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Transformative engagement

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Machines calculate, humans make judgements

Where is the wisdom we have lost in algorithms?

where is judgement, we have lost in calculation?

In its tradition of hospitable engagement of promoting an understanding of the potential, transformative impacts, and critical consequences of pervasive technology, AI&Society welcomes contributions and participation from researchers and practitioners, in a variety of fields including information technologies, humanities, social sciences, arts and sciences, in cultivating this understanding. With its commitment to transformative horizon of societal issues and strong interdisciplinary culture, AI&Society continues to facilitate the debate on broader societal and cultural impacts of ubiquitous technologies, including governance, security, sustainability, identity, inclusion, working life, corporate and community welfare, and well-being of people. Over the recent years, the Journal authors have responded to questions on the mismatch between technology and society, raising issues such as the decoupling of intelligence from things uniquely human and the tunnel vision of the One best way; Causality—a slippery concept; Technological convergence; Brittleness of complex systems; Man as machine; Dream of the exact language. The 25th celebratory themes of AI&Society have covered a broad range of societal issues including themes on Faustian Exchange: What is it to be human in the ubiquitous technology? Presence, Metaphysics, Technology, Culture and Innovation, Sonification, Technology, Culture and International Stability. In its transformative role of engagement, the Journal seeks to provide a forum for fundamental questions of human–technology relations including AI and existential risk, the way technology has altered our relationship with the natural world, with one another and with the culture to which we belong, in multitude of ways. This questioning also requires a critical analysis of emerging research into areas such Collective Intelligence, Big Data and Society, Data sharing between and across in DNA research, Patient data in Heath care, Surveillance, Security, Ethics, institutional integrity and sustainability, and Technology and the Brave new world.

In pursuing these broader societal aims, the Journal recognises the great potential of technological innovations for societies, but is also mindful of the existential risk posed by AI technologies. There is also a recognition that many societal systems exhibit complex and chaotic dynamics, and their unpredictability is not amenable to cause and effect, and cannot be understood just by the mystique of technical language or computational cognition. Many of our authors bring to the understanding of this complexity a critical mind that questions certainty of the technical language and assumptions of computational models of cognition. As McGilchrist (2013) says: Only that combination of historical knowledge with scepticism can give us the required context in which to understand our own lives, predicaments, and purposes. Building upon its human-centred tradition of science and technology, the Journal continues to act as a catalyst, promoter, and facilitator of engagement with diversity of voices and over-the-horizon issues of technology and society.

From its very inception, AI&Society has its roots in the European traditions of human-centred systems, represented by the British tradition of socially useful technology, the German tradition of humanisation of work and technology, the Collective resource tradition of Scandinavia, and the

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Italian tradition of empathy. AI&Society continues its exploration and examination of the emerging gaps between the reality and actuality of the rapidly evolving 'information society' and the humanistic vision of developing socially useful technologies. The title of AI&Society is itself a reflection of its commitment to the interrelationship between technology and society. The title takes us back to the era of the 1980s when, on the one hand, high priests of hard AI were making exaggerated claims on behalf of AI, and on the other hand, many politicians were claiming that there was no such thing as society. Both of these claims needed to be questioned, and that is what AI&Society has been doing since its inception 28 years ago, stimulating fruitful discussions and actions, which celebrate human-centred values. The Journal continues it own transformation, from journal of machine intelligence in 1980s to journal of human-centred systems in the 1990s, and now at the turn of twenty-first century, journal of knowledge, culture, and communication.

The origins of *AI&Society* go back to 1981, the launch of the Computer-Aided Animated Arts Theatre (CAAAT) project at University of Brighton (Gill 1984), bringing together the dimensions of art, media, language, visual literacy, science, technology, robotics, speech, and performance in a unique interdisciplinary project for the design of interactive tools for children with learning difficulties. The project brought into practice what it means to be socially responsible and what it means to design machines with purpose. The CAAAT project provided a framework for setting up Social and Educational Applications of Knowledge Engineering Centre (SEAKE) at University of Brighton, both of these initiatives directed by the Journal Chief Editor, Karamjit S Gill. In response to concerns of autonomous intelligent AI systems, an international conference on Artificial Intelligence for Society was hosted by the SEAKE Centre in 1983 (Gill 1986), which was chaired by the eminent Oxford philosopher, Late Professor Michael Dummett and AI pioneer Professor Margaret Boden. During the conference, an idea was floated to promote a humanistic forum of artificial intelligence as an alternative to computational cognition paradigm. During this period, the ESRC research network on Computers in Education, led by David Smith, brought to focus the role of computers in knowledge acquisition (Sage and Smith 1983) and learning at the SEAKE Centre. The London Technology Network (Greater London Enterprise Board (GLEB)) led by Prof. Mike Cooley provided an opportunity to bring together scholars and practitioners from North America, Europe, and Japan to found AI&Society in July 1986. Among the founders were Mike Cooley, Karamjit S Gill, David Smith, Richard Ennals, Janet Vaux, Michael Dummett, Margaret Boden, Alan Bundy, late Howard Rosenbrock, Richard Ennals, late Bob Muller, Ajit Narayanan (NZ), late Joseph Weizenbaum (MIT), Hubert Dreyfus (Berkeley), Terry Winograd (Stanford), Daniel Dennett (Tuft), Bo Goranzon (Sweden), Massimo Negrotti and Achile Ardigo (Italy), Felix Rauner (Germany), Katsuhiko Nakamura (Japan), and John Palmer (The Guardian Newspaper).

Central to the Journal remains the ideas of machines with purpose, the science based on purpose rather than causal explanation, the tacit dimension of knowledge and the implication of the shift from judgement to calculation, anchored on the seminal writings, Architect and Bee (Cooley 1987), Computer Power and Human Reason (Weizenbaum 1976), and Machines with Purpose (Rosenbrock 1990). AI&Society was launched in 1987 at the Computer for Social Responsibility (CPSR) workshop in Seattle (USA) hosted by Terry Winograd and Doug Schuler. During the 1980s, the focus of the journal on humanistic perspective of machine intelligence and expert system reflected its concern regarding the dominance of computational cognition on AI developments. This perspective of AI was promoted by annual conferences and workshop on Artificial Intelligence for Society held in Europe, in addition to the publication of invited papers and special issues. In those early days, the Scandinavian research network on language, culture, AI, led by Bo Goranzon, brought another humanistic dimension of AI to the journal. A book series on Human-Centred Systems (Springer) edited by Karamjit Gill expanded journal network of authors, readership to arts, theatre, and language. Richard Ennals, then manager of the British Fifth Generation AI program, Alvey (Ennals 1986), stimulated the debate on socially responsible AI in AI&Society, thereby promoting the humanistic culture of the journal to wider AI community.

As the journal entered the 1990s, its focus reflected back on human-centred system, stimulated by the EU initiative on Anthropocentric Systems and Technologies, an EU–Japan research network on Human-Centred System and Globalisation, an EU postgraduate research network on human-centred systems. In the last part of 1990s, EU–India Network on Cross-Cultural Innovation, a collaboration between Indian and European researchers, provided a framework for initiating a debate on knowledge, culture, and communication in the journal. AI&Society became the forum, promoter, and facilitator of these EU initiatives in widening the humanistic research culture through publications, workshops, symposia, and conferences. These publications and events facilitated the broadening of the AI&Society horizon to issues of the nature of intelligence; social intelligence and mediation; robotics, artificial agents, and ethics.

As we pass through the first part of the twenty-first century, there are increasing concerns about the potential for loss of human control of computer-based intelligences

and, more generally, the possibility for foundational changes in the world stemming from developments in AI. These concerns include the potential socioeconomic, legal, and ethical issues that may come with the rise in intelligent computation, machine intelligence, and likely changes in human–computer relationships. This requires understanding of the myths and potential realities of anxieties about long-term technological futures, and a need for a critical reflection on how autonomous and semiautonomous systems may lead to disruptive futures and how to mitigate their behaviours. At each stage of technology development, there are choices to be made (AAAI PRESIDENTIAL PANEL 2008–2009). And these choices depend upon our purpose whether we design machines with purpose or machines for calculation.

The challenge here is to articulate the opening up of opportunities to design interactive and mediating tools for multidisciplinary domains such as Internet-aided and Internet-mediated environments, collective intelligence, distributed cognition, distributive learning, intelligent civic media, interactive consumer relations, mediative presence, cross-cultural communication, deliberative decision-making, computer-mediated therapeutic and mediation environments, interactive art and architecture. This, however, requires a recognition that the focus of interactive technologies predominantly remains on transactional interaction. As research into interaction moves into multidimensional and multidisciplinary areas such as collective intelligence, creative collaboration, cloud computing, social networking, crowd sourcing, decentralised and distributive computing, agent-based intelligent technologies, big data, and Internet of things, there is a emerging shift from transaction interaction to relational interaction. This shift creates research gaps: a theoretical gap on how to perceive the tacit dimension of relation between human and technology, a methodological gap as how to embed and embody the tacit dimension of this relation in the design of the interface, and application gap how to mediate the tacit dimension in implementing the interface. In her book, Tacit Engagement (2015), Gill SP sets a theoretical and methodological foundation for a new direction of research into tacit knowledge and the interface, providing a conception of an interactive and mediating interface, which goes beyond the transactional interaction. The articles in this volume reflect the interdisciplinary and transformative culture of AI&Society.

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