

Preface

This monograph is an expanded version of lecture notes I have used over the past eight years. I first taught this subject at Harvard’s Department of Statistics 1981–82 when a version of these notes were issued. I’ve subsequently taught the subject at Stanford in 1983 and 1986. I’ve also delivered lecture series on this material at Ohio State and at St. Flour.

This means that I’ve had the benefit of dozens of critics and proofreaders—the graduate students and faculty who sat in. Jim Fill, Arunas Rudvalis and Hansmartin Zeuner were particularly helpful.

Four students went on to write theses in the subject — Douglas Critchlow, Peter Matthews, Andy Greenhalgh and Dan Rockmore. Their ideas have certainly enriched the present version.

I’ve benefited from being able to quote from unpublished thesis work of Peter Fortini, Arthur Silverberg and Joe Verducci. Andre Broder and Jim Reeds have generously shared card shuffling ideas which appear here for the first time.

Brad Efron and Charles Stein help keep me aligned in the delicate balance between honest application and honest proof. Richard Stanley seems ever willing to translate from algebraic combinatorics into English.

My co-authors David Freedman, Ron Graham, Colin Mallows and Laurie Smith helped debug numerous arguments and kept writing “our” papers while I was finishing this project.

David Aldous and I have been talking about random walk on groups for a long time. Our ideas are so intermingled, that I’ve found it impossible to give him his fair share of credit.

My largest debt is to Mehrdad Shahshahani who taught me group representations over innumerable cups of coffee. Our conversations have been woven into this book. I hope some of his patience, enthusiasm, and love of mathematics comes through.

Shanti Gupta kept patiently prodding and praising this work, and finally sees it’s finished. Marie Sheenan typed the first version. My secretary Karola Decleve has done such a great job of taking care of me and this manuscript that words fail me. Norma Lucas ‘T_EX-ed’ this final version beautifully.

A major limitation of the present version is that it doesn’t develop the statistical end of things through a large complex example. I have done this in my Wald lectures Diaconis (1989). Thoughts like this kept delaying things. As the reader will see, there are endless places where “someone should develop a theory that makes sense of this” or try it out, or at least state an honest theorem, or