A tribute to Trevor Bench-Capon (1953–2024)

This short note serves as a tribute to Trevor Bench-Capon, a key contributor to the Computational Models of Argument community, who passed away on 20 May 2024.

Trevor started his academic journey reading Philosophy and Economics at St John's College Oxford, where he also took a D. Phil, producing a thesis titled "*Can God be an Object of Reference?*". After graduating, Trevor joined the UK Civil Service, working for six years in the Department of Health and Social Security, in policy and computer branches. He then returned to academia, joining Imperial College, London as a post-doctoral researcher to conduct research into logic programming applied to legislation, building on the practical experience he had gained in the Civil Service. His research at Imperial was centred on logic programming that the group at Imperial became well known for.

Trevor then moved to join the Department of Computer Science at Liverpool, securing a position as a Lecturer in 1987. He was promoted to Senior Lecturer in 1992, Reader in 1999, and Professor of Computer Science in 2004. He then went on to serve as Head of Department of Computer Science from 2005–2008. Trevor's research at Liverpool contributed to new topics for the department and firmly put Liverpool on the international map as a centre of excellence in two specific fields: computational models of argument, and AI and law.

Trevor was instrumental in setting up the International Conference on Computational Models of Argument (COMMA). The first edition was held in Liverpool in 2006, arising out of the EU-funded ASPIC project. Trevor served as the Organising Chair, working together with Paul Dunne as the Programme Chair and Michael Wooldridge as the General Chair. The tenth edition of COMMA will be held in Germany in September 2024 and will feature a final paper at this conference on which Trevor serves as a co-author. The thriving COMMA community is testament to the efforts that Trevor invested in ensuring that there was a dedicated international forum to advance research on computational models of argument and give visibility to this research within the wider field of AI.

Trevor's research on argumentation was closely linked to his interests in AI and law. Indeed, Trevor published a paper in the proceedings of the first edition of the International Conference on AI and Law (ICAIL) in 1987 and every edition since. He also served for many years as Co-Editor-in-Chief of the community's flagship journal, Artificial Intelligence and Law.

Trevor retired as a Professor at the University of Liverpool in 2012, but he retained solid links with the department as an Honorary Visiting Professor, continuing to publish prolifically and engaging in research projects. Through his collaborative research, Trevor developed a network of international collaborators, resulting in 158 co-authors in total over his 300+ papers. The recent contribution co-authored by Trevor included in the present issue of Argument & Computation provides a further sign of his enduring dedication to advancing his research.

As well as his own research contributions, Trevor cared deeply about supporting the next generation of researchers. He evidently enjoyed deep discussion with PhD students about their research ideas and was extremely supportive of students getting their work published and presented at conferences.

Trevor leaves behind lasting contributions to both his university and his international research communities. These contributions cover important research advancements and also community developments arising from his leadership. The COMMA community joins Trevor's wife Priscilla and their three children in mourning the loss of such an influential academic.

What follows are some personal reflections from two of Trevor's close collaborators and colleagues at the University of Liverpool, Paul Dunne and Katie Atkinson.

1. An appreciation by Katie Atkinson and Paul Dunne

1.1. Words by Paul Dunne

I will focus here on the profound and lasting impact that Trevor's work has had on the field of Computational Argument. I started working with Trevor in this field following Henry Prakken's visit to Liverpool during which he talked about work presented at JELIA in 2000. This was my first encounter with Dung's work on abstract argumentation. Trevor and I were to work together in this field from *ca.* 2002, onwards. My own interests in Computational Complexity Theory and Algorithmics were to find a rich source of problems stemming from Dung's paper: Trevor's contribution and supporting motivation would lead to us producing a number of articles which I, personally, feel to be among the most important contributions I have made. Our initial work came about almost by accident: identifying a small lacuna that was present in the complexity-theoretic analysis of Dung's formalism (specifically, an exact classification of Sceptical Acceptance under the Preferred Semantics) led, eventually, to the article which appeared in AIJ in 2002.[1] I think that, leaving aside the technical result itself, an important aspect of this paper (for which Trevor was primarily responsible by his encouragement in choice of venue) was in sending a signal: that theoretical work in argumentation could align well with practical motivation of the problems and that such work was of great interest to the wider AI community. A paper, inspired by Henry Prakken and Gerard Vreeswijk's JELIA article[2] would have something of an odyssey (too tortuous to merit repetition) before, eventually becoming the article which was the second[3] of our AIJ argumentation collaborations.[4] For me what matters in this article is not the dense, technical exposition, but the constant support emphasising the relevance to computational argument: this was always something that Trevor considered important and needed.

At the 2002 NMR workshop on Argument, Dialogue and Decision, Trevor presented the first details of the argumentation model which would dominate much of his subsequent work: Value-Based Argumentation Frameworks[5] expanding on the ideas in the subsequent journal paper.[6] This offered a formal and coherent rationale for the acceptability of, apparently, inconsistent beliefs: by associating qualitative values with arguments different concepts of "acceptable positions" are explained as the result of different value orderings. It would be fair to say that this concept was not, at first, greeted with universal

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[1]*Coherence in Finite Argument Systems*, Artificial Intelligence, 41(1–2), 2002, 187–203.

[2]*Credulous and sceptical argument games for preferred semantics*, JELIA, Malaga, September 2000, LNAI 1919, pages 239–253.

[3]Strictly speaking the third AIJ article Trevor and I worked together on, if one counts the (non computational argument) "*paper that has yet to be cited*" as Trevor was fond of calling it!

[4]*Two party immediate response disputes: Properties and efficiency*. Artificial Intelligence, 149(2), 221–250, 2003.

[5]*Value-based argumentation frameworks*. NMR 2002: 443–454.

[6]*Persuasion in practical argument using value-based argumentation frameworks*. Journal of Logic and Computation 13 (3), 429–448.

acceptance, but this is not the place to rake over these debates. It is the case, however, that the concept of value-based frameworks would underpin a substantial quantity of later work: from new treatments of classical legal dilemmas to detailed analyses of debate and dialogue mechanisms.

Trevor's was a major influence in establishing COMMA as a regular event. Part of Liverpool's involvement in the ASPIC project had been an undertaking to host an international conference on Computational Argument. Following on from a small workshop run as part of the International AI and Law conference in 2005[7] the inaugural COMMA was held at Liverpool in September 2006. Although there had been neither plans nor commitment to further meetings, the success of this meeting would lead to plans and discussions amongst participants which would result in a second (Toulouse, 2008) and further meetings. There can be no doubt that Trevor's influence was a dominant factor in COMMA becoming a regular biennial event and a natural first choice for dissemination of work in the field. A further significant contribution was his part as the joint editor (and contributor to) the Special Issue of Artificial Intelligence Journal that appeared in 2007.[8] The twelve articles comprising this issue gave a powerful sense of just how significant Computational Argument was as a subfield of AI. In my view, the definitive and best of our joint papers in the field of computational argument is our introduction to this Special Issue.[9] It remains, almost 20 years on, by far my most widely cited article and, is in my view, a superb illustration of how two people with very different specialist backgrounds can work together to produce something of lasting value.

1.2. Words by Katie Atkinson

My own academic journey started with encouragement from Trevor to pursue a PhD in computational models of argument, which I did under the supervision of Trevor and Peter McBurney. Our work spanned developments on dialogues, argumentation schemes and application scenarios for value-based practical reasoning.

Trevor developed his original work on value-based argumentation frameworks prior to us working together and following the conclusion of my PhD, by 2006 we were searching for a more formal basis for representing value-based reasoning. I proposed the idea to Trevor of using transition systems to provide this formal basis and he was very excited by this. Together we worked up our account of representing valued-based practical reasoning as an Action-based Alternating Transition System that was published in the Artificial Intelligence journal in 2007.[10] Whilst we have published a significant number of papers together, Trevor often cited this as one of his favourite pieces of joint work that we undertook.

When presenting at conferences our early work on representing value-based argument, we would frequently be asked what was meant by the notion of a value and how this could be captured formally. On one occasion after receiving this question yet again, Trevor commented to me that he was convinced that the day would come when value-based reasoning would become more mainstream in AI and that its time was yet to come. How right he was. With modern AI, questions of ethics, values and explainability are now ubiquitous topics of investigation.

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[7]*Argumentation in AI and Law*, (eds: P. Dunne and T. Bench-Capon), Workshop at 2005 ICAIL, Bologna. Wolf Legal Publishers.

[8]Special Issue on Argumentation in Artificial Intelligence, 171(10–15), July–October 2007.

[9]*Argumentation in artificial intelligence*. Artificial intelligence, 171(10–15), 619–641.

[10]Katie Atkinson, Trevor J. M. Bench-Capon: Practical reasoning as presumptive argumentation using action based alternating transition systems. Artificial Intelligence. 171(10–15): 855–874 (2007).

Whilst Trevor was highly dedicated to his own research programme, he felt strongly about supporting the development of focussed research communities. His legacy is not only his impressive oeuvre of publications, but also the lasting impacts he leaves behind from his significant contributions to establishing and supporting the COMMA community. He will be missed, but his contributions will endure through the community.