How Universities Mirror Society

About the cover

The cover image juxtaposes two origins of intelligence. On the left is the image of Adam, painted by Michelangelo in the Sistine Chapel, representing the origin of humanity as something created and bestowed. On the right is an image of a humanoid robot generated by ChatGPT, symbolising humanity's capacity to harness artificial intelligence as a creative force.
In between these images, two young students approach the university, representing a new generation that must find ways to navigate the tension between these extremes. The university symbolises a reflective space where these opposites converge: a place for critical thought, ethical discernment, and the ongoing redefinition of what it means to be human in an age of artificial creation.

HOW UNIVERSITIES MIRROR SOCIETY

The Impact of Artificial Intelligence on Academic Research, Education and our Conception of the Human Being

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Contents

Introductory Note

The book before you is the English edition of *De universiteit als spiegel van de samenleving*, which was developed in parallel and originally published by Open Press TiU. The decision to work simultaneously in both Dutch and English reflects the specific context of the book: while the subject matter is closely connected to the Dutch academic and societal context, the working and teaching language at Dutch universities and many institutions of higher professional education (HBO) is predominantly English.

As authors, we wish to emphasise that neither publication is intended as a concluding statement on the subject discussed. Rather, both texts aim to stimulate further reflection and discussion, broadening and deepening insights into the interaction between artificial intelligence and changing conceptions of the human person, and thereby contributing to a more precise understanding of the future role of the university in this regard.

The initial idea for writing this book arose from the observation that universities are currently experiencing particularly turbulent and eventful times. This realisation led to a shared sense of astonishment – bordering at times on concern – about developments within universities themselves: about the ways in which difficult decisions have been made under financial pressure, about international tensions that have sparked protests on campuses and affected international collaborations. Above all, it concerned the remarkable speed with which artificial intelligence

(AI) has taken hold of society and, consequently, of education and research within universities, while also influencing our understanding of human nature and our conception of the self.

At the level of the broader perspective – namely, the effects of AI on the development and application of general knowledge as an epistemic enterprise – many questions remain open, and speculation is widespread across the globe as to whether AI might eventually render human thinking and decision-making obsolete. Such speculation generates considerable tension. The academic world perceives a potential threat to its very existence, while simultaneously recognising opportunities to reinvent itself. These tensions are discussed extensively in this book.

The emergence of this book is rooted in the transformations brought about by AI, in which societal trends and developments within universities seem to mirror one another. Both in academia and in society more broadly, conceptions of the human being are changing as humans are increasingly compared with systems and processes associated with AI. Expectations regarding the application of AI continue to rise, and the question whether the growing use of AI requires different forms of leadership is becoming increasingly pressing. Although the book was written within a relatively short period of time, it draws upon intellectual sources that have been developed within the respective academic fields for many years, and in some cases even centuries.

Coming from different backgrounds, i.e. the humanities, the natural sciences, and business administration, our ideas intersected in unexpected places. Concepts developed within our respective academic disciplines or professional practices were enriched and deepened by engaging them with ideas concerning AI, education, research, and the conceptions of the human

being shaped by these developments within the disciplines of our interlocutors. To a significant extent, the process was characterised by a highly stimulating form of serendipity: the accidental discovery of something valuable while not initially searching for anything specific.

Developments in AI are unfolding at a dizzying pace. Almost every day brings new developments worthy of attention. Will binding AI regulations be introduced, or not? In what way can academic research and education be enriched through AI-based methods? Will the technological bubble burst, or will developments continue to accelerate? Likewise, the questions confronting universities have not yet found definitive answers. Will the anticipated budget cuts be implemented, and if so, in what form? And how can universities navigate these turbulent times? For this reason, we have chosen to conclude with an open ending – one that serves as a prelude to further questions.

Foreword

In his important book *Wisdom's Workshop: The Rise of the Modern University*, James Axtell observes: "All universities are shaped by and must respond to the ambient conditions of their times, otherwise they wither and die." (Axtell, 2016, p. 44). This encouraging observation is substantiated with extensive historical analyses. He, for instance, supports the claim that medieval universities were already confronted with developments that placed nothing less than their "very existence" at stake. More than once, these developments were technological in nature. In the fifteenth century ("a fast moving century," sic!), universities such as Oxford and Cambridge experienced the rise of the printed book: "the replacement of manuscript texts with smaller, less expensive books made possible [by] movable-type printing." This had consequences for the ways in which knowledge was disseminated. It became more accessible. The authors of the present volume would speak of changes in the "gatekeeping function" of universities. Change is a phenomenon of all times, and the fact that many universities have endured its dynamics for centuries may be a source of hope. Nevertheless, vigilance is required.

In keeping with the best traditions of sound scholarly research on the significance of technological developments, Axtell clearly demonstrates that the emergence and impact of such developments are, to a large extent, constituted by a frequently complex interplay of socio-economic and political relations (which some-

times also substantially influence the ways in which these technologies themselves develop). Technology is not neutral; it is closely connected to forms of power formation in the economic and political domains, and can support and engender very specific goals. The independence of universities was already vulnerable in those days: dependence on the authorities of the time – who, especially through financial means, were able to force universities into royal straitjackets – was growing. Henry VIII in particular (who reigned from 1509 to 1547) proved highly adept at manipulating universities: "The bear hug in which he embraced the universities made it difficult for them to distinguish affection from coercion" (Axtell, p. 45).

The book before you may likewise be called important, and I therefore warmly commend it to your attention. It demonstrates with equal force and thoroughness that, as a society – and universities in particular – we must once again exercise considerable vigilance in order to protect our institutional distinctiveness, independence, and core mission. Governments still require our continuing alertness, but increasingly large technology companies also demand our attention. They develop and exploit technologies that fundamentally affect the ways in which education and research within universities are organised. Artificial intelligence does not appear to be merely another technological development or application; rather, it is one that, even more than before, calls for our particular attention because of its disruptive as well as deeply penetrating effects on the way we learn, teach, and investigate.

The book before you offers a highly welcome, critical, and fundamental reflection on a technology that, according to some, places the very *raison d'être* of universities at stake. In some

places, the debate has already begun in earnest, and from within our own university there have also been – sometimes quite far-reaching – calls to prioritise this debate (Van Laarhoven & Van Vugt, 2025, pp. 2750–2762). Artificial intelligence, among other things, is said to lead to cognitive laziness and to create substantial challenges with regard to questions of scientific integrity.

Indeed, there is work to be done: the Netherlands Scientific Council for Government Policy (Wetenschappelijke Raad voor Regeringsbeleid) has rightly characterised AI as a "system technology," whose operation penetrates deeply into processes and activities that once had little to fear from the steam engine or the typewriter. No discipline escapes its influence. Discussions with and among the chairs of our examination boards have been ongoing for some time, and the first questions about how we can comply with the emerging European legislation are already being placed insistently on administrative agendas.

This legislation is informed by the question of which (European) values we must protect – once again in light of this new technological development. Here the fundamental character of the work presented in this publication proves particularly valuable. It situates the rise of AI within the historical and recent context of the institutional history of universities and rightly asks which idea of the university is promoted by AI – or, conversely, which comes under pressure. In doing so, the authors look beyond the narrow confines of their own institution and explicitly attend to the broader system within which universities must function: nationally, across Europe, and internationally. The rise of AI currently generates more questions than answers at all these levels, compelling us to reflect on where the essential

value of a university lies and which fundamental values, on that basis, may deserve additional protection. Particularly important is the insight that universities not only develop and transmit knowledge but also, in the words of the authors, "safeguard the conditions under which reliable, critical, and meaningful knowledge can emerge," thereby promoting "methodical doubt, plurality, slow thinking, and careful evaluation."

The book's extensive description and analysis of what AI actually is and entails subsequently serves as a source of critical reflection and, at times, of concrete recommendations for various groups within the academic community, such as students, researchers, and teachers. In doing so, the authors do not hesitate to problematise further algorithmisation from the perspective of the human image: the model of the human being is considerably more complex than a language model. Views on thinking and on the essential nature of the human person are discussed at length. This too provides a fertile basis for analysing and placing on the agenda the dimensions of what may become highly problematic if the various manifestations of AI are embraced uncritically.

In my view, the perspective of making explicit the underlying conception of the human being is a highly fruitful – and indeed fundamental – way of framing further discussions: it looks beyond the latest release or version of technological applications and instead calls urgent attention to the more essential questions that arise. These questions are, of course, far from being fully answered; indeed, they may not even have been fully articulated. Yet there is work to be done, particularly for a university such as ours, which neither wishes nor is able to evade the important role of law, religion, and ethics in such discussions. For all those who

bear administrative responsibilities within universities, this book is equally important. How do we inspire, how do we safeguard, and how do we guide the university towards and within a future in which – once again – a technology penetrates deeply into its core practices?

I would like to thank the authors for their commitment to bringing this publication into being. It has become a rich and fundamental reflection which, for our nearly century-old university – currently preparing for a renewed reflection on its strategic priorities – provides an excellent source for further thinking and discussion about what presents itself as an essential task: to further develop and protect the essence of the university in a time that, much like technology itself, is marked by strongly disruptive elements and developments. The fact that it has been written in constructive collaboration by a scientist, a business scholar, and a church historian/theologian once again demonstrates how essential work requires cooperation across distinct academic disciplines.

Wim van de Donk

Wim van de Donk (1962) is Professor of Public Administration, Rector Magnificus, and President of the Executive Board of Tilburg University. Previously he served as Chair of the Netherlands Scientific Council for Government Policy (Wetenschappelijke Raad voor het Regeringsbeleid, 2004–2009) and as the King's (formerly Queen's) Commissioner in the province of North Brabant (2009–2020).

The University in the Information Age: An Introduction

A Past and a Mission

The university is one of the oldest institutions of our civilisation. Together with the army and the church, it belongs to the rare institutions that span centuries without losing their core and mission. Where kingdoms became republics, political parties soon merged into other parties after their founding, and companies generally do not withstand the test of time for long, the university persisted as *alma mater*, as a nurturing mother who for generations has connected research, education, and critical reflection in their pursuit of truth and insight. Thus, it became and remained the guardian of knowledge, culture, and civilisation itself.

Its outward form changed, the number of scientific disciplines increased, and its students became more diverse over the centuries. Yet the mission remained unequivocal: the expansion, deepening, and transmission of knowledge and understanding. Whereas in the Middle Ages the aim of the university was initially to discern the order given by God in creation, in history, as well as in human beings themselves, this aim would later change. It became the university's task to describe the coherence of all things and all beings – or causal relations – *etsi Deus non daretur*:

as if no God lay at the foundation of this coherence. On this basis the legal system was developed. This did not prevent Georges Lemaître (1894–1966), the "discoverer" of the primeval atom – a compact state from which the universe began to expand as in a Big Bang – from not only being an astronomer and physicist but also a theologian and Catholic priest. He is proof that the university, as a space for academic formation and personal growth, has connected – and continues to connect – scientific knowledge, critical reflection, and philosophical or religious depth in the broadest sense.

Today this mission is under pressure as rarely before. The university finds itself in a world that is rewriting its premises: a world in which knowledge is everywhere, can be generated by anyone, and in which even non-human systems produce new knowledge. Until the advent of AI, the capacity to acquire and transmit knowledge was reserved for the phenomenon of the human being: "an animal endowed with reason," as Aristotle formulated it in order to distinguish human beings from other living creatures. Precisely because humanity has now entered a phase in history in which technology produces knowledge and insight as well, we are compelled to radically reconsider knowledge as the product of human thinking, and of this thinking alone. Having reached this point, the role of the university must therefore also be reconsidered.

The Monopoly on Knowledge

Throughout the centuries, the acquisition of knowledge seemed to be reserved for a kind of elite. In his *Vita Karoli Magni*, Einhard writes that Charlemagne, although interested in reading

– and even somewhat proficient in Latin – never mastered writing, not even when he began to practise it at night in his old age. The development and transmission of knowledge was almost exclusively the domain of the clergy. When universities were founded in the High Middle Ages, clerics determined how these institutions were organised. Although the advent of the printing press began to undermine this exclusivity – knowledge became reproducible and accessible on a larger scale – it still remained in the hands of an elite, because not everyone had learned to read and write yet.

Moreover, the speed and manner in which knowledge was expanded or disseminated bore no comparison to the way in which this occurs today. Renaissance popes had to make great efforts to gather manuscripts and incunabula in one place: their library. Scholars were forced to travel for days along poorly passable roads and, in the words of Desiderius Erasmus, to spend the night in inns with "stinking stoves" in order to increase their knowledge in a particular place. Today, with a single search query on a smartphone or a prompt in a language model, we have access to libraries, databases, simulations, code, translations, and conceptual frameworks. Generative AI technologies such as ChatGPT, Claude, or Gemini produce texts, designs, research proposals, syntheses of scientific literature, or even mathematical proofs in seconds.

The University as Gatekeeper?

Where universities once held a monopoly over knowledge, the gates of the knowledge institutions that universities are now, seem to have been forced wide open. University communities

are being flooded with knowledge that they have not brought forth themselves – paradoxically through the efforts of university-trained individuals. On the one hand, AI is a subject of academic research; on the other, it is a technology that puts pressure on the exclusivity of university knowledge production. Whereas universities long possessed a quasi-monopoly on the production, validation, and dissemination of knowledge, AI appears to decentralise these functions. Knowledge thus becomes increasingly accessible to broader segments of society, with far-reaching implications for the status, function, and identity of the university as an institution.

Students, moreover, no longer need to sit at the feet of the teacher if they wish, for example, to understand the universalizability maxim or the maxim of human dignity developed by the German philosopher Immanuel Kant. A well-formulated prompt suffices. Researchers themselves can also make use of systems that take over parts of their task: systems that analyse literature or even direct empirical research. AlphaFold, for example, is DeepMind's AI system that can predict the structure of proteins with unprecedented accuracy. Where scientists once required years of laboratory research, AlphaFold offers within seconds models that open the door to new medicines and treatments. For the judiciary, AI systems generate summaries of case law, detect bias in judgments, or assist in drafting contracts. In this respect the university as a nurturing mother plays hardly any role at all. "Times change and we change with them," Augustine remarked in his *Sermon 80*, delivered at a time when the Roman Empire was more or less collapsing.

The Aim of This Book

This book centres on the question of what the consequences of AI are for the institution that for centuries held the patent on knowledge and successfully maintained the monopoly of gatekeeping. Should the university resist AI in order ultimately to regain its monopoly position in the expansion of knowledge? Or should it become a place where the function and essence of AI are critically and reflectively examined? What are the consequences of AI for the organisation of our education and research? Should education radically reinvent itself? Why continue writing essays if AI does it better? Research, too, faces questions, such as: Who is the author when AI co-writes? What does peer review mean when the "peers" are partly artificial? What is the status of "knowledge" generated by a non-human source? And therefore also: Why should citizens trust experts if AI can deliver comparable analyses in more comprehensible language or provide a sharper diagnosis?

This book is best read as a plea for the university as a reflexive space. Because so much knowledge is generated, meta-knowledge – insight into how, why, and for what purpose knowledge is formed – is urgently needed. The university should become a place, a laboratory, in which successive generations learn to assess the value of the knowledge produced within and beyond the university – value in the broadest sense of the word.

It is necessary for the university to reinvent itself. It is no longer the exclusive gatekeeper but must develop as a giver of meaning: as a nurturing mother that provides the space to judge the scientific and moral quality of the knowledge produced and the streams of information that circulate. Are these not some-