

# Preface

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The stimuli for the writing of a wide-ranging book on automated mobilities at this specific juncture have been the recent intensive international efforts to develop and introduce *autonomous vehicles* (AVs), also known as self-driving cars or as driverless cars. The very idea of autonomous vehicles is not new, but whereas this notion until recently mainly referred to underwater unstaffed autonomous submarines, recently the term has become widely used for driverless cars.

Autonomous mobility via AVs, as well as via other mobility modes, constitutes the most advanced level for the wider range of automated mobility modes and technologies. Hence, the basic idea behind this book is to explore the numerous dimensions and applications of automation that have emerged within a wide spectrum of mobility modes, assuming that they may eventually culminate in the introduction and the possible wide adoption of AVs. Put another way: a basic assumption for this study is that the upcoming fully automated vehicle will not constitute a stand-alone innovation and mobility newness. It will rather present a peak for some long-standing efforts towards the introduction and incorporation of partial and full automation systems into mechanized mobility modes, as well as into the control of their traffic.

Spatial mobility in this book refers to transportation modes for the moving of both people and freight, side by side with human natural movements. Furthermore, mobility here includes the transmission of information, as well. At the time of writing, it was too early to speculate thoroughly on the possible reciprocal impacts of widely adopted AVs on other mobility modes, notably on human walking, as well as on virtual mobilities. It is especially intriguing to see whether a wide adoption of AVs will bring about less or more walking. In addition, and as we will see, it is assumed already now, prior to the commercial introduction of AVs, that the adoption of AVs will bring about more extensive virtual mobility, to be pursued by individuals. However, it is still not clear what will be the exact patterns of this additional virtual mobility, even though commuters will be able to work while riding driverless cars.

Several of the automated mobility and mobility control modes presented in this book, notably the exposition of AVs in Chapter 6, were still

under development at the time of writing this book (2017), and AVs were expected, by then, to be commercially introduced several years later, probably in 2022–2025. Thus, we may still expect some technological changes, beyond those mentioned in Chapter 6, which can be developed prior to AV introduction, and which may carry with them some human and social implications.

This book extends my long-standing work in the two emerging and interrelated fields of personal mobilities and the geography of the Internet. My claim over the years has been that physical and virtual personal mobilities should be viewed as two sides of the same coin. In this book, the notion of automation is the focus, and it is discussed for these two sides of the personal mobility coin. The discussions in the following chapters will culminate with the exposition of AVs, which are meant for physical mobility, but at the same time are heavily based on IT, communications, and artificial intelligence. AVs will be used for personal mobility, as well as for public transportation and freight haul. With a focus on automation in mobility at large, the book will discuss numerous transportation systems, such as autopilots, drones, and traffic lights.

The primary audience for this book will be academics, as well as practitioners, in the fields of mobility, transportation, urban planning, geography, and sociology. Professionals in these diverse fields may find an interest in automated mobilities in one or more of its three dimensions: technology, space, and people. Thus, the scope of the book chapters will be broad, presenting both a wide range of topics and extensive relevant literature sources. So far, there are probably no academic courses offered on automated mobility other than in engineering. However, with the growing interest in the upcoming AVs, the topic may find its way into courses in mobility studies, as well as into courses in transportation, geography, and planning programs.

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