



PROFILE

Interview with Prof. Jeroen van den Hoven on “Why do Ethics and Values Matter in Business and Information Systems Engineering?”

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Jeroen van den Hoven is university professor at Delft University of Technology and full professor of ethics and technology. He is the founding editor in chief of Ethics and Information Technology (Springer). He was the founding scientific director of 3TU. Centre for Ethics and Technology (2007–2013). In 2009, he won the World Technology

Award for Ethics as well as the IFIP prize for ICT and Society for his work in Ethics and ICT. Jeroen van den Hoven was founder, and until 2016 program chair, of the Dutch Research Council on Responsible Innovation. He chaired the expert group on Responsible Research and Innovation for the European Commission, served as member of ISTAG and is member of an ethics advisory group of the European Data Protection Supervisor 2016–2018. In March 2017 he was appointed by the European Commission as member of the European Group on Ethics.

BISE: Mr. van den Hoven, your background is ethics and philosophy. When did you start thinking about ICT as an important area of research? What were the reasons for you to focus your research on ICT?

van den Hoven: I first started to look at computers and information and communication technology around 1985, some thirty years ago, when I was an assistant professor and was teaching Ethics at Erasmus University Rotterdam in The Netherlands. I was teaching philosophy of mind and philosophy of AI at that time. The debates about AI were dominated by people like Dennett, Minsky and John Searle, who famously introduced the Chinese Room argument and argued that no amount of symbol manipulation of Chinese characters in accordance with rules can constitute real understanding of Chinese: Syntax is not sufficient for semantics, computation is not sufficient for consciousness. I was not satisfied with these philosophical debates. They seemed to be making interesting philosophical points, but they also to me seemed to miss a very important point, namely: that the computer would change the world completely, the way we think, work, communicate, and organize ourselves. Decades of metaphysics and philosophy of mind have not prepared us well for the problems that we are confronted with today and with which we will have to

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deal in the remainder of the 21st century. I think Wittgenstein would have agreed with Edgser Dijkstra – a famous Dutch Computer Scientist, Turing Award winner and pioneer of Software Verification – when he remarked that debates about whether computers can think are as interesting as the question whether submarines can swim. That is just not how we use the word ‘swim’. It is an example of a philosophical puzzle that is of our own making because our language goes on holiday and we use words outside of the language game where they have their home. We end up going in circles like a fly in the fly bottle and we can not get out. It was fully clear to me at that time that the computer – irrespective of the outcomes of this philosophical debate about the nature of consciousness, symbolic AI, PDP and neural nets – would completely change society, that information and communication technology would raise deep moral and societal problems, that it would require new laws, new institutions, and new ways of thinking. I was intrigued by the extraordinary functionality that would soon become available and by the way it would change our life world, irrespective of whether we could call it ‘thinking’ or not. My colleagues at the philosophy department thought I was just spending my time on a fashionable topic that would blow over soon and would leave me empty-handed. But I wanted to have some positive impact on the real world with my research and thought that this was one of the important fields where the rubber would hit the road: Ethics and IT, moral philosophy and digital technology. In 2000 I founded the Springer Journal Ethics and Information Technology.

My PhD thesis research that I started in the early nineties was concerned with methods in applied ethics and I focused on a set of moral problems raised by IT to validate the selected methods. Gradually I became interested in the IT problems in their own right, and not just as test cases for ethical methods for justifying moral judgements. I looked at the application of philosophical ideas and moral theory to problems such as privacy, dependence on expert systems, the digital divide, and democracy. The nature of the work I did on these problems was aiming primarily at clarifying the issues in such a way that IT professionals, legal scholars and policy makers could see more clearly what the problem was and how they could arrive at satisfactory solutions. I think that many of the ideas I had at that time are still valid.

BISE: In your work you emphasize that the design of information technology and information systems is “value-laden”. What exactly do you mean by that? What kind of values do you consider? Can you provide some examples?

van den Hoven: Every design, artifact, system is shaped by the values, ideas and world views of the designer and builder. That applies to architecture, software engineering, product design, synthetic biology, material science and

civil engineering. A design is a consolidated set of choices made by designers, developers and engineers. Via their designs for systems and artifacts they come to have an incredible impact on the lives of others: cables, code, search and reach algorithms, standards, ontologies, authorization matrices, menus, voting procedures, aggregation mechanisms, recommender systems, reputation systems. These are all formidable shapers of the world we inhabit and in which we acquire our beliefs, decide and act, expect, feel, and hope. As Winston Churchill famously remarked: first we shape our houses and then our houses start to shape us. High tech environments form our “choice architectures” (Thaler and Sunstein 2008), our “wideware” and perhaps in a sense our “extended mind” (Clark and Chalmers 1998). In order to shape these environments in which we will function as moral beings in a responsible way, we need to express or “design in” our shared moral values. Values should therefore be seen as a sort of supra- or non-functional requirements for which we can and ought to design. It will become more and more important in the future to be able to design systematically for moral, legal and social requirements. In our Springer Handbook on Ethics, Values and Technological Design, we provide and discuss many examples and case studies of how that can work.

BISE: You were also one of the key drivers of the “value-sensitive design” movement? Can you elaborate on this a little bit? What were the core ideas and principles of this and how has it been applied?

van den Hoven: I think there have been a number of starting points of this development, which I like to refer to as the “Design Turn in Applied Ethics”. An edited volume on this design thinking in Ethics is appearing this year with Cambridge University Press. We can find the idea that ideologies, values, worldviews can be propagated, furthered and supported by engineering design in the work of many writers on the history of technology, e.g., Lewis Mumford, Jane Jacobs, Karl Witfogel who famously argued that ancient civilizations (Mesopotamia, Egypt, China) wielded power on the base of their large scale water management systems. He called them hydraulic empires. Langdon Winner argued in the eighties that “artifacts have politics” and that they can serve political views. On a more positive note some groups in computer science in the US in the eighties and nineties (e.g., Terry Winograd at Stanford) started to look at how one could be more inclusive in one’s design of computer technology. A large research initiative was established in the nineties in California Berkeley by the Centre for IT Research in the Interest of Society (CITRIS), which exemplified the same idea. Legal scholars became aware of the fact that often we regulate society via code (“Code as Law”). I think one of the best examples of how this plays itself out in computer science is “Privacy by

Design”, or “Privacy Enhancing Technology”. We now find many instances of the general schema “Design for x”, where x ranges over the set of moral values: design for inclusion, design for sustainability, accountability, etc. Since then, Batya Friedman, Helen Nissenbaum, and some others have been driving this in the USA in the field of computer science. In Europe we have been involved in extending this idea to other engineering disciplines. This is one of the most promising ways in which ethics can be relevant in the 21st century, being close to technology in a meaningful and useful way. Recently IEEE Standards – inspired by this work and research – have started to think about what they termed ‘Ethically aligned design’. Again, how we call it does not matter so much, it is the idea and its implementation that counts.

BISE: Recently, you coined the term “responsible innovation”. What is responsible innovation and how does it differ from value-sensitive design? What needs to be changed in research and practice in order to increase “responsibility” in ICT innovation processes?

van den Hoven: The idea of responsible innovation is the following. Innovation is usually not so concerned with ethics and responsibility. Typically, the focus is on exhilarating new functionality: “If we have gadget X, we could do Y more quickly, more efficiently, etc. Oh, and by the way, it will make us all rich in no time”. It is often suggested that innovation is good per se, but that is a mistake. It is open to the so-called “open question argument”: “This is innovative, but is it good?” Many innovations of the past have led to the problems we have today. We have only to think about the atom bomb, DDT, Asbestos, thumbscrews to realize that one of the first questions that we should ask is: is this new technology morally acceptable and is it going to contribute to solving some of our big problems in the world, without creating new problems or making other ones worse? So Responsible Innovation takes a moral aim: the UN Sustainable Development Goals, let’s say. A consolidated list of huge and urgent problems the world has to address without delay. Secondly, it proceeds in a responsible manner, in a fashion that is open and transparent, well considered, looking at effects and risks for future users and indirect stakeholders, etc. It is multidisciplinary, is anticipatory and tries to do all of this preferably before it is too late. An important and novel dimension of Responsible Innovation, I suggest, is that innovation may help us to reconcile conflicting values by design. We may try to accommodate as many values as we can at the same time: privacy and security, economic prosperity and sustainability. It is not necessarily “Either Or”, but possibly “And And”. We are looking for new functionality and smart solutions that allow us to have our cake and eat it and help us prevent having to make tragic choices. A

smart invention changes the world in such a way that it now allows us to do more of the things we ought to do: e.g., accommodate privacy concerns and make use of Big Data. There is no guarantee that this will always be possible. But if the stakes are high enough we have an obligation to explore whether there are such solutions. Value-sensitive design refers to a method or a set of methods that can be deployed to innovate responsibly and do so systematically, transparently and accountably, instead of opaquely and haphazardly. Benches in the park are designed in such a way as to prevent homeless people to lie down on them. A value is expressed in the design, but that is not sufficient to make it a responsible innovation. There are also many examples of dubious values being designed in (designed for addiction). So I think that all responsible innovation exemplifies some design for values, but not all design for values amounts to responsible innovation.

BISE: You are involved in several initiatives on the European and global level dealing with Ethics and ICT. What are the most important initiatives and what do they aim for?

van den Hoven: I think there are a number of exciting and much needed developments. Together with some European colleagues we have drafted a Manifesto that expresses our concerns about Democracy in the Digital Age. It has been published by Scientific American under the Title “Will Democracy Survive Big Data and AI?” These ideas about big nudging, voter manipulation, fake news, filter bubbles, political and social polarization, are getting some attention and traction. What we see in the online world and social media is something that Habermas could not have foreseen when he wrote “Strukturwandel der Oeffentlichkeit” in 1962, but the core ideas are still relevant. I am also part of an Ethics advisory group to the European Data Protection Supervisor, Giovanni Buttarelli. He has called attention to the need for ethical analysis of new digital technologies. He is absolutely right in that vision. We need to think, e.g., about what human dignity means in the age of intelligent and autonomous machines which may replace us and outsmart us, not only at chess or Go. In Delft we are also working on Massive Open Online Deliberation (MOODs) Platforms, the Wikipedia for opinions and dialogue. I think this is also a necessary step that we will have to make to keep Democracy alive in the 21st century. We also have established an interdisciplinary institute “Delft Design for Values”. So these are a couple of the interesting developments that I am involved in right now.

BISE: You are member of the “Faculty of Technology, Policy and Management (TPM)” at Delft University. In this interdisciplinary faculty engineering sciences are integrated with humanities and the social sciences. What

are your experiences with this non-standard setup? Does it help you to bring together the different perspectives on ethics and technology?

van den Hoven: Multidisciplinary and interdisciplinary collaboration is very important. This is a much needed development in academia. The solution to the big and urgent problems in the world will not be found in one discipline, in one journal or in one book. Moreover, adequate solutions will always be systems solutions, and they will most likely deal with technology and human behavior with values and norms. Science, social science and humanities – no solution to real world problems will be adequate if it does not comprise these perspectives. We call this in Delft: “Comprehensive Engineering”. I think we are slowly getting better at organizing ourselves around these topics and involving a wide range of experts. For example, in Delft we have started with Vision Teams which are formed by top experts from a range of different disciplines and specializations. Topics are, e.g.: Energy Transition, Quantum Computing, Robotics. They look at urgent and important societal issues, where Delft University of Technology is uniquely positioned to offer comprehensive analyses and perhaps even suggestions for comprehensive solutions. In order to do this work we have to overcome petty politics, rent seeking, distrust, unproductive competition and move towards a trusting, sharing and open academic environment.

BISE: The BISE community has a long tradition of understanding and designing information systems from a social-technical perspective. I believe that we could contribute a lot to the existing stream of research on ethics and values. What are important future areas of research in order to better integrate ethics and values into the field?

van den Hoven: Education is important. We need to train and educate the new generation of developers, designers and managers to systematically and confidently address these moral dimensions of their work. Curriculum development in accordance with the best practices and standards in the field is therefore very important. Secondly,

we are also well advised to work on methodology and methods to actually practice Design for Values and integrate them into standard software engineering methodology and systems development and architecture approaches. IEEE standards have initially started this development. One important area of research could be to design and evaluate agile methodology and methods for value-sensitive design. In order to make progress I also suggest to leave academia from time to time and work with industry and society, e.g., in living labs. It is also important to convince the IT industry of the fact that since they are not into the morally neutral business of selling shoe laces (although even something so seemingly trivial as producing shoe laces comes with an ecological footprint), but that they are producing and selling stuff that forms the fabric of modern societies, and that they need to take responsibility. The fossil fuel industry took responsibility for climate change too late. A similar gradual deterioration of a public good and commons is taking place now before our eyes: the invasion of the human lifeworld and our societies with digital products and services that have not been conceived to contribute positively to society. A third development which is important is that we draw the attention of policy makers and politicians to the fact that this is where the building of a happy population, a just society and thriving economy starts in the 21st century: with responsible digital innovations and design of IT services and products which express our shared moral values

BISE: Mr. van den Hoven, thank you very much for your time and for this interview.

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