This book appears at a moment in which cataract surgery is probably making the last revolution in technology and surgical practice, according to the postulates that Charles Kelman started in the early 70s. The progressive transition from the initial concept of small incision cataract surgery, the development of more and more sophisticated technology to support the surgeon’s practice of the procedure, the development of intraocular lenses capable of correcting virtually all types of refractive errors, and the scientific knowledge available today on fluidics, micromechanics, biomaterials, viscoelastic materials, and surgical instrument technology has made cataract surgery experience one of the greatest progressions and advances of a surgical technique throughout the history of medicine and surgery.

Cataract surgery at the moment is transforming into a practice in which minimal aggressiveness and optimized outcomes are targeted and tried to achieve by surgeons. Better diagnostic technology, sophistication in calculation formulas for IOL implantation, better instruments for incisions, and deeper knowledge into the structure of the cornea and corneal optics, greater knowledge into issues related intraocular lens performance, the approach to solve pseudophakic presbyopia by multifocal or accommodative lenses are, among many others, issues that have been recently advancing cataract surgery toward its next stage.

Throughout this process, the history of cataract surgery has been related to the decrease in incision size. This is why an important part of this book is targeting biaxial microincisional surgery, which seems to be mandatory in the future evolution of cataract removal. Simplification of the procedure and separation of irrigation and aspiration seems to be related to better outcomes supported by current scientific evidence. This is possible, thanks to a better knowledge of the instrumentation, fluidics, use of ultrasound power, and indeed surgical knowledge and training. The development of new lenses capable of fitting through smaller incisions than those currently available seems to be a limit to the development of the technology. Today, we can precisely limit our capabilities for cataract removal to 1.6 mm and to 1.8 mm with IOL implantation. Throughout this book, the reader will be able to learn about the methods to achieve this benchmark of cataract surgery at this moment.

As we have already mentioned in our opinion, this book appears during the final stage of the evolution of cataract surgery as conceived today. We anticipate that sub 1 mm surgery will require new technologies, and especially, new IOL technology and biomaterials. Most probably, we are at the end of the revolution that was started by Charlie Kelman in the early 70s and in the next decade we shall start a new evolution toward new issues such as lens replacement through new biomaterials, new
accommodating lenses, regenerating surgery, and new technologies to soften the cataract and to eliminate it through punctures rather than through incisions.

We both, as co-authors, think that the readers will enjoy going through this book to discover the real cutting edge but practical image offered today by high-quality cataract surgery practice. We thank all the co-authors of this book, all of them most relevant professionals and surgical scientists, for their contribution to this book and to the progress of cataract surgery. Thanks to them and to the support of our families, this book appears ready to go to your operating room as an advisor for your progression toward the last transition that cataract surgery will experience with the technology available today.

Alicante, Spain  
Jorge L. Alió

Eugene, Oregon, USA  
I. Howard Fine
Minimizing Incisions and Maximizing Outcomes in Cataract Surgery
Alio, J.; Fine I., H. (Eds.)
2010, XV, 319 p. With DVD., Hardcover
ISBN: 978-3-642-02861-8