Foreword

Enhancing humans with technology often sounds a bit like ominous science fiction. The warnings of culture from *Frankenstein* to *Terminator* show that messing with nature always has unforeseen consequences for individuals and humanity. However, these are stories, and all stories need a dramatic arc. The real story of technological enhancement is the mundane acceptance of technology into our lives: the exotic new technology becomes the norm; it is adopted, accepted, and then, unquestioned.

Sitting in my favorite cafe with these words, I admit to being a technologically enhanced human; actually, we all are. From the cappuccino maker to the air conditioner, we use technology and its know-how to shape nature, create experiences and sensations. Yet, the technological world on this level no longer excites us.

I am wearing thin, pliable, hydrophilic plastic on my eyes in order to see. Sound exotic? They’re just plain, old contact lenses. I am writing on a multi-touch screen with a virtual keyboard, a device we call a tablet, and communicating simultaneously with humans across several time zones and an ocean on my portable computer, my smartphone. We are all technologically enhanced humans, but because we have begun to accept this as the norm, we may no longer question how technology is changing and shaping our lives, impacting our humanity.

My work deals with the impact of technology on everyday life: how we use it, and how it controls us; we are controlled by what the technology will allow us to do. Yet, the point is not to fear or turn down technology, but to adopt it thoughtfully and knowingly. Ranging from Google Glass to cybersoldiers, from neurosurgery to the *singularity*, scholars in this book lay out the arguments and issues that arise from our quest to rapidly adopt technology in order to help improve the human condition. This drive begs the question, In the endless chain of emerging enhancements, at what point are we no longer just humans? When do we become humans 2.0? What will it all mean?

As we move towards future technologies that will be more closely integrated to our physical bodies than ever before, we need to discuss and explore ethical, legal, and social issues these technological advances will bring. This is where the collection of authors in this book excels. This book covers the current and emerging field of human enhancement technologies and provides a readable, in-depth analysis of the vital questions our technology adoption brings to us.

Over the past two decades, we have seen technology become connected, more personal, more mobile, and increasingly a part of our selves. Our smartphones are an extension of our minds; yet, the smartphone is primitive compared to what we are looking at in this collection. We are not only using technology but we are becoming *technological beings*. This is why this work is important. It looks at what our next technological steps will mean to us – how we will be defined and what we are individually, and collectively, as a result of this transformation.
Each technological step brings with it a range of new questions, some more uncomfortable than others. They need to be explored and examined in order for us to understand the implications of where we are going. This book deals with fascinating new problems in the privacy debate and far-reaching effects of enhanced citizens acting in their political sphere. Who will own technology embedded into our bodies? Who will own the data it generates? How will this affect privacy, surveillance, and control? Will the technology be connected to the Internet, and if so, what happens when our internal technology is hacked?

This book records how the ability to enhance humans and machines creates new issues when defining and analyzing disability and points to ethical boundaries for our desire for bodily perfection. Our quest for perfection not only changes our appearance or physical prowess, but with the ability to use neurosurgery to enhance our brain functions, there is a deep need for further reflection. In general, this becomes an exploration into what is—and will be—involving in technology enhancing humans to the elusive prospect of living up to become “the ideal human.”

News reports today contend that Google Glass is being readily adopted in educational settings, including elementary schools; yet, it is easy to ask how far participants have explored the full ethical implications of such actions. Some answers lie herein, as this work provides chapters that explore ethics of wearable technologies. Naturally, these technologies will not only be used for educational or peaceful ends. Improving military might and ability has always been a driver of technology. Whether we strive to create cyborg warriors or “only” to enhance humans fighting today, these actions raise a host of important questions.

One way of charting our discussion is to map out human enhancement rhetoric, what it defines and what these definitions entail, or we can address the questions of the future of self-determination and argue that enhancing humans will not be a dehumanizing force. The technology will change us; the chapters exploring the self and our identity raise vital questions towards the impact on identity. We are in a period of technological change, and we are using technology to change our bodies. The topics explored in different ways in this book are fascinating and important as they ultimately question if we are changing our identities, and if so, is the future utopian or dystopian?

Mary Shelley’s *Frankenstein* is a demonstration that there is a point beyond which science should not go. Are we there yet? Who should—and could—decide when we have reached that point? Therein is a huge ethical dilemma: if we have the technology to improve a life, then can it be right not to do so? If improvement is always right, then are we becoming technological determinists, where technology controls what we do with our lives? Who defines *improvement*?

The human enhancement conversation is not some vague future discussion. As this book shows, it is happening all around us. It is happening now.

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