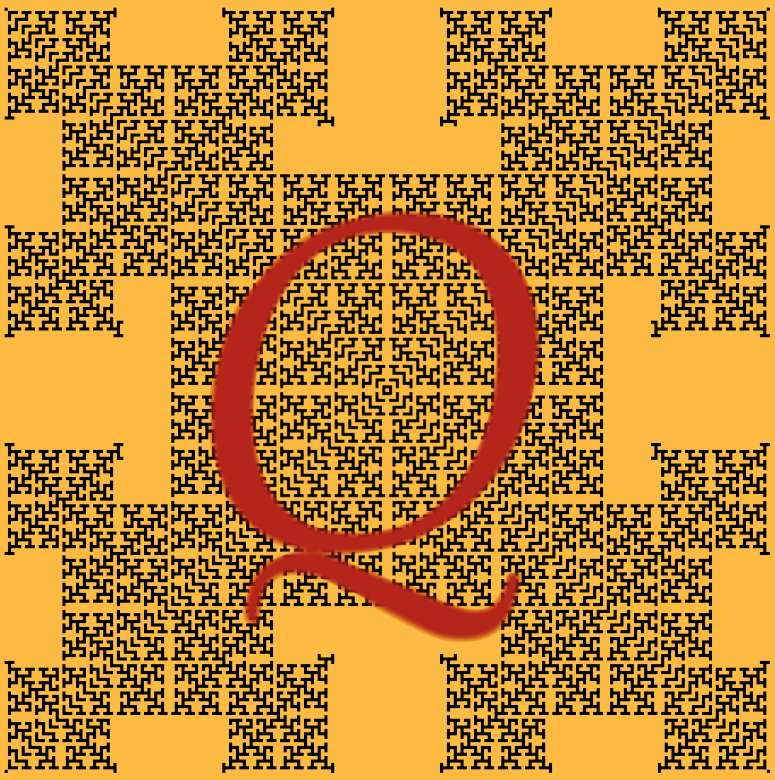
AISB Quarterly

THE NEWSLETTER OF THE SOCIETY FOR THE STUDY OF ARTIFICIAL INTELLIGENCE AND SIMULATION OF BEHAVIOUR



No. 140 January, 2015

Do you feel artistic?
Exhibit your artwork on our front covers!
Email us at aisbq15@aisb.org.uk!

Artwork by Mohammad A. Javaheri Javid (Goldsmiths, University of London)

The cover artwork is generated in cellular automata environment having two states (black and yellow) with an eight cell mapping of transition function between states in outer totalistic rules set.The cellular automata are known for their generative capabilities in creating very complex patterns in their global level, sometimes with high aesthetic qualities from simple rules at a local level.The generated pattern has emerged from a single cell as initial configuration and it closely resembles fractal patterns, however the rule generating this pattern is very simple compared to rules generating fractals.

M. A. Javaheri Javid and René te Boekhorst (2006). Cell Dormancy in Cellular Automata. In Proceedings of the *International Conference on Computational Science, LNCS 3993(3)*. Vassil N. Alexandrov, G. Dick van Albada, Peter M. A. Sloot, and Jack Dongarra (Eds.), Springer, pp. 367-374.

M. A. Javaheri Javid, M. Majid Al-Rifaie, and R. Zimmer (2014). Detecting Symmetry in Cellular Automata Generated Patterns using Swarm Intelligence. In Proceedings of *Theory and Practice of Natural Computing, LNCS 8890*. A.-H. Dediu, M. Lozano, and C. Martin-Vide (Eds.), Springer International Publishing, pp. 8394.

Editorial

On behalf of the AISB Committee, I would like to wish you a fruitful, fun and healthy 2015! A new year calls for new beginnings, and I am happy to say that the Committee is growing! Please join me in welcoming Andrew Martin, Janet Gibbs, Joel Parthemore and Kate Devlin! These are familiar names, I am sure, for most of you, as frequent contributors to the Q, organisers of workshops and of last year's Convention. Their enthusiasm will no doubt benefit greatly our community! I also would like to extend a thank you to Timothée Dubuc and Dawid Laszuk, who will be helping out with future issues of your Quarterly.

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Q140 starts with the empirical study of some anthropomorphic features that may be portrayed on robots. Christine Edwards-Leis reports on what makes us comfortable alongside robots and offers some thought on design practices.

The second article of this issue is authored by Bertie Müller, Chair of the AISB, on an account of the 24th Loebner Prize Finals 2014 at Bletchley Park. The AISB is now the official promoter of the Loebner Prize Contest– the longest-running Turing-Test competition, which started in 1991 and is based on Alan Turing's original conception of the test. Please get in touch with us if you want to host next year's contest.

We end with three reports on events from last year. Swen Gaudl gives us an account of Foundations of Digital Games, Jekaterina Novikova describes the eNTERFACE International Summer Workshop, and Davide Secchi and Martin Neumann report on a workshop they organised on Modelling Organisational Behaviour and Social Agency.

As usual, we conclude with wise words from Agony Uncle Aloysius.

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The ambition of the Quarterly has always been to be a link between all of us. It has been a tool, an outlet of great value over the years. I have been told that some of us found jobs thanks to a connection made with the Q! Others found collaborators for grant proposals, new ideas for papers, etc. Of course, the scope of the original ambition behind the Q had a particular slant in 1964, in times when twitter and email did not flood our inboxes.

Now, more than ever, however, the Q has the potential to ground our community. The main bottleneck, as was in 1964, is the struggle to find content. Our membership is growing, and now past 370 members. They all receive the Q. They all glance at its content. Most (I want to believe) even open it and go through it, at least when a few keywords in the title appeal to the eye.

Whether you are a recent PhD graduate on the look out for a job; whether you simply want to share some of your brilliant ideas; whether you have an opinion to voice about the way the world turns, I invite you to seize this opportunity, and to submit a few words for the rest of us to read. Don't be shy!

Etienne B. Roesch
Editor-in-Chief

It should look like a robot: Mental models of anthropomorphic features

by *Christine Edwards-Leis* (St Mary's University)

Abstract

Mental models were proposed by Craik (1943) to explain human-computer interaction. They are of particular interest to educational researchers, because they explain what happens when teachers and students interact with each other and with phenomena in their environment. They have been said to form the basis of all human behaviour and, as such, are simultaneously a process where they provide a means to interact in problem-solving situations and a product where they act as a storage facility to retain the knowledge from those interactions.

A longitudinal study of the mental models held by students and their teacher in an Australia Primary School affirmed the role mental model theory has to play in enabling researchers, and teachers, to understand how students engage with artefacts successfully in a problem-solving environment. The study uncovered the students' mental models of the anthropomorphic features of the robots with which they were engaging. These findings offer design implications for the development of robotic technologies for use in classrooms of the future. They may also provide guidance for the wider animatronics community. Students were able to engage successfully in problem-solving activities in robotics but their mental models indicated a clear preference for humanistic features.

Context

The purpose of the longitudinal study (March 2005–October 2006) of a teacher and her 24 students in a primary school in South-East Queensland, Australia, was to determine and analyse their mental models of teaching, learning, and assessment in robotics, an optional component of the Queensland Technology Syllabus. The study had broad aims to determine matches and mismatches of mental models and the impact, if any, on teaching, learning, and assessment. Anthropomorphism was one of the aspects of the participants' mental models of robotics that was of interest to the researcher. The results of the investigations into anthropomorphism had limited impact on the broader study's purpose. However, they offered salient data about the anthropomorphic characteristics of robots that students found relevant in their lives. This data has the potential to contribute to future design choices of those who envisage learning with such interactive technological artefacts or those who work in the animatronics field.

Theoretical background

Mental models were first theorised by Craik (1943) who was searching for a means of explaining the interactions between humans and systems. Craik initiated the use of the term, mental models, and described them as "representa-

tions in the mind of real or imaginary situations" (Craik, 1943, p. 12). He used the subsequent theory to describe how we understand, solve, and explain anticipated events. Mental models enable users of systems to explain and make predictions about the actions and reactions of those systems (Halford, 1993; Vosniado, 2002). Mental model theory has permeated many areas of human endeavour including technology (Edwards-Leis, 2007; Halford, 1993; Henderson & Tallman, 2006; Vosniado, 2002; Williamson, 1999) and language (Johnson-Laird, 1983, 1989, 2004, 2006; Merrill & Gilbert, 2008). The functional aspect of mental models enables students to explain processes, predict outcomes of those processes, and communicate their understanding to others (Edwards-Leis, 2010). Using mental model theory to determine what is happening in classrooms as students engage in problem-based learning (Edwards-Leis, 2007; Henderson & Tallman, 2006; Stripling, 1995) is a focal way of determining what, in reality, is being learned.

Methodological processes

The study of mental models, in this broader longitudinal study (Edwards-Leis, 2010), was centred within information processing theory (Kail & Bisanz, 1992; Lohman, 1989, 2000) and linked with the introspection meditating process tracing paradigm. The study followed constructs of learner-centredness and how students select, organise, and integrate new experiences with existing knowledge and the processes (Edwards-Leis, 2010) used in metacognitive activity (Mayer, 1996). It was conducted on the campus of a P-7 Primary School in South-East Queensland, Australia and the participants were aged 10 years at the commencement of the study and were 12 years old at its completion. The qualitative study used social anthropological perspectives to select, focus, simplify, abstract and transform data (Miles & Huberman, 1994) to gather a vivid picture of teaching, learning, and assessment in robotics from the perspectives of the teacher and the students.

Data collection

Data were collected from the teacher and her students over a 20 month period from individual and paired Semi-Structured and Stimulated Recall Interviews, Journals, Likert Scale Questionnaires, a Teach-Back Interview, and a Focus Group Interview (Edwards-Leis, 2010). While 24 students participated in providing data from journals and the questionnaires, four students were randomly selected to participate in the more in-depth aspects of the investigation. Data were triangulated (Burns, 2000; Miles & Huberman, 1994) to strengthen validity of analysis. Post- and pre-experience data underwent comparative analysis and, while the population was too limited to provide generalisations, the rigour and intensity of the investigations offered a "focus on the complexities and qualities in educational action and interaction that might be unattainable through the use of more standardised measures" (Burns, 2000, p. 390). In reality, data was not just triangulated – it was "multi-angulated" and offered a detailed picture of teaching, learning,

and assessment over time (Edwards-Leis, 2010). Data for the anthropomorphic aspect of the study were collected from questionnaires, journals, and semi-structured interviews; it is in-depth and offers significant information about the mental models young students hold about the artefacts teachers require them to use in problem-solving situations.

What is a robot?

Did you watch The Lord of the Rings (Jackson, 2001/2002/2003) and become a little bit uncomfortable as Gollum joined the intrepid journeymen on their trek? If you did, then you were well-targeted by the "Gollum effect" (Giles, 2007). Giles (2007) described the "Gollum effect" as an example of the phenomenon known as the "uncanny valley" (Mori, 1970) where, as a general rule, people are less troubled by a robot that is clearly a robot. When a certain realism threshold is reached, through such displays as human-like movement or vocalisation, then people exhibit unsettled reactions to the robotic creation. According to Giles (2007) this effect is what Gollum's designers, Weta Digital of Wellington, New Zealand, relied upon to create the character who was introduced in The Hobbit (Tolkien, 1937) and reappeared in the subsequent film trilogy, The Lord of the Rings (Jackson, 2001/2002/2003). They gave Gollum a human-like voice and animal-like body movements which were in the threshold that created uncomfortable responses to the character in many viewers of the film.

Why is this reaction of cognitive relevance rather than mere entertainment interest? Humans are interacting more with robots in a multitude of environments including the home, work, and recreation facilities and such human responses to robots are of increasing interest to designers who undertake their creation. Studies (Chaminade, Hodgins & Kawato, 2007; Gee, Browne & Kawamura, 2005; Hinds, Roberts & Jones, 2004; Kiesler & Goetz, 2002; Barchi, Cagliari & Giacopini, 2002) have been engineered to understand human-robot interactions and the individual reactions and interactions that are associated with strong or weak anthropomorphic features of robots. Meanwhile, the incidence of human-robot interaction is becoming more of an everyday event from medical nanotechnology to robotic scuba-divers plunging into the depths of the ocean in search of lost ships to Spielberg's AI: Artificial Intelligence (2001), a tale of an android child who was programmed to love, or Proyas' I-Robot (2004) where humanity is threatened by robotic crime. These robotic realities and fictionalisations are becoming part of the average day for children. Does this exposure create mental models that will enable the students to function effectively with the robotic experiences they will encounter in the classroom?

The anthropomorphic features a robot possesses may offer a focus for the interaction and replicate the everyday interactions humans have with each other. How humans respond to the variations of humanness of a robot's features has been the focus of many studies (Chaminade, et al., 2007; Gee et al., 2005; Kiesler & Goetz, 2002). While results indicate that, in the main,

people tend to engage more readily with a robot with humanlike appearance, Gee et al. (2005) discovered that the actual concealment of artificiality of a robot is the source of most discomfort. Kiesler and Goetz (2002) found that it was the humanistic dialogue that adversely affected people's mental models of what constituted a comfortable interaction more than their responses to the robot's humanlike physical appearance. Given this robust investigation into human/robot interaction, what would be of interest is how the participants, in this study, would perceive the relevance and importance of the appearance of the robots with whom they would be working.

The robots we *might* prefer: Pre-experience data

The first exploration by the researcher was to uncover the conceptual knowledge that demonstrated the espoused mental models of robots held by the participants. Much data was collected on a variety of issues such as the students' mental models of desirable features and their preference of working with a robot that looks, speaks, and moves like a human. The students who were to participate in the project and the study had been given no indication of the style of robots they would be using by Pamela, the teacher. At this pre-experience stage, their mental models were totally unaffected by any classroom interactions, discussions, or preparations associated with the study. When Pamela was interviewed in the pre-experience interview, she revealed that her mental model of the students' mental models of robotics would be that they would not necessarily be humanistic in appearance. This is evidenced by her comment, "I think that they have a little bit of an understanding that robots don't always necessarily look like a human being" (Pamela, Pre-Experience Interview, March 2005). She felt that their main exposure would have been "through movies and TV".

Pamela's responses to the pre-experience Likert Scale questionnaire supported her belief that she could not really have an understanding of how the students viewed robots and the necessity for humanoid features until she commenced working on the project. She "disagreed" that the students would see robots as more useful if they responded like humans and also with the proposal that students would rather interact with a robot that was humanlike in appearance. Pamela was "unsure" of the students' mental models of the usefulness of robots if they could talk like humans which, after analysis, was a perceptive response given that all students agreed with the statement in their pre-experience Likert Scale questionnaire (see Table 2). Pamela was not asked to provide any comments about facial features, eyes, ears, and mouth in her pre-experience Likert Scale questionnaire but the responses to these questions by the students provided rich data on their mental models of the anthropomorphic features of robots.

The pre-experience Likert Scale questionnaire asked specific questions about the anthropomorphic features of robots such as those shown in Table 1. The students appeared to be more inclined

to respond in the affirmative for specific anthropomorphic facial features that they would prefer a robot to have such as eyes, ears, and mouth than they were for general human looks. The item that proposes "looks like a human" does not refer specifically to facial features and may have prompted students to run mental models of robots with humanoid body features of arms, legs, and torsos.

The pre-experience, semi-structured interviews uncovered more detail with students referring specifically to a robot's appearance with responses: "It should look like a robot" and "... not exactly the same [as a human] ... but a little different". Three of the four students stated their preference for a robot to have eyes, nose, mouth, legs, arms, and two wanted hair. The other human features mentioned once by each student included fingers, face, voice, feet, teeth, and coloured face. All four students, Bree, Ellen, Jayne and Sam, who participated in the Likert Scale questionnaire, appeared to prefer a robot that had human features. The students' mental models of robots may be affected by cultural considerations (Gee et al. 2005) such as their personal experiences with television and motion pictures or it might be reflecting their mental models of "interactions" in general. Kiesler and Goetz's (2002, p. 1) study indicated that people tend to create anthropomorphic mental models "of higher animals, deities, nature, and animated objects and machines". Asking students whether or not the robot with which they will be interacting should look like a human may be the same as asking them if they thought the Easter Bunny was capable of delivering eggs!

Our cultural tendency to personalise inanimate objects, such as machines (Kiesler & Goetz, 2002), often by giving them names, may encourage the development of strong anthropomorphic mental models when we interact with robots and androids. This may be an example of instance-based cognitive processing which Hintzman (1986) saw as necessary to integrate new knowledge and experiences so that a productive interaction took place. Such an interaction would lead to the formation of a functional mental model. The different images necessary for exemplar-based processing (Linville, Fischer & Salovey, 1989) occur where separate images are linked or joined to create a consistent or acceptable anthropomorphic mental model (Keisler & Goetz, 2002). Keisler and Goetz (2002, p. 1) gave a "cheerful robot" as an example of this type of processing where a "life-like robot that tells a joke could activate ... exemplars of ... machines and ... humorous people". The "humanlikeness" of a robot through either its behaviour or appearance can, they believe, "lead to a mental model that does not deny the technology in the machine but that also incorporates anthropomorphic features into it" (Keisler & Goetz, 2002, p. 2).

It seems that if students are given a preference, as suggested in the pre-experience Likert Scale questionnaire, then the predilection is for a robot that is humanlike in appearance. While no evidence was sought to determine if these espoused mental models had been formed from interactions or experiences from television or motion pictures as suggested by the teacher

I would rather interact with a robot that..					
	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Q. 20 ..looks like a human	4	8	9	3	1
Q. 21 ..has eyes	15	7	2	0	0
Q. 22 ..has ears	11	12	1	0	0
Q. 23 ..has a mouth	14	9	1	0	0

Table 1: Students responses to Likert Scale anthropomorphic questions.

Pamela, the students have, nonetheless, created mental models that may reflect such a socio-cultural influence (Vygotsky, 1978). The students' espoused mental model of the mechanical nature of the robot, though, is clearly shown by two of the students interviewed. As one interviewee participant, Bree, stated a robot has "memory chips" to help it move. Another, Sam, referred to robots as "artificial intelligence" which may indicate his viewing of the movie AI: Artificial Intelligence (Spielberg, 2001) released prior to the time of the research.

Question 22 in the pre-experience Likert Scale questionnaire asked whether students would rather interact with a robot that had ears (see Table 1). There was a response of 23/24 in the affirmative with one student unsure. Given the responses from the students in the interviews, one may wonder if this result indicates that the students' initial mental models of facial features do not include ears unless a specific prompt is given. During the semi-structured interviews the four students' responses did not propose ears as part of the desired facial features but all (N=4/4) affirmed that we "tell" robots instructions. Half (N=2/4) said that robots do what you "say" (Ellen) or can "talk" (Jayne) with you. Sam stated that robots have a "chip that helps them listen" and Bree said that we put information "into their heads". Robots needed to "talk" (Jayne) and "see" (Bree) but only one student, Ellen, included "ears" as a necessary feature that would enable a robot to hear or listen once asked how robots would do that–in other words, given a specific prompt.

One of the components that can be manipulated by digital/robotic animators is the voice that their creation is given. The student participants were asked if they agreed with the statement: "Robots are more useful if they can talk to you" in the pre-experience Likert Scale questionnaire and the responses are shown in Table 2.

Seventeen students strongly agreed and six agreed with the statement (Table 2). One child, a girl called Tani (pseudonym), was unsure whether the ability to speak made a robot more useful. Tani's espoused mental model, as indicated by her journal response on the usefulness of robots, included the concepts of "moving, walking and talking" and being able to be "programmed" to "do everything you tell them". Her re-

Q. 19: Robots are more useful if they can talk to you.					
	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
Responses	17	6	1	0	0

Table 2: Students responses to Likert Scale question about the usefulness of robots.

sponse to the Likert Scale questionnaire did not seem to match that which she provided in her journal and this may indicate that there was some uncertainty, on her part, about the context in which "talking" is useful. However, the general affirmative response from the group would seem to indicate that the students' espoused mental models included the usefulness of robots being able to talk to humans. The responses in the pre-experience investigations provided some interesting data from which to make comparison six months later when the post-experience data was collected.

The robots we prefer–now! Post-experience

The robots that the students constructed and programmed during the learning experience had no human characteristics so there was no concealment of their artificiality that might cause any perceived discomfort (Gee et al., 2005). The students' espoused mental models of anthropomorphic issues, which indicated a preference for human characteristics on robots, did not appear to discourage them from participating in the activities to construct and program their robots which were made from a Lego™ "brick" with attached motors, wheels, and sensors. The robot made from Lego™ seemed far removed from the robots children might have seen on television programs, in commercials, and in feature films.

Pamela's espoused mental model had indicated uncertainty about whether or not students were concerned with how a robot looked. Her reflective mental model altered considerably because in the post-experience Likert Scale questionnaire she responded with a strong positive to Item 19: "Students would rather interact with a robot that is humanlike in appearance." Her espoused mental model was interesting, but predictable, when compared to those of the students who had responded positively in the pre-experience Likert Scale questionnaires about this item. Pamela's uncertainty of their mental models of anthropomorphic issues would be unsurprising until she had the opportunity to observe their interactions with the equipment and with each other. Her espoused mental model may have included some doubt as to the students' concepts of robots and their functionality, but this doubt was removed as she worked with the students during the course of the learning experience. Pamela was not requested to respond to any items on the post-experience Likert Scale questionnaire that included personal anthropomorphic considerations, but her responses to such items con-

cerning the students' mental models continued to be of interest as a reflection of her increasing knowledge of the students with whom she interacted.

The students' post-experience Likert Scale questionnaire repeated the questions about the anthropomorphic features of robots from the pre-experience questionnaire. There was a slight movement toward the negative in all three items that addressed facial features of robots – eyes, ears, and mouth. Graphs illustrating the change in responses are shown in Figures 1, 2, and 3 below. In each of the items there has been an evident shift to the negative which indicated that the students were less concerned with the inclusion of human facial features or characteristics in their reflective mental models than they had been at the beginning of the experience. The robots they were working with did not have any human features yet were able to follow the commands that the students had designed and programmed. While the efficacy of mental models held by individuals may be seen as the basis of success or failure (Henderson & Tallman, 2006) in undertaking a problem-solving activity, the experience of success and/or failure itself can be powerful motivator to actually alter inefficacious mental models. It seems that several students have altered their espoused mental models in these areas and the responses to the question of the preference for a robot to have a mouth (see Figure 3) show the most distinct move to the negative. This could be attributed to the fact that the ability to communicate verbally is less of an issue than one of seeing what there is to do or where one is going (see Figure 1) and the ability to listen to instructions (see Figure 2).

Digging deeper

While mental models are idiosyncratic, the predominance of a shared response indicates that some mental models are distributed. The students in this case were not negotiating a transitory, shared model (Anderson, Howe & Tolmie, 1996). However, Vygotskian theory (1978) may inform analysis that concludes that the construction of this particular mental model is a result of a shared experience either in the robotics classroom or by other experiences with media. The responses to investigations on anthropomorphic issues in the post-experience semi-structured interviews uncovered more detail and some interesting issues about such human characteristics in robots.

Bree, Ellen, Jayne and Sam were asked about their preferences about anthropomorphic issues in order to provide an opportunity to extrapolate on their mental models and to triangulate data obtained from the Likert Scale questionnaires and journals. There were notable differences in the responses to questions about what human characteristics, if any, the students preferred a robot that they were interacting with to have.

Jayne summed up their individual responses by stating that "there's no normal robot"; indicating that there are diverse robotic designs and that "they can look a bit like anything" (Jayne, Post-Experience Interview, September, 2005). While Jayne continued to express a reflective mental model that contained an understanding that robots

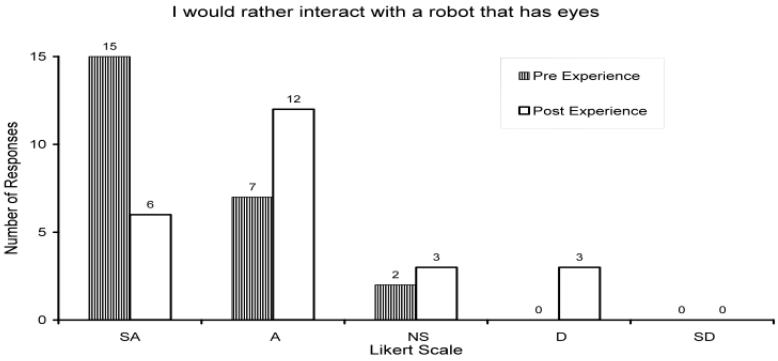

Figure 1: Comparison of responses to Item 21 on Pre- and Post-Likert Scale questionnaire about interacting with robots that have a eyes.

were "different to humans", she believed that "some of them act like humans" because they are "trained" to do so. However, she would like her robot to have "feelings" and be able to "talk" so she would know what it wants to do next. Her inclusion of the ability to feel was so that she would know when it was "happy and sad"; a clear inclusion of human emotional characteristics. Jayne's responses in the Likert Scale questionnaire to items including eyes, ears, and mouth (see Figures 1, 2, and 3) were all in the negative indicating that she felt that these anthropomorphic features were unnecessary.

Ellen's responses in her post-experience, semi-structured interview supported her responses on the Likert Scale questionnaire. While she disagreed with the need for a robot to have a mouth, she did agree that she would rather interact with one that had eyes and ears. She stated that robots "don't really have to look like what you expect because some robots do different things" but she would like for them "to see and hear things because ... if it can hear, you might be able to tell it something and it might be able to follow that instruction" (Ellen, Post-Experience Interview, September 2005). If it could not see, "it might run into a few walls". Ellen differentiated some tasks that robots do, including washing dishes and washing clothes. Robots do not do both because "it [the clothes washer] might break the plates". This differentiation indicates her reflective mental model is developing more expert viewpoints that discriminate a designated functionality of a robot and the irrelevance of its appearance to complete those tasks. Beliefs can influence a student's thinking (Szabo, 1998) and teachers need to recognise that the authority of viewpoints may influence an individual's ability to effectively incorporate new information into the mental models that are required to

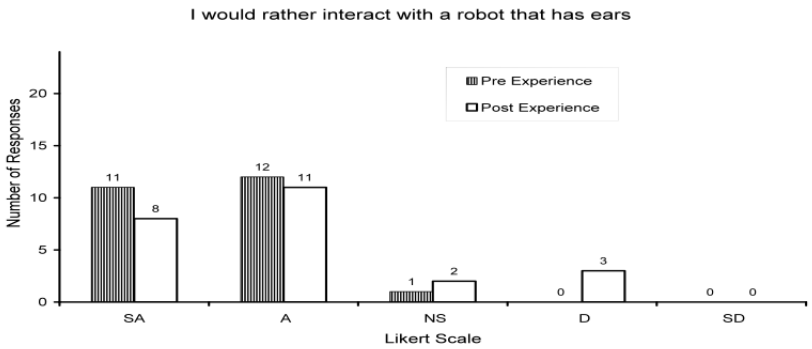

Figure 2: Comparison of responses to Item 22 on Pre- and Post-Likert Scale questionnaire about interacting with robots that have ears.

interact effectively in a given domain.

Sam's reflective mental models on robots and what they do had developed from his exposure to media and personal experience and displayed more connectedness of such understandings (Stripling, 1995). He agreed that he would prefer to interact with robots that had eyes, ears, and mouths in his responses on the Likert Scale questionnaire. These positive responses were not repeated in his semi-structured interview where he said that a robot's appearance would "depend [on] what they're supposed to be for" (Sam, Post-Experience Interview, September 2005). This statement indicated the incorporation of propositional knowledge (Johnson-Laird, Girotto, & Legrenzi, 1998; Preece, Rogers, Sharp, Benyon, Holland, & Carey, 1994; Reddish, 1994) in Sam's reflective mental model. He had seen a robot in a television program that was "just a flat piece of metal ... like a rectangle with tracks on it" so he was aware that functionality informed design. Sam was also interested in creating robots that could "drag race" and he had been working in the robotics laboratory to develop a robot that would do that. One of the human characteristics that he spoke about in the interview that would assist in his quest for a drag racing robot was the need for "common sense" as this would allow the robot to "overrun the program" if it was not going long enough to win the race; again an example of his incorporation of propositional knowledge in his reflective mental model.

Bree was the one student interviewed in the post-experience, semi-structured interviews whose Likert Scale responses to the anthropomorphic items were strongly positive. Her clearly-expressed need to have human characteristics on the robots with which she interacted was repeated in the post-experience interview, where she wanted her robot to have human characteristics so she

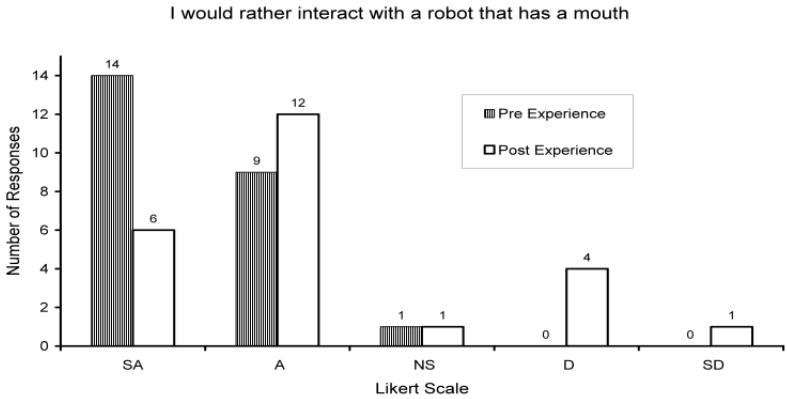

Figure 3: Comparison of responses to Item 23 on Pre- and Post-Likert Scale questionnaire about interacting with robots that have a mouth.

"could get along with them faster". She clarified this statement by saying that she worked better with people than she did with "cars and stuff like that". Bree wanted eyes "so it can see", ears "so they can hear you" and a mouth "so it can talk to you" (Bree, Post-Experience Interview, September 2005). She felt the need to speak was important so that if she missed a part or got a wrong piece while constructing them then they could tell her "without me having to look it up". Bree's inclusion of this human characteristic to talk had a distinct purpose and was likely influenced by her problem-solving strategy of going back over the construction and programming of her robot to find an error. Bree's responses are evidence of the mechanism by which a mental model can be used to understand the "self-reflective aspects of the self" (Power & Wykes, 1996, p. 240) through her demonstration of how objects (robots) relate to both herself and her interactions in the world of robotics. It is clear that Bree's reflective mental models of robots and their anthropomorphic characteristics have incorporated many levels of meaning.

Paper presented at UBC, Vancouver at the Technological Learning & Thinking 2010 Conference (17 -19 June)

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The 24th Loebner Prize Finals 2014 at Bletchley Park

by *Bertie Müller* (Univ. South Wales)

In the year of the AISB's 50th anniversary, the AISB is taking permanent responsibility for running the annual Loebner Prize finals on the premises of Bletchley Park where Alan Turing worked as a code-breaker during World War II. The Loebner Prize Contest is the longest-running Turing-Test competition started in 1991 and based on Alan Turing's original conception of the test. Claims in the media that the Turing Test had been passed for the first time this year have left parts of the scientific community unconvinced due to various reasons. The Loebner Prize version of the test offers an established set of rules and even though still in its simpler first stage no submission has managed to pass this stage even 24 years after its inception. Once it has been passed, the contest will enter a second stage introducing audio/visual components to conversations. We are looking at some exciting years ahead.

This year's contest attracted twenty entries, four of which passed the preselection stage to compete against each other in the finals at Bletchley Park on 15 November. In the finals each entry was 'paired' with each of four human confederates for a 25 minute conversation with one of four judges. The judges simultaneously but independently communicated with the two paired entities through a split screen showing one conversation on the left-hand side and the other on the right. The allocation of the human and the program were chosen at random for each round of conversations and the judges ranked the conversation partners they believed to be the AI after they had completed their 4 conversations. Not a single one of the programs was able to fool a judge into believing it was human in any of the conversations. Table 3 shows the entries, the human confederates, and the judges.

In the following we give a brief portrait of the finalists, their interests and their entries. These appear in the order of their overall ranking at the Loebner Prize finals 2014. The winner was awarded a bronze medal.

Winner of the Bronze Medal of the 2014 Loebner Prize

Bruce Wilcox (Rose) Bruce Wilcox developed an interest in natural language seven years ago, trying to write chatbots as replicants for users in a virtual world. He was dissatisfied with the available technologies for writing them, so he developed his own which became ChatScript and was released into Open Source. Bruce then decided to write a program for the Loebner Prize contest calling it *Suzette*. She actually fooled a human judge (with help from a judge who used a lot of cut and paste and a human confederate who was trying for an informal "least human human" prize). Because Bruce didn't own *Suzette*, the follow-

Entries	Confederates	Judges
Rose (Bruce Wilcox)	Yasemin J. Erden	Dr Ian Hocking, *Writer & Senior Lecturer in Psychology, Christ Church College, Canterbury*
Izar (Brian Rigsby)	John Gilmour	Dr Ghita Kouadri-Mostefaoui, *Lecturer in Computer Science and Technology, University of Bedfordshire*
Mitsuku (Steve Worswick)	Daniel Hirschmann	Dr Paul Sant, *Dean of UCMK,* *University of Bedfordshire*
Uberbot (Will Rayer)	Ariadne Tampion	Mr James May, *Television Presenter & Broadcaster*

Table 3: Loebner Prize finals 2014: Finalists, confederates, and judges

ing year he wrote a new bot, *Rosette*, who won in the traditional manner of not fooling a judge but merely being better than the other programs. With this year's bronze-medal winning entry, *Rose*, Bruce has now won 3 of the past 5 Loebner Prize finals.

ChatScript combines a strong focus on language manipulation with the ability to create and perform inferencing on fact triples. ChatScript has a built-in pos-tagger and parser, the WordNet dictionary, and some 1500 predefined concepts with the ability to create concepts at will. Because the pattern matching component is so powerful and the rules you write can be so concise, I say that our bots don't match patterns of words – they match patterns of meaning. Our bots excel at matching the user's input to a strongly correlated specific output.

Runners up

Brian Rigsby (Izar) Brian Rigsby is a software Project Manager with a multitude of technological interests such as programming, database development, home automation, and artificial intelligence.

Inspired by an Android application called "Talking Tom Cat", in 2010 Brian set out to improve it by making the character talk back instead of just repeating back exactly what it was told in a funny voice. Soon Brian started developing a program including an animated 3D character that could fully interact by touch and speech stimuli response. The animations, graphics, sounds, and touch response interface for a 3D alien character called *Izar* were soon created, but the character still lacked speech/text input and response and its brains, i.e., its artificial intelligence.

Brian started to use the Pandorabots platform and soon he had rewritten most of the original AIML framework files with his character's persona and added tens of thousands of his own language reductions and responses. In 2011, an increasing interest in artificial intelligence made Brian research into speech input, texting, reverse speech, voice manipulation, image lookup, responses that make use of a dozen internet knowledge bases, and advanced science and math queries. With an expansion of the character's language responses through constant additions to the algorithms that make up its brain, in 2012 Brian developed a limited version of *Izar*'s persona along with a web interface and submitted it to a few AI contests. In 2013, the *Izar* bot placed 2nd in the International Chatbot contest and then 4th in the coveted Loebner contest. Enhancements along with a bit of luck allowed *Izar* to rank 2nd in this year's Loebner contest.

The "contest version" of *Izar* is extremely limited and much alike other AIML bots. Some reasons why this bot does so well in contests are: (1) manual analysis of past logs to code responses for unexpected/unusual inquires; (2) adaptation of a sassy backtalking alien persona, rich with coy responses to questions; and (3) addition of proactive code to constantly turn the interview around by holding the context and frequently prompting the interviewer to answer questions instead of always waiting to be asked a question.

Brian believes that the primary goals of a weak AI can be accomplished in part by current chatbots and that they already accomplish goals like knowledge delivery, learning, communication, and they can crudely accomplish some sort of reasoning. Perception and object manipulation could be accomplished by the successful marriage of a superb chatbot with robotics, so the overall goal of obtaining a weak AI could be accomplished using chatbots. However, the holy grail for a strong AI adds the ability of general intelligence. The chatbots of today can only resort to trickery to fool a human into thinking they are sentient. Brian thinks it is highly unlikely without a yet undiscovered novel approach to simulating an AI that any chatbot technology employed today could ever fool an experienced human into believing it possesses general intelligence.

Brian is looking forward to enhancing *Izar* into a worthy contender for the top spot for next year. Last year, *Izar* pre-qualified in 2nd place and ended up placing 4th in the Loebner Prize finals. This year, *Izar* also pre-qualified in 2nd place and ended up placing 2nd in the finals.

Steve Worswick (Mitsuku) Steve Worswick has been interested in chatbots since growing up on a diet of TV shows such as Knight Rider and Star Trek. He won the Loebner Prize in 2013 with his chatbot called *Mitsuku*. *Mitsuku* is a pattern matching AIML bot based on the original ALICE AIML set but has since had around an extra 250,000 categories added to her program.

The thing that sets it apart from most AIML bots is its ability to work out common sense questions such as "Can I eat a tree?" without having the

answers hard coded into it. It does this by having an ontology of objects built into its AIML files which it can look up and use reasoning skills to work out the answer. In the above, "Can you eat a tree?", *Mitsuku* looks up what a tree is made from (wood) and realises that you can't eat wood and therefore you can't eat a tree.

It is also capable of self learning. If you were to say "John eats pizza", you could then ask questions like "What does he eat?", "Does John like pizza?" and so on. It only learns facts for the user who has taught it, as the bot is available on the internet and many people enjoy teaching it nonsense. However, *Mitsuku* sends an email when it has learned something new to ask if it should learn it permanently.

Steve has been working on *Mitsuku* for around 10 years spending 1 or 2 hours a night maintaining and updating her.

Will Rayer (Uberbot) Will Rayer has long been interested in philosophical questions such as "what is thinking", "can anything other than humans think" and "can computers think". These thoughts were no more than speculation until about 6 years ago when he heard of the Turing Test and its practical implementation, the Loebner Prize. His first entry *Uberbot* was for the 2013 Loebner prize in London Derry but his entry came 5th in the pre-selection, so was not invited to the finals. This year he was more fortunate and had the honour of being invited to Bletchley Park for the finals, where *Uberbot* came 3rd. The underlying basis of the bot is "computational behaviourism" – although this sounds complex the principle is simple: user inputs (stimulus) trigger a search for the best response across a vast number of stimulus/response pairs. Responses can also trigger other searches while answering the user input. Externally, pairs can be defined using an XML format similar to AIML, or can be defined using a spreadsheet. When the bot runs, pairs are stored using SQL and are processed using Xquery and other database techniques. The key features of *Uberbot* are the acceptance of a variety of input formats, and the use of SQL to store a large volume of pairs.

All finalists have been invited to become members of the AISB and have received a complimentary initial year of membership.

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Event: Foundations of Digital Games 2013

by *Swen Gaudl* (University of Bath)

The Foundations of Digital Games Conference (FDG) is the 8th conference of the series. The series started in 2006 as the "Annual Microsoft Academic Days on Game Development in Computer Science Education" and was in 2009 transformed into the conference as it is currently being held. The conference was initiated in the USA attracting researchers from around the world transforming it into an international conference with venues in the US and Europe. The conference is backed by the Society for the Advancement of the Science of Digital Games (SASDG) which focuses on advancing the scientific understanding and knowledge on Digital Games as well as methods to utilize Games for purposes other than pure entertainment.

FDG2013 was held from 14-17 May 2013 in Chania, Krete. Chania a beautiful historic town offering loads of things to see features a good convention centre at the old harbour where the FDG took place. Transportation to the Island is extremely cheap as low-cost airlines offer direct flights from the UK and other European countries. There is also the possibility to take a ferry from Athens or take a bus from the capital of the Island, Heraklion.

In contrast to the recent FDG conferences where the conference published through ACM the organizers decided this year to publish the proceedings open access supported by SASDG, their own society. During the conference the organizers defended their decision presenting pros and cons for the move away from ACM. The main argument was the flexibility the new approach offers.

Compared to other conferences such as the Computational Intelligence and Games (CIG), Games Innovation Conference (IGIC), or DIGRA which have one clear focus on one special academic discipline FDG aims at bringing together multiple disciplines which is a concept worth mentioning. This is the case specially for the doctoral consortium which is attached to the conference and allows students of multiple disciplines to communicate and discuss their research ideas and concepts in front of a broad audience.

The conference was divided into three parallel sessions this year. The main track and two workshop and demo tracks. During the keynotes the parallel sessions were paused so that everybody was able to attend, whereas for the rest of the conference it was possible to switch between talks in the main track and attending the workshops. The main track consisted of sessions on Game Studies, Game Design, Game Education, Artificial Intelligence, Serious Games and Interaction and Player Experience. As part of the main track short papers and posters were represented by one session each. The doctoral consortium was split over two days and partially in parallel to the

main track. Fifteen students presented their research or research proposal in front of an interdisciplinary audience. The parallel workshops were on procedural content generation, design patterns, Games for Learning and EVE online-a successful online game which heavily focuses on economics. The concept of parallel sessions was introduced in this year's FDG to reduce the extra days for additional pre-conference workshops. The choice however made it hard for the conference attendees to attend the main track and additionally attend workshops because the workshops were intended as drop-in sessions. In reality it was hard to leave a session after just one talk. The quality of talks was good especially the key-notes and due to the interdisciplinary nature of the conference different perspectives to similar problems were presented offering potential for future work by finding collaborators or incorporating the findings of other disciplines.

Swen E. Gaudl
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Event: eNTERFACE'13 International Summer Workshop

by *Jekaterina Novikova* (University of Bath)

The eNTERFACE is an annual workshop which has quite a long history. It first was initiated by the FP6 Network of Excellence SIMILAR in 2005 and since then has taken place in such places as Belgium, Croatia, Turkey, France, Italy, Netherlands and Czech Republic. The eNTERFACE workshop aims to establish a tradition of collaborative research and development work by gathering in a single place several teams of researchers to work on a prespecified list of projects in multimodal human-machine interfaces for 4 complete weeks. Thus it is different from traditional scientific workshops where specialists meet for a couple of days to discuss the state of the art problems and exchange ideas.

This year the eNTERFACE workshop took place in Lisbon, Portugal. Nine projects from the below list were pre-specified for this year's workshop:

1. Body-centric interactive play, organized by Human Media Interaction, University of Twente (The Netherlands)

2. Touching virtual agents - embodiment and mind, organized by Human Media Interaction, University of Twente (The Netherlands)

3. Multiparty multimodal social dialogue with a human-like tutoring agent, organized by Department for Speech, Music and Hearing, KTH Royal Institute of Technology (Sweden)

4. Laugh when you are winning, organized by UCL Interaction Centre, University College London (UK)

5. Towards the sketching of performative control with data, organized by Numediart Institute, University of Mons (Belgium)

6. Kinterest TV, organized by Numediart Institute, University of Mons (Belgium)

7. Kinect-Sign, organized by Electrotechnical Engineering Department, New University of Lisbon (Portugal)

8. Body ownership of virtual avatars: an affordance approach of telepresence, organized by Electrotechnical Engineering Department, New University of Lisbon (Portugal)

9. Development of an ambient assisted living (AAL) ecosystem, organized by Electrotechnical Engineering Department, New University of Lisbon (Portugal)

I will not go into detail of every project from this list, but will describe the project I was participating in. This was project number three and it made

an attempt at developing a state-of-the-art rich "embodied multimodal multiparty dialogue system". The project implemented a dialogue setup consisting of two simultaneous speakers and one newly developed Furhat robot head [1] in a tutoring like scenario, where the users were collaboratively solving *NASA Exercise: Survival on the Moon* task. The project studied a multiparty collaborative dialogue setup where a group of humans interact with each other and with a dialogue system. The dialogue system was represented by the Furhat back-project robot head [1] developed at the Department of Speech, Music and Hearing at KTH Royal Institute of Technology, Stockholm, Sweden.

The robot head supports the synthesis of speech and facial movements (such as gaze, synchronized lip animation, facial gestures, head movements, etc.). The setup involved teams of 2 persons solving a task that includes ordering six cards with objects drawn on them. The members of each team collaborated together to solve the task and sort the cards according to their importance for a survival on the Moon. The dialogue system tutored the teams while solving the tasks using several real time strategies, e.g. an active or neutral tutoring approach. To monitor the humans and the game, the system used real-time face and head-pose tracking, a microphone array and multiple speech recognizers to track in real-time speaker activity, in addition computer vision techniques to track the status of the game, the status of a shared space of attention, and to track the players hand gestures. The task of the system was to generate time-sensitive subtle signals to coordinate the interaction, such as feedback, interruptions, corrections and grounding, head-pose and gaze to coordinate turn-taking, and other verbal and non-verbal affect cues to regulate the conversational engagement of the players in the task.

In addition to working on this project, we had a chance to listen to the talks of externally invited speakers, such as Dr. Artur Arsenio, who was a researcher at Rodney Brooks' Humanoid Robotics group at MIT CSAILis and now is CEO of YDreamsRobotics in Portugal. He was talking about new communication approaches between humans, robots and intelligent objects and leveraging the presence of a human teacher on the robot's learning process. Another invited speaker, Dr. Márta Gácsi was presenting the approach of developing social behaviour for non-humanoid robots based on dog behavior. She highlighted animal cognition as a starting point for the development of intelligent robots and discussed the challenges of developing robots that are capable of effective and believable social interactions with humans.

As a summary, the eNTERFACE workshop is strongly recommended to researchers in all stages of their career, as it provides a possibility to meet and work side by side with researchers of all over the world, to bring together modules developed by different groups, to tap into the expertise of other researchers, and finally to network and to develop scientific collaboration.

Reference

[1] Al Moubayed, S., Beskow, J., Skantze, G., Granstrom, B.(2012). Furhat: A Back-projected Human-like Robot Head for Multiparty Human-Machine Interaction. In Esposito, A., Esposito, A., Vinciarelli, A., Hoffmann, R., C. Muller, V. (Eds.), Cognitive Behavioural Systems. Lecture Notes in Computer Science. Springer.

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AISB Workshop: Modelling Organisational Behaviour and Social Agency

by *Davide Secchi* (Bournemouth Univ.) & Martin Neumann (Univ. Koblenz)

This workshop on "Modelling Organisational Behaviour and Social Agency" took place 27-28 January 2014 at Bournemouth University's Business School. The event sought to examine the applications, structure, how-to, potentials, and philosophical and theoretical underpinnings of agent-based models (ABMs) as they apply to organisational behaviour and social agency.

We had one day and a half of paper sessions, with social and networking activities. Participants came from seven countries, including the UK, Germany, Denmark, Estonia, Lithuania, Canada, and Italy. Both days started with an invited speaker, with the intention of spicing up and setting a common ground for the discussion. The first day, Guido Fioretti of the University of Bologna delivered a talk on "emergent organisations" suggesting to approach and consider ABMs as videogames. This provocatory idea was then connected to what ABMs do best, i.e. serve as thought experiments. He also suggested two areas of *organisation science*—namely routines and ecologies—would benefit dramatically from the use and development of this simulation technique.

The second day was opened by Stephen Cowley of the University of Southern Denmark with a speech on "cognition beyond the body: looking differently at ABM". Taking the perspective of distributed/systemic cognition and drawing on examples from linguistics, he indicated that ABM serve the functions of deflating and demolishing existing theories, on the one hand, and changing the way reality is observed, on the other. This points at a significant impact on the way traditional social science research is conducted.

The two speeches at the beginning of the mornings were then followed by paper sessions, organised around a common theme. The first session on day one was dedicated to "modeling organizational behaviour" and it was chaired by Martin Neumann of the University of Koblenz. The four papers presented focused on organisational routines and complexity. While Cara Kahl of the Technical University of Hamburg indicated how a clear categorization of routines may lead to a significantly different modelling activity, Dermot Breslin, University of Sheffield, pointed at a process of organisational co-evolution to match routines and learning activities. The other two presentations by Dinuka Herath, Bournemouth University, and Edoardo Mollona, University of Bologna, highlighted the use of ABM

to understand, respectively, how much disorganisation an organisation can tolerate, and the limits and power of cooperation. The former work is a modification of the famous "garbage can" model where hierarchical levels are provided for workers. The latter presentation featured two types of agents (prosocial and free riders) that cooperate using different search mechanisms.

The first part of the afternoon in day one was then dedicated to "philosophical perspectives". Cara Kahl facilitated a session where Emanuele Bardone, University of Tallinn, discussed epistemic tools for chance seeking. According to Emanuele, ABMs can be thought of as tools for hypothesizing out of ignorance (abduction). Sabine Thürmel, Technical University of Munich, provided interesting insights on social and asocial agency, potentiality and actuality of ABM, and proto-ethical behavior of simulated agents. Cara Kahl also chaired the following paper session on "modelling organised crime". Corinna Elsenbroich of the University of Surrey presented a simulation model of the extortion racket in a society where this is either tolerated passively or where citizens organise actively to fight this crime. In the following presentation, Martin Neumann introduced problems and advantages of using ABM to model covert organisations, such as the Italian mafia. The match of macro and micro perspectives could all fit into a distributed/systemic cognitive modelling of agents.
In the second part of the afternoon, a session chaired by Davide Secchi, Bournemouth University, was dedicated to "methodological insights on ABM". Darius Plikynas, Mykolas Romeris Univesity, presented some challenges to the ideas of *collective consciousness*, introducing a model on neurodynamic waves and individual alignments. Raffaello Seri, University of Insubria, presented an analytical approach to ABM, showing results from an equation-based model that, under particular circumstances, may be set to behave in a way similar to ABM. Finally, Mario Paolucci introduced some thoughts on modelling software, indicating that there are advantages in modelling asynchronous (and more complex) agents. The software *Jason* was recommended for this purpose.

The two sessions on day two were both chaired by Emanuele Bardone. The first featured Davide Secchi and Svend E. Thomsen, University of Southern Denmark, who presented models of *docile* human behaviour, i.e. the attitude to make decisions based on the social environment. Svend E. Thomsen described a system where doctors and nurses make decisions in an emergency department of a hospital. Expertise, role, and task completion of teams are considered. Davide Secchi presented a model of docile behaviour in organisations, in an attempt to find out what are the conditions—amongst costs, payoff/gains, and the extent to which people cooperate—for docility to emerge.
The second session of the morning was dedicated to "models of macro aspects of organizational behavior". Stefania Palladini from the University of Coventry presented a model of cooperation

and conflict in the case of controversies over water in developing countries. ABM offer dramatic advantages over the game-theoretical approaches usually employed in that field although the number and complexity of agents and parameters are significant constraints. Enrico Secchi, University of Victoria, introduced an NK landscape model of open innovation networks, focusing on the role of intermediaries. The model showed that the structure of the network and the way the intermediary is employed affects the final outcome, with some counterintuitive results.

The two-day workshop has been extremely valuable and participants agreed that it delivered more than promised. We spent two interesting days sharing ideas, establishing fruitful research relationships, and learning a lot. This was an attempt to see how ABMs can be used to enhance the social sciences, in particular the study of social agenct and organisational behavior. The workshop managed to bring together researchers of different backgrounds related by the common research question of how simulation facilitates a comprehension of organisational behaviour. The discussions of the two days enabled true interdisciplinary cross-fertilisation of organisational, cognitive and psychological social science. The event brought about that on a conceptual level similar problems arise in various disciplines. This enabled a fruightful exchange of problem solutions across disciplinary broders. We ended up with a rather multi-disciplinary event where the topics/issues were analysed from different angles.

Proceedings of the workshop will be published in a book and we are already thinking of repeating this exciting experience next year and first plans to establish an enduring collaboration have been developed by attempting to meet regularly. A huge "thank you" goes to AISB, and especially to Yasemin J. Erden, for making this exciting experience possible.

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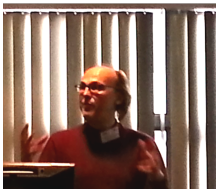

Martin Neumann, PhD
Institute for Information Systems in Business and Public Administration
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Announcements

Open call for AISB Workshops

In 2015 AISB continues with its series of workshops to be held across the country. We now invite you to host your own workshop. The topic is up to you, so long as it fits within the auspices of AI, SB or related. If you are interested in hosting a workshop, you will find information on what you will need to do below.

Since September 2012, the AISB has been hosting a series of one or two day workshops across the country. The first two workshops were both held at Goldsmiths, the third was hosted at St Mary's University, while the most recent were held in Bournemouth University and the University of Birmingham. Further information about these previous events can be found on the AISB workshop pages listed below. A number of publications have already arisen from these events, the most recent of which was a Symposium Issue of the Journal of Consciousness Studies and a book published by Springer on Contemporary Sensorimotor Theory.

Events are abstract-only and free for AISB members. Light refreshments are funded by the AISB. Current non-members would be able to host or attend a workshop for the cost of AISB membership (which starts at £15 for concessionary fees and £40 for UK members per year).

In order to propose a workshop, you will need to complete a brief application with the following details:

1. Workshop title
2. Workshop abstract (200-400 words approx.)
3. Organiser(s) and main contact (include details of expertise in proposed topic)
4. Host Institution details (name, address)
5. Dates and deadlines for the following:
   – Abstract Submission
   – Notification of Decision
   – Registration
   – Workshop
6. Possible speakers (e.g. do you plan to invite speakers?)
7. Where you would advertise (e.g. could you create a page on your institution website?)

If you are interested in hosting one of these events, you will find information on what you will need to do on this page:

http://www.aisb.org.uk/events/members-workshop-series

http://aisb.org.uk/media/files/AISBWorkshops.pdf

For more information, or to submit an application, please contact Dr Yasemin J. Erden at the following address: yj.erden@smuc.ac.uk

Changes at AISB, by *Andrew Martin*

With the beginning of 2015 there are some changes to the AISB committee. Joining us are Janet Gibbs, Andrew Martin (myself), and Joel Parthemore.

Janet Gibbs is currently working at the Institute of Psychiatry, Psychology and Neuroscience, King's College, London in an administrative capacity. Her research interests include Sensorimotor Theory of Perception; Sensory Substitution and Augmentation; and in 2014 was published on the subject of Sensory Augmentation in the Virtual World. Janet's position in the committee is yet to be decided but we have every faith in her commitment and insight she will bring to any role.

Joel Parthemore has been with the Centre for Cognitive Semiotics, Lunds Univ. (Sweden) since January 2011, first as a research assistant and then, having defended his thesis in March 2011, as a postdoc. Prior to this, he was a visiting doctoral student in the Department of Philosophy, from September 2009. Joel's interests include the way that concepts, signs (as semiotic resources), and language all pull apart from each other; and the use of conventionalized signs to determine moral agency, understood as being appropriately held responsible for one's actions and their consequences.

There is one role change within the existing committee members, Kate Devlin is now Treasurer (treasurer15@aisb.org.uk). Kate will be well known to many members, chairing the symposium "New Perspectives on Colour" with the Colour Group at AISB50, as well as being on the organising committee for AISB50 itself.

Finally, Rodger Kibble is standing down from the committee and his role as Secretary, and I have accepted the role in his place. I will take this opportunity to thank Rodger on behalf of the entire AISB for his contributions to the society as Secretary and in many other roles, such as Publications Chair for AISB50. I will endeavour to maintain the high standard achieved by Rodger. My research interests are split largely into two areas of analysis of Stochastic Diffusion Search, which is a biologically plausible swarm intelligence algorithm and the compatibility of J. Kevin O'Regan's Sensorimotor Theory with Radical Enactivism.

Please join me in welcoming our new committee members and wishing everyone the best for the coming year.

Andrew Martin
Secretary of the AISB PhD Candidate
Department of Computing
Goldsmiths, University of London

Dear Aloysius. . .

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.

Dear Aloysius,

When I was founded, 50 years ago, hopes for AI were high. We expected fully-conscious, automated companions within our lifetimes. Typical fruits of those 50 years of research, however, have been the Roomba vacuum cleaner and the Robomow lawn mower. What about the general-purpose maids and gardeners we were promised? Has it all been worthwhile? Should we give up?

Yours, AISB

Dear AISB,

The Institute's many AI products, described in these columns over many years, should surely have convinced you of our success in delivering your vision. For instance, we make a robot that can turn its hand to housework, gardening and anything else you assign it. For a modest consideration, FACTOTUM™ (Futuristic, Artificial Consciousness Tackles Oddjob Tasks and the Usual Maintenance) will fulfil all the functions of maid, gardener, cook, butler and chauffeur, leaving the owner to enjoy a life of leisure. Nor will it require wages, holidays or sleep.

Yours, Aloysius

Dear Aloysius,

We've all been guilty of skimming through terms and conditions without due care and attention. Let my experience serve as a dire warning. I'm a film star. You may have heard of me. A month ago my production company persuaded me to let them capture and store a library of my movements, facial expressions and speech. They said it would simplify future film production. 'Simplify' turned out to be a gross understatement. What they meant was that entire films could now be constructed from these film clips without my involvement. Indeed, a closer inspection of those terms and conditions revealed that it could be done without my permission either. A never-ending series of trashy movies, including, it's rumoured, even some pornography, plus adverts for dodgy products, will now be released – even long after my death. My reward will a modest royalty and my reputation will nose dive. My career, and celebrity lifestyle, are at an end. Can you help me?

Yours, Avatar

Dear Avatar,

What you need is for those film clips to disappear. Our investigations have

revealed that your film company's paranoia over retaining its intellectual property has played into our hands: there are only two copies of your library and we know where both of them are stored. The task of 'disappearing' them is a perfect fit to the institute's skill set. Moreover, concerned that you might sell a second library to a rival company, those terms and conditions preclude you from re-recording those clips. So once they are gone, they're gone for good. Our ERASE™ (Explore, Reveal and Abolish a Store of Effigies) system will infiltrate the company's clip library, delete your clips and overwrite them with random bits, multiple times, until they are irretrievable.

That's the Good News. The Bad News is that you are not alone. Nearly all your fellow stars have been caught in the same net. The loss of your clips will not mean you can resume your career. All future film production will be automated; it's just that you won't be in them and you won't collect any royalties. The only solution is for you to persuade all your colleagues to purchase our services for our very reasonable consideration.

Yours, Aloysius

Dear Aloysius,

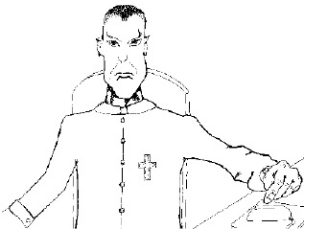
I'm worried about The Singularity. If Ray Kurzweil and others are right, we are faced with an exponential growth of ever more intelligent robots who will take over the planet, leaving us, at best, as pets. Should we call a moratorium on AI research now?

Yours, AfrAId

Dear AfrAId,

There's no need to worry. The Singularity is not in the future, but in the past: 11:11pm 1st April 2011, to be exact. On that day our Institute launched the World's first superintelligent, agent-based system. We are now into the 9th generation of that initial system. Haven't you ever wondered how we have been able to deliver such an extraordinarily successful series of intelligent products? HOMO MACHINA™ v1.0-9.7 (Humans Overtaken, by Machines Outdone: Mighty Agents Creating Highly Innovative and Novel Artefacts) made them. As long as these mighty agents are kept busy with meeting the huge demand for these products, they have no time to displace mankind – so keep those orders coming!

Yours, Aloysius



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