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Technologies of Inclusive Well-Being

Serious Games, Alternative Realities,
and Play Therapy

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Foreword

Over the last decade we have witnessed a dramatic increase in the global adoption of innovative digital technologies. This can be seen in the rapid acceptance and growing demand for high speed network access, mobile devices/wearable displays, smart televisions, social media, hyperrealistic computer games, and novel interaction and behavioral sensing devices (e.g., MS Kinect, Fitbit). Consumer-driven interactive technologies that were considered to be visionary just 10 years ago have now become common to the current digital landscape. At the same time, the power of these technologies to both automate processes and create engaging user experiences has not gone unnoticed by healthcare researchers and providers. This has led to the emergence and growing adoption of clinical applications that both leverage off-the-shelf technology and push the boundaries of new technologic development. As electric typewriters gave way to word processors and handwritten letters to email, we are now witnesses to a wave of technological innovation that is driving how healthcare is accessed and delivered, and how clinical users engage with it.

It was during the “computer revolution” in the 1990s that promising technologically driven innovations in interactive behavioral healthcare had begun to be considered and prototyped. Primordial efforts from this period can be seen in R&D that aimed to use computers to enhance productivity in patient documentation and record-keeping, to deliver “drill and practice” cognitive rehabilitation, to improve access to care via internet-based teletherapy, and in the use of virtual reality simulations to deliver exposure therapy for specific phobias. Since that time, continuing advances in computation speed and power, 3D graphics and image rendering, display systems, body tracking, interface technology, haptic devices, authoring software, and artificial intelligence have supported the creation of low-cost and usable interactive clinical technology systems now capable of running on commodity level personal computational devices.

Other factors beyond the rapidly accelerating advances in enabling technologies and concomitant cost reductions have driven interest in healthcare technology applications. In part due to the ubiquitous presence of technology in everyday society, there is a growing attitude of acceptance by clinical researchers and practitioners (i.e., reduced suspicion and “technophobia”), particularly with the growing numbers of digital generation providers and patients. Moreover, there is

now an emerging scientific literature reporting positive outcomes across a range of clinical applications. Such scientific support for the clinical efficacy and safe delivery of care has also fostered the view that technologic innovation may both improve care while reducing the escalating healthcare costs that have become one of the hallmarks of post-industrial western society. Thus, the convergence of the exponential advances in underlying enabling technologies with a growing body of research and experience has fueled the evolution of healthcare technology applications to near mainstream status. And this state of affairs now stands to transform the vision of future clinical practice and research for addressing the needs of those with clinical health conditions.

It is in this context, that the present volume of chapters has so much to offer. While 20 years ago the title, *“Technologies of Well-Being: Serious Games, Alternative Realities, and Play Therapy”*, would raise the specter of Star Trek, Lawnmower Man, and Super Mario Brothers, in the current context it instead evokes a sense that new possibilities are within our reach as we harness technology to create user experiences that promote human well-being. The use of games and simulation technology and play for engaging users with health care has passed through its initial phase of scientific doubt and quizzical skepticism. These concepts are now seen as vibrant options that bring together both art and science for a useful human purpose. No longer seen as harebrained schemes, we see respected scientific journals like *Nature*, *American Psychologist*, and *JAMA* publishing research that probes these concepts. Papers in this area are routinely presented at long-established scientific venues in addition to the more specialized homegrown conferences that our community has now evolved. Major funding agencies are now earnestly supporting R&D in these areas. And, when you describe what you do for a living to your neighbor, they get it right away and seem genuinely impressed! In essence, the science and technology has caught up with the vision in clear and demonstrative ways.

So, what might a reader consider as they study this book?

We sometimes observe that great insights into the present turn up in the words of those who lived and died in a not-too-distant past. Such insights, derived from a relatively recent yet sufficiently disjointed past, can deliver a vision of the future that illuminates our present in surprising ways. This can be nicely illustrated in the words of the French author, poet, and aviator, Antoine de Saint-Exupery (1900–1944) with his comment, *“The machine does not isolate man from the great problems of nature but plunges him more deeply into them.”* While interpretations may vary, in one sentence from a writer who lived exclusively in the first half of the twentieth century, I see the exquisite juxtaposition of apprehension and engagement that always looms in our pursuit of technology solutions that address the problems of nature. This is not a bad thing. With whatever technology tools we have available, we plunge deeper into the nature of problems, and hopefully come close to where the solutions lie. I see this book in much the same fashion; a fascinating collection of visionary works by a diverse collection of scientists and practitioners who implicitly acknowledge the same struggle. The many ideas presented in these pages for using digital technology to help change the course

of challenged lives in ways unthinkable in just the last century is bold and provocative. And to do this requires a team of scientists, artists, programmers, clinicians, users, among others, who are willing to plunge deeply into the struggle, rather than to use technology to become isolated from the reality of the challenges that we aim to address. The authors in this book have successfully done this and these writings will play a significant part in further illuminating the bright future in this area.

USA, December 2013

Skip Rizzo

Preface

This book is the first single volume that brings together the topics of serious games, alternative realities, and play therapy. The focus is on the use of digital media for the therapeutic benefit and well-being of a wide range of people—spanning those with special needs to the elderly to entire urban neighborhoods. The editors of this book believe it timely to bring together these topics to demonstrate the increasing trans/inter/multidisciplinary initiatives apparent today in science, medicine, and academic research—interdisciplinary initiative that are already profoundly impacting society.

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