

# Preface

This monograph has been a labor of many years, and it reflects many of the themes that have dominated our joint research: weighted norm inequalities, Rubio de Francia extrapolation and its generalizations, the Calderón-Zygmund decomposition, etc. Though there does not exist a single starting point for our work, there was one seminal event. In 1998, the first author, with the generous support of the Ford Foundation and the Dean of Trinity College, was able to spend a month in Madrid. The last day of his visit found him and the third author double-parked at Barajas airport while he explained an idea he had had the night before. Twelve hours later, when he arrived home and checked his email he found three long messages waiting. These led to a new way of thinking about weak type inequalities and contained the germ of the extrapolation results proved in Chapter 8.

Over the years we have benefited from conversations with and ideas from many other mathematicians. We particularly want to thank: Jose García-Cuerva, advisor of the second author; Javier Duoandikoetxea, for his many insights on extrapolation and especially for sharing with us his new proof of extrapolation with sharp constants; Janine Wittwer and Michael Wilson, whose work on the dyadic square function informed our own; C.J. Neugebauer, for his groundbreaking work on two-weight extrapolation; and Javier Parcet, for his work in collaboration with the second author on the generalized Calderón-Zygmund decomposition contained in the Appendix. And finally, we must acknowledge our debt to the late José Luis Rubio de Francia, who created the theory of extrapolation.

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