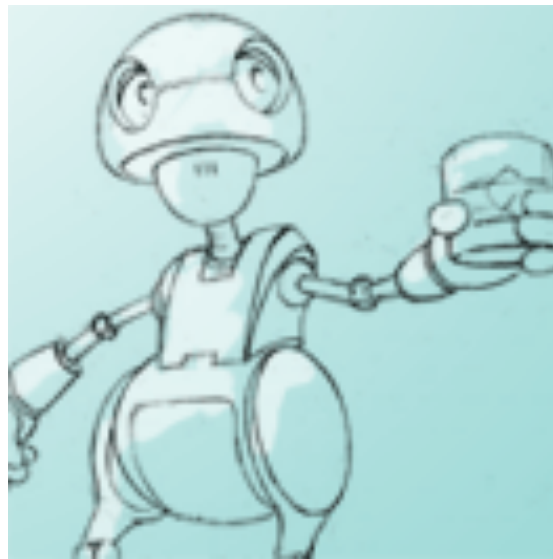


Creative Science 2011 (CS'11)

Nottingham, UK. 25-26th of July 2011



Jimmy (from the Brian David Johnson story “Nebulous Mechanisms”)

Creative Science 2011 (CS'11) is the second in a series of workshops that explores the use of science fiction to motivate and direct research into new high-tech products, environments and lifestyles. In particular, CS'11 applies a methodology we call Science-Fiction Prototyping (SFP) which employs fictional stories to serve as prototypes to explore a wide variety of possible futures. The workshop consisted of one keynote talk, three invited talks and seventeen peer-reviewed Science Fiction prototypes (SFPs). The keynote talk was delivered by Sumit Paul-Choudury, an editor at New Scientist, a weekly international science magazine and website, founded in 1956. New Scientist reports on recent developments in science and technology and is published by Reed Elsevier, boasting an international circulation of almost a million copies. Sumit's talk *“What happens next; Science communicators and the future tense”* explored the various approaches that written media uses to report in the “future tense” and examined the similarities to the SF prototyping process. The first invited talk was presented by Brian David Johnson, Futurist and Director of the Future Casting, Interactions and Experience Research Group at Intel Labs, Hillsboro, USA. Brian coined the term SF Prototyping. In his talk, *“Love and God and Robots”*, Brian introduced the SFP methodology, illustrating its usage by presenting the third in his series of “Dr Egerton” SF Prototypes, called *“The Machinery of Love and Grace”*. The second invited paper was presented by Dr Simon Egerton one of the authors of the

original paper “*Using Multiple Personas in Service Robots to Improve Exploration Strategies When Mapping New Environments*”, (presented at IE’08 in, Seattle, USA) that formed the inspiration for the ‘Dr Egerton stories’ and led to Science Fiction Prototyping and the Jimmy competition. Simon’s talk explained the background to this work and provided a description of the competition tools (an online world) and the participation process. The third invited talk, *When Authors and Scientists Collide*, was by Robert Appleby a physicist working in the High Energy Particle Physics Group, University of Manchester. Robert was one of a group of scientists that collaborated on two ‘Comma Press’, book projects which brought together authors and scientists to produce anthologies of science-based short stories (*When it changed* and *Litmus*). In this talk Robert described the interaction between himself as a scientist and two of the authors.

The peer-reviewed SFPs consisted of some seventeen futuristic scenarios written by authors drawn from a diverse set of disciplines including business [5] [6], architecture [20], humanities [14] [16] [17] [21], creative arts [9] [10] [12] [14] [17], media production (films & games) [13] plus science and engineering [2] [3] [4] [6] [7] [8] [11] [14] [15] [18] [19]. Initially, we had intended to describe the SFPs by classifying them into a fixed set of applications or technologies but quickly realised that the diverse and complex nature of the stories rendered this a meaningless task, so instead we now offer you a few ad-hoc observations. First we noticed that there were a significant number of stories that focused on people’s complex relationships with technology. The discussions ranged from the risks of our over reliance on an increasingly digitally augmented world [6] [2] [11] [16], [14], to uplifting visions of how technology might be used to support human values such as spirituality [5], relationships [2] [9] [10] [14], variety (avoiding monotony – *variety is the spice of life*) [18] as well as our more material needs such as physical and psychological health [6] [14] [15], maintaining and repairing technology [11] or the environment [2] [13]. Other authors explored the potential effect on society from technology driven changes to business models [5] or lifestyles [17]. Another fascinating approach to fictional prototypes included transposition of realities using physical [20] [21] or temporal abstractions [7] [8] [19] of our world. The technologies employed in these SFPs are varied, ranging from sensing [2] [6] [7] [9] [10] [15] [16] [18] [19] [20] through virtual/mixed reality [6] [7] [9] [10] [20], HCI [5] [6] [7] [8] [9] [10] [12] [14] [16] [18] [19] [20] to Artificial Intelligence [6] [7] [8] [9] [10] [11] [13] [15] [16] [18] [20]. It is evident from many of these SFPs that an enduring vision of the future is one where people will share their life with increasingly intelligent machines. But what are the issues that scientists and society need to address before finding ourselves living in such a future? We feel it’s important to engage as wide a section of society, as is possible, in this debate. Clearly, our workshop, and its SFPs (which are publically available) are one such way. Another way is via a novel online competition that we have launched at this workshop [3]. It takes its inspiration from these SFPs and, in particular, Johnsons’ imaginative SFP [2] that explores the possibilities and consequences of developing ever-smarter technology. For its focus, the competition explores one of the most controversial aspects of Artificial Intelligence, ‘freewill’; can machines achieve it? It centres on the design of a bespoke controller for a simulated robot “*Jimmy*”; a waiter working in a futuristic bar, set in a multiuser online virtual world. This paper explains the motivation, design, implementation and rules for this competition. The online world takes the form of a large, multi-roomed, iWorld, called “*The Hex*” (somewhat reminiscent of a space station). Our intention, over time, is to include various other

game-like experiments in the online environment, (located in the differing rooms), so making this environment a central facility for those interested in exploring potential technological futures. Thus, if you have ideas for other experiments, contact us.

Clearly, we were not have been able to manage this workshop on our own and there are many people we need to thank. First, we would like to acknowledge the valuable contribution of our IE'11 organizational team whose support and advice throughout the year has contributed greatly to the success of this event (especially their assistance with reviewing and revising papers), namely (in alphabetical order):

- Graham Clarke (*Essex University, UK*)
- Sumi Helal (*University of Florida, USA*)
- Kar-Seng LOKE (*Jalan Lagoon Selatan, Malaysia*)
- Regina Peldszus (*Kingston University, UK*)
- Sol Pena-Rios (*Instituto Politécnico Nacional, Mexico*)
- Angelica Reyes (*Technical University of Catalonia, Spain*)
- Data Tolentino-Canlas (*University of the Philippines, Diliman*)
- Minjuan Wang (*San-Diego State University, USA*)
- Chui Yin Wong (*Multimedia University, Malaysia*)
- Hsuan-Yi Wu (*Delta Electronics, Taiwan*)
- Xiaoxia Zheng (*University of Essex, UK*)

Also, we are grateful to our sponsors, Intel and the Creative Science Foundation for their financial support. Of course, most importantly, we want to thank the authors as, without their outstanding work, imagination, and commitment to writing these visionary SFPs, there would be no workshop. Thus, on behalf of those who have enjoyed reading these SFPs, thank you.

Finally, if these science fiction prototypes have inspired you, why not write one yourself and join us at our next Creative Science event (see creative-science.org for details).

Vic Callaghan – *Essex University* (vic@essex.ac.uk)

Brian David Johnson – *Intel Corp* (brian.david.johnson@intel.com)

Simon Egerton – *Monash University* (simon.egerton@infotech.monash.edu.my)

10th June 2011



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3. *Jimmy; Searching For Freewill*, Simon Egerton (Monash University, Sunway Campus, Malaysia), Marc Davies (School of Computer Science and Electronic Engineering, Essex University, UK), Brian David Johnson (Director of Future Casting, Interactions and Experience Research, Intel Labs, INTEL Corp, USA), Victor Callaghan (School of Computer Science and Electronic Engineering, Essex University, UK)
4. *When Authors and Scientists Collide*, Robert Appleby (High Energy Particle Physics Group, University of Manchester)

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