

Preface

This book is a spin-off from work that I am fortunate to have done over the last few years. I originally received a research grant from the Bank of Sweden's Tercentenary Fund to study the commercialization of life sciences, and I started to conduct research work in a major pharmaceutical company, in a number of smaller biotechnology firms, and in academic research settings. This study was reported in the monograph *Venturing into the Bioeconomy* (Palgrave Macmillan, 2011) that I co-authored with Mats Sundgren. The interest in life-science commercialization and the transfer from basic laboratory research to actual therapies used in the clinic led to a study of assisted fertilization clinics and the underlying field of reproductive medicine. This research work, which I conducted in collaboration with my colleague Rebecca Arman, was published in the volume *Reproductive Medicine and the Life Sciences in the Contemporary Economy* (Gower, 2013). When we were working in the assisted fertilization clinics study, I was writing a more theoretical volume eventually entitled *Organizations and the Bioeconomy* (Routledge, 2012) that aimed to integrate and discuss the recent literature on the increased role of the life sciences in the contemporary economy for an organization theory and management studies audience. In other words, I have been involved in studying and theorizing life-science commercialization activities for some time. When conducting research in the field of pharmaceuticals, I was informed that the field of life-science research operates under a different regulatory regime than the pharmaceutical industry; namely biomaterials and medical devices (a term used here to capture a quite diverse set of medical technologies and therapies) could possibly play a more central role in an era when big pharma often fail in their new drug development work and are unsuccessful in delivering new and innovative therapies. Since not much had been written about biomaterials and medical devices in comparison with pharmaceuticals, both in the social science literature more generally and in the organization theory literature more specifically, I was intrigued by this domain of expertise operating (primarily but not exclusively) on the tissue level of the human body. This research monograph reports empirical data from the field of the life sciences, historically receiving less attention than the

traditional small-molecule drug therapies, antibodies and biologics, that is, therapies operating on the molecular level making up big pharma. This volume not only reports empirical material but seeks (1) to provide an analytical framework to help theorize how biological organisms and engineered materials are capable of being co-aligned and integrated, and (2) to examine the wider socioeconomic and cultural setting in which biomaterials and medical device innovation occurs. Perhaps the aim to both provide analytical frameworks and to capture the practical, political and financial difficulties involved in life-science innovation and commercialization reveals gargantuan and not entirely flattering ambitions, but that is, I think, how this field needs to be understood and explained. This research monograph is therefore a form of hybrid text that contain elements of organization theory, philosophy of science, popular science and science policy. I am aware that this may confuse the reader, but I still think this is how biomaterials innovation needs to be understood, as that which emerges in the intersection of scientific and technological advancement and regulatory and market-based opportunities. A professional field and an emerging life-science industry cannot be understood unless someone takes on the task of imposing a theoretical framework that enables certain perspectives. After all, social systems and practices, just like biological systems and epistemic objects, never ‘speak for themselves’, but are always ‘spoken for’ and represented by scientists and scholars – and yet these fields cannot be reduced to such perspectives, as there are almost infinite possibilities for enacting social worlds. As a consequence, no analytical framework is worth its salt unless it is put to the test of being used in empirical studies. As Ian Hacking (1983) has persuasively argued, researchers both ‘represent’ (in other words, theorize) and ‘intervene’ (in natural, quasi-natural and social systems, in other words, conduct systematic inquiry) and therefore scientific work unfolds as a movement of critical self-correction back and forth between theoretical models and hypotheses, with the accumulation of data either supporting or modifying (occasionally even falsifying) the theoretical models. The price paid for this two-sided ambition is a certain messiness that may be annoying for some readers. Theorists enjoy and take great pleasure in elegant deductive reasoning in which theoretical propositions and statements are connected like the moving parts of a well-designed mechanical clock, and empiricists and experimentalists favour the reporting of data that are relatively devoid of interpretations and explanations that disturb or even distort the presentation of what is intended to appear as factual conditions. Representing a discipline (organization theory and business administration as an academic discipline) and an institution (the business school) that is constantly criticized for either producing research

that is practically irrelevant or theoretically unsophisticated, that is, of limited intellectual value, I am convinced that I have little to lose if I open up for a small amount of messiness. As Davis (1971) remarked in a much-cited paper more than four decades ago, it is the capacity to arouse a sense of curiosity and to attract attention that marks the skilled scholar. That is, the objective for business scholars should be to publish books and journal articles that are interesting, intellectually stimulating and that, as a consequence, as Karl Popper would have said, put daring hypotheses to the test. Whether this volume manages to accomplish these not-too-modest goals is not for me to say, but the text has been written with this ambition in mind. If nothing else, it may inspire more scholars in organization theory and management studies and in business schools to conduct research on life-science innovation and commercialization. It is actually quite curious that not more researchers are exploring the goldmine of opportunities for scholarly studies in this professional field.