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英文版

第3版

心理学实验的 设计与报告



DESIGNING AND
REPORTING EXPERIMENTS
IN PSYCHOLOGY

Third Edition

[英] 彼得·哈里斯 (Peter Harris) 著



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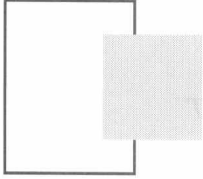
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<http://mcgraw-hill.co.uk/openup/harris/>

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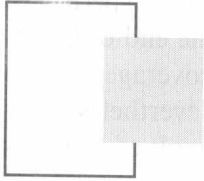
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Preface

This is a book about how to write undergraduate practical reports. It is designed to help students with every stage of the report writing process by giving them clear and detailed advice about what to put in each section of the report and describing broader issues of format, style and other issues involved in producing good reports of their practical work. As this book is first and foremost about how to write reports, this material forms the focus of the main body of the book, Part 1. Part 2 of this book contains material on design and statistics. It is designed to give students the background they need in key aspects of design and statistics to help them better understand what is required of them in report writing. Material in both parts is supplemented by a Web site that contains additional material on report writing and design. The Web site can be found at <http://mcgraw-hill.co.uk/openup/harris/>



First published in 1986, this book has been reprinted many times and is now in its third edition, so several generations of undergraduate students have benefited from using it in their studies. I hope that this edition continues to prove a boon to students and look forward to receiving their emails about it.

There are several changes and updates in this new edition. The most obvious is that, for the first time, it has been paired with two statistics textbooks from the same publisher, both of which have been selected because they are comparatively easy to use and have the appropriate breadth of coverage. Both of these are best sellers in their own right. J. Greene and M. D'Oliveira's (2006) *Learning to use statistical tests in psychology* is the more basic and introductory and

is suitable for students at the beginning of their careers as undergraduate psychologists. J. Pallant's *SPSS survival manual* (2007) is somewhat more advanced and appropriate for more experienced undergraduate students. You will find references at the end of Chapter 4 and the chapters in Part 2 to further relevant coverage in both statistics textbooks and on this book's Web site. Nevertheless, this book is designed for use alongside any relevant textbook of statistics as well as with either of the above books.

Although the primary emphasis on experimental work is retained in this edition, I also discuss how to write up other forms of quantitative study. So, this book and its Web site should be useful to students writing up any quantitative study, not just experiments.

This edition contains material at the end of each chapter in Part 2 to help students check their understanding and consolidate their learning. For the first time, answers are provided to the diagnostic questions and there are now 50 self-assessment questions. This edition also contains a completely revised section on how to find references, given that so much material is now accessed electronically (Chapter 1), and a greatly expanded section on how to cite electronic references in the REFERENCES section (Chapter 7) that incorporates new guidelines from the American Psychological Association (APA). It also incorporates recent advice from the British Psychological Society about the ethics of conducting studies on the Internet (Chapter 10). I have also compiled a list of things that students continue to do in their reports, despite my advice, and there are now icons in the margin to indicate where the advice designed to help them avoid these mistakes lies. For the first time, a list of the contents of the Web site is printed in the book and icons are also used to denote where references to further coverage of issues in text occurs on the Web site. The commentary on issues raised in each chapter has also been expanded. This can be found at the rear of the book.



These are the principal changes, but there are many others throughout the text. Nevertheless, retained I hope are the things that both tutors and students liked so much about the previous editions.

To students

This is a book about how to write practical reports. It is designed to help you at undergraduate level write good reports of your studies. Writing reports of practical work is an important part of many courses

in psychology, from school level to degree work. This book provides advice on how to go about writing reports of quantitative studies in psychology (i.e., studies where the data are numbers), with an emphasis on the reports you will most often be asked to write – reports of *experiments*.

It is a guide to *design* as well as to report writing. Why? Because these elements are inextricably linked. It is hard to write a good report of a study without understanding the whys and wherefores of its design. In order to fully understand what is required of you in the report, therefore, it helps to have an idea of the function that the report of a study serves in the scientific world. This, in turn, requires you to understand something about the nature and purpose of empirical studies – such as experiments. Yet more than this, of course, many of the problems and difficulties you may face with report writing involve questions such as how to report the features of your design, or how to report adequately the outcomes of your statistical analyses. The answers to such problems depend on knowledge, of both the conventions of report writing and of the logic and terminology of design. Consequently, this book attempts to provide an introduction to both aspects of your practical work.

How to use this book

In this book I have aimed to write something that will serve both as an introduction to design and report writing and as a handy reference source throughout your career as a student of practical psychology. I see it being used much like a thesaurus or dictionary – something that you turn to as the need arises. In particular, you may find yourself having to go over some of the sections a number of times before full understanding dawns. Do not be above doing this – it is what the book is for. Moreover, although you should never let yourself be overawed by the practical report, do not underestimate the task that confronts you either. Report writing is not easy – but I hope that this book will make it easier.

It is essential that you take an active part in assimilating the text rather than being a passive receiver of information. After all, you are in an extremely good position to diagnose what you already know and what you need to learn. I will have failed if the information remains on the page rather than ending up in your head. To help you with your learning, you will find that the chapters in Part 1 typically

begin with a number of “diagnostic questions”. Test yourself on these to see whether you already have the knowledge to tackle the chapter. If you have any difficulties answering these questions, then you will be directed to another section of the book for assistance. Throughout the book you will find 50 **Self-Assessment Questions** (SAQs) at various points in the text. Attempting these SAQs will give you feedback on your learning and a better general understanding, and will help you to be more of an active participant than a passive reader. The answers to these questions are at the rear of the book. In Part 2, you will find a section at the end of each chapter to help you check your understanding and consolidate your learning. If you are using either

Σ Greene and D’Oliveira’s *Learning to use statistical tests in psychology* or Pallant’s *SPSS survival manual*, you will also find references in that section and at the end of Chapter 4 to relevant coverage in each of those books. If you are using a different statistics textbook, that is no problem – the list of concepts provided at the end of the chapters in Part 2 will help you locate what you need to know in your textbook. There is also a Web site for this book that contains additional material on report writing and design. The Web site can be found at <http://mcgraw-hill.co.uk/openup/harris/>



The summaries at the end of each section recapitulate the main points and so provide a useful aid to revision. The Index of concepts that appears at the end of the book indicates the place in the text where each concept is introduced and defined. Entries in the index are in **bold** print in the text. You will find icons in the margin that flag up things like coverage to be found on the Web site or a piece of advice that students continue to ignore. You can find recommended reading at the rear of the book.



Part 1 is about writing reports. This comes first because it is the principal focus of the book. You will find there chapters for each of the principal sections of the report. Part 2 is about design. The chapters in Part 2 progress, that is, in writing each chapter in Part 2 I have assumed that you are familiar with the material in the previous chapter. So, make sure that you are happy with the material in each chapter before you move on to the next one. In particular, make sure that you are comfortable with the material in Chapters 9–11 before tackling Chapters 12 and 13.

To help you to develop and extend your knowledge of report writing and design, I have included a separate commentary on various issues and points in the text. The commentary is designed to extend your understanding by expanding on points and issues that I do not

have the room to cover in detail in the core text or by clarifying something that I have written. You will find this commentary towards the rear of the book. The presence of commentary is indicated by an icon in the margin.

The Web site is likewise intended to help you to develop your knowledge of how to design studies and write reports. You should find yourself looking to the Web site for material more and more as you become experienced and need to write more sophisticated reports. You will find on the Web site fuller coverage of some of the material in this book and also coverage of issues that I have not been able to talk about in the book. You can find a listing of the contents of the Web site at the start of the book. *Do* go and look at what is there. Tell your fellow students about it.

I hope that you will find this book useful and that it will help you to produce good reports. However, please remember that it is designed to *supplement* adequate supervision – not to replace it. The advice in this book is based on the conventions in the *Publication Manual of the American Psychological Association*, fifth edition (APA, 2001). Nevertheless, it is quite possible that I will have written or recommended something with which your tutors disagree. If so, I hope they make clear to you what they want from you instead and that they will not experience fits of apoplexy or direct torrents of abuse at me in the process. So, be alert to places where your tutors expect you to depart from my suggestions.

Please *do* give me feedback. Let me know whether you like the book or not, about the bits that you found useful and any bits that you found hard to follow. This will help me when I come to produce any further editions. It will also help me to develop the material on the Web site.

To tutors

This book is designed both for use as an introductory text for those having to write reports for the first time and also as a resource for students as they progress through the years of a degree course.

The academic world has changed significantly since I wrote the first edition of this book. In the UK the number of students studying psychology has expanded enormously and the numbers that we admit onto degree courses are many times greater than once they were. This has inevitably changed the ways in which we teach our students. If my

experience is anything to go by, students receive less experience of report writing and less feedback on their efforts than once was the case. The need for a guide such as this has therefore increased.

Developments in technology continue to change how students work. This edition of the book has been updated to provide students with advice relevant to how they now seek out information. There continue to be changes in custom and practice and I have written this edition to reflect these as best I can. For instance, the move in published work towards dealing with issues of power and effect size continues, as does the need, therefore, to educate and train our students in dealing with and reporting these issues.

Previous editions were used by more advanced students than I had expected. (I know of postgraduates who used the book to help them to prepare their theses, which I had not expected.) Certainly it was not uncommon to find final year students using it extensively to help them to write their projects. In the light of this, I have expanded the commentary and provided other pointers to help such students move towards writing the more sophisticated reports expected of them. A key element in this is the Web site that accompanies this book. The Web site can be found at <http://mcgraw-hill.co.uk/openup/harris/>. There I have placed fuller coverage of various issues discussed in this book and also material relevant to more advanced students. You can find a listing of the Web site's contents at the start of this book. Material on the Web site covers statistics from using and reporting chi-square through to multiple linear regression. It is designed to be of use both to relative beginners and more advanced students who may need to run and report statistics of effect size, multiple comparisons, tests of simple effects, and so on. For each statistic there is a section on things for the student to watch out for when using the statistic or reporting the outcome of the analysis.



Please note that each chapter in Part 2 has been written on the assumption that students are familiar with the material in the previous chapter. The material in Chapters 9–11 covers the core material on design and analysis contained in a “traditional” introductory course on these issues. This book can therefore be used with such courses by omitting the material in Chapters 12 and 13.

The recommendations in this book are based on those in the fifth edition of the *Publication Manual of the American Psychological Association* (APA, 2001). Although not a primer in APA style *per se*, the aim is to encourage students from the outset to produce reports that are generally consistent with APA style. Those tutors for whom this is

less of a concern will, I hope, find that much of what I recommend here nevertheless still suits their students' needs. I would appreciate feedback on what works and what might be done differently.

I have continued in this third edition to use the terms *unrelated samples* and *related samples* independent variables. However, for those who wish to use alternatives, I have highlighted this issue to the students (Section 10.2) and told them about the principal alternatives. I have also tried to write in such a way that the above terms could easily be replaced without the students losing sight of the conceptual and methodological issues involved in choosing between these types of independent variables.

This book has been written on the assumption that most of the students who use it will still be asked to test for statistical significance, albeit typically within a broader understanding of issues to do with estimation, power and effect size. Nevertheless, it should be possible to use this book even if you do not want your students to test for statistical significance. I have also expanded the section (Section 13.8) on the use of variables that are not “true” independent variables. In the interests of clarity and simplicity, especially for introductory students, it is assumed that they will generally be testing the traditional “no effect” null hypothesis rather than “minimum-effect” ones (e.g., Murphy & Myers, 2004).

Although this book has been written primarily for students of Psychology, many of the rules and conventions are shared by related disciplines – such as Biology – and so it may prove useful to students of these subjects too.

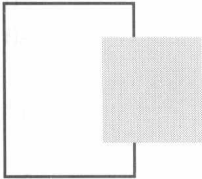
I hope that much that was good in the previous editions of the book remains and that at least most of the changes are again improvements. I did not get much feedback on the previous editions, but take comfort in their healthy sales. I have had letters and emails from students who found previous editions of the book useful and these have been very gratifying.



Acknowledgements

The call for this new edition came round much quicker than the previous one. I am grateful to the various commissioning editors at McGraw-Hill who were patient but persistent, and latterly to Natalie Jacobs for her support and input. I am also grateful to four anonymous reviewers of the second edition – their reviews greatly influenced

me as I worked on this revision. I am also grateful to two colleagues, Paul Norman and Richard Rowe, who commented on some parts of the text. Yet again, I'd like to thank all those who have put up with me over the years and especially while I hid away working on this. Distinguished service awards go to those for whom this was for the second or third time of asking.



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