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SOCIAL STATISTICS SOCIAL STATIS

A MicroCase® Workbook

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William Fox (美) 著

外语教学与研究出版社 FOREIGN LANGUAGE TEACHING AND RESEARCH PRESS 社会学精品原版教材系列

Fourth Edition

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> William Fox (美) 著 郭志刚 导读

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社会学精品原版教材系列

总序

中国是一个有着几千年文明史的国家,中国人在哲学、历史、伦理、文学、天文、算学、医学等领域的研究都有悠久的历史,形成了自己独特的学术传统。但是到了近代却在对自然界和人类社会的研究方面长期闭关自守,裹足不前,最后古老的中国终于败在西方国家的"坚船利炮"之下。

被一连串失败震动了的中国人,开始仿照西方国家开办新式学校,讲授西方的各种学科知识。发源于西方社会的自然科学、社会科学、人文科学、医学、工程学等开始进入中国学校的讲堂。这些变化使中国进入了一个新的时代,与世界接轨的时代,改变了中国的教育体系,改变了中国人的知识结构,也改变了中国人的思想观念。

进入21世纪之后,世界各国之间依然存在激烈的竞争。对于中国来说,与西方发达国家竞争的激烈程度丝毫不逊于近代史上的任何时期。当年落后的中国败于"鸦片战争",败于"甲午海战",当年内部分裂的中国在日寇进攻下一度失去了半壁江山,面临民族存亡的危机。中华人民共和国的建立使得中国人团结起来了,在政治上站起来了,但是必须承认,我们在科学技术、社会科学、经济建设等不少方面仍然远远落在西方发达国家的后面。

要想让中国人真正站起来,就必须使中国人在科技、教育等各个方面赶上西方发达国家。也正是在这样的形势下,党中央提出了"科教兴国"的策略。一个国家如果没有真正先进的教育,就不可能有高素质的国民,不可能产生先进的科学技术,不可能发展强大的经济。当代社会财富的增值主要来自技术的创新,而技术的创新来自基础科学的创新,基础科学的创新人才又来自我们的学校教育。一个真正强大的国家,不仅要有先进的自然科学与工程技术,也必须发展出先进的人文学科和社会科学。人是社会的动物,不把社会的基本结构、组织形式、运行机制研究清楚,不培养和造就高素质的国民,我们怎么去组织和管理这个社会包括它的经济活动呢?

社会学是起源于西方的一门社会科学,研究的是在社会形态下的人如何思想和行动,最早被严复翻译成"群学",因为它研究的不是作为生物体的人,而是生活在社会之中并与其他人保持密切交往的人。社会学一方面教给人们如何去理解社会变化的规

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律,学习认识社会的研究方法,另一方面也在教导人应当如何在社会中生活,应当如何做人。中国的文化传统对这两点是很强调的,儒家首先讲的就是"修身齐家",然后才是"治国平天下"。中国有自己的文化传统,这是几千年发展出来的一个知识体系,这个知识体系中凡是好的东西,仍然要继承下去,比如中国的"和而不同"的思想,对于不同文化之间、不同民族之间的交流与共处,就是很有价值的思路。中国人在几千年里的族群交流、文明碰撞中能够发展出今天这样一个地域辽阔、族群繁多、文化多元的国家,形成了一个"多元一体"的中华民族,是有它的道理的,根就在我们的文化传统中。

在现代化进程当中的中国必须与其他各国打交道,与各国做生意,所以必须了解 西方社会和它们的文化传统、思想观念和学术体系,需要了解它们的社会研究方法与 理论,了解它们的社会学这门学科的系统性知识。可惜的是,建国后这个学科曾经一 度被取消,随着70年代后期"改革开放"方针的确立,党中央又决定在我国重建社会 学。20多年过去了,应当说我们在恢复这个学科的教学和研究工作方面,做出了不少 成绩,使得这个一度被社会遗忘的学科,再次有了一定的知名度。但是要看到这个学 科仍然不够成熟,各个学校的发展也不平衡,在许多方面还需要断续"补课",需要培 养一批高素质的教师,需要编写高质量的教材,同时需要组织一批密切结合我国社会 变迁发展的研究课题,组织出版相应的研究成果。

要想使中国的社会学发展起来,在开始阶段要做两件事:一是继续学习和了解西方国家社会学的最新研究方法与研究成果;二是脚踏实地地在中国做实地调查研究、了解国情、分析各种社会学理论对于中国社会的适用性,研究中国社会的发展规律。做好了这两件基础性的工作,我们就有可能借鉴国外的知识,研究中国社会的实际现象,在分析中努力提出具有创新性的命题与理论,再经过跨国比较研究,使这些从中国社会提炼出来的知识变成世界知识体系的组成部分。

近年来,我们注意到西方国家的知识和技术的发展与更新速度在不断加快,这使得我们学习与研究的速度也不得不加快。以自然科学为例,现在世界上最新的前沿命题与研究成果都及时刊登在英文的学术期刊上。只有在大学本科期间就使用国外英文版教科书来学习基础物理、基础化学、基础生物学等课程的学生,才可能通过学习来熟练地掌握相关的英文术语和表达方式,也才有可能在研究生阶段比较熟练地阅读这些学科的英文期刊,在研究生毕业后才有可能迅速接近世界学术前沿。也正是看到了这一点,教育部在积极推动我国大学课程的英语授课。

在使用英文教科书方面,我国文科的紧迫性也许不如自然科学,但是同样也需要提到日程上来。前几年为了补充国内教材的不足,我们与华夏出版社合作,组织翻译了《高校经典教材译丛——社会学》,已先后出版了十几本翻译版的国外教材,总的来说反响是好的。现在外语教学与研究出版社(外研社)愿意组织出版一批英文原版的社会学教科书,这同样是一件好事。如果我国有一些本科生或研究生能够通过阅读这些英文原版教材来学习社会学,这无疑为他们阅读英文社会学杂志搭了一座桥,我想这对于社会学这个学科的建设与对外交流是非常有益的。

这样来看,社会学这个学科未来的教材可以包括以下四个部分:一是国内学者创造性的著述,二是国内学者借鉴西方知识体系同时结合我国国情研究撰写的系统教材,三是翻译成中文的西方教科书,四是英文原版教科书。在本科生学习期间,以第一部分为主,后三部分为辅。到了本科高年级和研究生学习期间,再进一步增加对中文和英文的研究专著、学术期刊的阅读。这样中西结合,互相补充,取其精华,去其糟粕,既有助于学生拓展视野、丰富知识,又可以促进比较分析,提高学生独立判断与思考的能力。这对于中国社会学的教学与研究工作,对于中国社会学的对外交流,必将有所促进。我国派到美国和欧洲去留学的学生,在国外的大学里主要也是在读这些书,如果我们大学里的图书馆能够订购到系统和丰富的英文教科书和学术期刊,就可以至少在阅读材料方面为我们的学生们提供一个较好的条件。

当然,在历史上中国有自己的发展道路与传统文化,在今天的现代化进程中中国也有自己的政策与国情,西方的社会学理论与观点是否符合中国社会的实际,需要检验才可以证实。我们在阅读原版教材时,也必须以辩证的眼光去分析和辨别。但我们在21世纪的今天,必须放眼世界,无论在自然科学还是在社会科学的知识发展方面都必须做到"知己知彼",了解国外的社会学理论与研究成果,也就是了解其他国家是在以什么样的思路来分析和理解中国。

21世纪决不会是一个平静的世纪,全球化是一个不可抗拒的发展大势,它增进了不同国家、不同文化之间的接触与交流,同时在国家利益的相互碰撞中,在不同文化的相互碰撞中也隐藏着矛盾与冲突,甚至会出现局部的战争。我们需要了解我们中华民族的文化传统与发展历史,也需要了解其他国家的文化传统、社会制度、价值观念和行为规范,逐步在中外社会、中外社会学思想的比较中更加深刻地认识自身与他人,真正做到中国人的文化自觉。我想这应当是中国社会学者不可推卸的历史责任。在这个过程中,我们必须开拓眼界,虚怀若谷,既不固步自封,也不妄

自菲薄,脚踏实地把我们的教学与研究工作做好,使社会学为今后中国社会的发展做出它不可替代的贡献。

我们盼望着由外研社出版的"社会学精品原版教材系列"早日与广大读者见面, 以推动我国的社会学教育与研究有更进一步的发展。

费克面

(费孝通) 2003年6月20日

Preface

Like cooking, auto repair, and falling in love, statistics is best learned by doing it rather than reading about it. That's what this workbook is for—doing statistics. This workbook gives you opportunities, lots of them, to use the statistical ideas and methods that you read about in the *Social Statistics* text.

Each workbook chapter first guides you through statistical analyses using Student MicroCase, the slimmed down but still powerful version of MicroCase that comes on the CD-ROM accompanying this workbook. Each workbook chapter then offers exercises for you to carry out. You'll do some exercises using paper and pencil; you'll use a computer with Student MicroCase to do other exercises. You'll use your brain for all exercises. Most exercises are structured. That is, this workbook asks you to find specific information about specified variables. But this workbook also includes less structured exercises that point you toward general problems but let you figure out how to go about solving them. You will also find general discussion issues that ask you to think about statistical matters.

Included, too, are terms, symbols, and formulas that you need to know in order to do statistics productively. You will find the following summaries in each chapter:

Key Concepts and Procedures are major statistical ideas and methods presented in the *Social Statistics* text. You should know each of these terms and techniques well enough to explain what it means, recognize examples, and offer your own examples.

Symbols are used not only in formulas, but also in displays and written summaries of statistical analyses. You need to know these symbols to be an intelligent consumer as well as producer of statistical information. Do you need to memorize them? Yes—but that's easy since many are the first letter of what they stand for. A few symbols are Greek letters, so as you learn statistics you will even pick up a little classical Greek (although not enough to meet a college language requirement).

Formulas are what the name indicates. These are definitional formulas that you need to understand if you are to understand the statistics they produce.

Most workbook chapters have three kinds of exercises:

Basic Ideas/Discussion Issues are questions about the "why" of statistical analyses and the principles that underlie statistics. Some of these ideas and issues are easy . . . and some are very difficult. Your instructor may ask you to write out answers to these questions or to be prepared to discuss them in class.

Paper-and-Pencil Exercises have you do statistical analyses without using MicroCase. Do these exercises with just paper and pencil. Maybe an inexpensive calculator too. And your brain, of course. These exercises usually involve small numbers of cases, often hypothetical, to minimize the drudgery of doing statistics by hand. Mostly we will use a computer to do statistical analyses, but first doing some paper-and-pencil exercises is helpful—even essential—in learning statistics. These exercises will help you better understand what the computer is doing.

Analyses: GSS Data or STATES Data or GLOBAL Data offer statistical exercises for you to carry out using the computer. These exercises use data files on the computer diskette that came with this workbook. Some analysis exercises walk you through Student MicroCase procedures. These are pretty easy. Other analysis exercises offer issues or problems to investigate using MicroCase with data files, but you decide how to go about addressing the issues or problems. These exercises give you research goals, but you figure out how best to reach them. These less structured exercises are more difficult but also more interesting.

I have designed this workbook so that you can write your answers to exercises in the workbook. Sometimes I provide a box to check or a blank line on which to enter a number or write a short answer. Other times I leave a space for you to write a longer response. If your instructor wants to review or grade your exercises, you can tear out each set to hand in. You may sometimes want to attach worksheets showing your calculations for Paper-and-Pencil Exercises. Clearly label these attachments with your name and exercise numbers so that your instructor can easily identify them. Also be sure to write neatly and legibly. You may also attach computer printouts of your MicroCase Analyses. Your instructor may give you additional information about how he or she wants your exercises done.

Appendix A describes how to create your own MicroCase data files for data that you may collect yourself. Appendix B lists variables available in the data files that you'll use in this workbook. Appendix C describes the General Social Survey in particular.

Getting Started

Introduction

Let's begin by installing Student MicroCase, the computer software that will carry out most of the statistical computations that we will need this semester. Student MicroCase is easy to install and even easier to use. After you install Student MicroCase on your computer, I will introduce "Software Guides" that will lead us through many of the MicroCase operations in this workbook.

This *Getting Started* section will do just that—get us started. If you need additional information on Student MicroCase and its features, refer to the help section available on the CD-ROM accompanying this package.

System Requirements

The software that accompanies this workbook is designed for the Windows 95 operating system or higher. The software can be installed to a personal computer, run directly from the accompanying CD-ROM and diskettes, or accessed from a computer located on a network.

The minimum computer requirements are

- Windows 95 (or higher)
- 8 MB RAM
- CD-ROM drive
- 15 MB of hard drive space (if you want to install MicroCase)

If you are using a laptop computer, review the special installation instructions below. To run the software on a Macintosh, you will need emulation software or hardware installed. For more information about emulation software or hardware, check with

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your local Macintosh retailer or try the Web site http://machardware.about.com/cs/pcemulation/.

Installing Student MicroCase

If you will be running Student MicroCase directly from the CD-ROM and diskette—or if you will be using a version of Student MicroCase that is installed on a network—skip to the section "Starting Student MicroCase."

NOTE: If more than one student will use this computer to complete the exercises found in this workbook, do not install Student MicroCase to the hard drive. Instead, skip to the section "Starting Student MicroCase" and follow the instructions for running the software directly from the CD-ROM and diskette.

To install Student MicroCase to a hard drive, you will need the diskette and CD-ROM that are packaged inside the back cover of this book. Then follow these steps in order:

- 1. Start your computer and wait until the Windows desktop is showing on your screen.
- 2. Insert the CD-ROM disc into the CD-ROM drive of your computer.
- On most computers the CD-ROM will automatically start and a welcome menu will appear. If the CD-ROM doesn't automatically start, do the following:
 - Click [Start] from the Windows desktop, click [Run], type **D:\SETUP**, and click [OK]. (If your CD-ROM drive is not the D drive, replace the letter D with the proper drive letter.) To install Student MicroCase to your hard drive, select the second option on the list: "Install Student MicroCase to your hard drive."
- 4. During the installation, you will be presented with several screens as described below. In some cases you will be required to make a selection or entry and then click [Next] to continue.
- 5. The first screen that appears is the License Name screen. (If this software has been previously installed or used, it already contains the licensing information. In such a case, a screen confirming your name will appear instead.) Here you are asked to type your name. It is important to type your name.

correctly, since it cannot be changed after this point. Your name will appear on all printouts, so make sure you spell it completely and correctly. Then click [Next] to continue.

A Welcome screen now appears. This provides some introductory information and suggests that you shut down any other programs that may be running. Click [Next] to continue.

You are next presented with a **Software License Agreement**. Read this screen and click [Yes] if you accept the terms of the software license.

The next screen has you **Choose the Destination** for the program files. You are strongly advised to use the destination directory that is shown on the screen. Click [Next] to continue.

6. The Student MicroCase program will now be installed. At the end of the installation, you will be asked if you would like a shortcut icon placed on the Windows desktop. It is recommended that you select [Yes]. You are now informed that the installation of Student MicroCase is finished. Click the [Finish] button and you will be returned to the opening **Welcome** screen. To exit completely, click the option "Exit Welcome Screen."

Starting Student MicroCase

There are two ways to run Student MicroCase: (1) directly from the CD-ROM, or (2) from a hard drive installation. Each method is described below.

STARTING STUDENT MICROCASE FROM THE CD-ROM AND DISKETTE

Unlike most Windows programs, it is possible to run Student MicroCase directly from the CD-ROM and diskette. To do so, follow these steps:

- 1. Insert the CD-ROM disc into the CD-ROM drive.
- 2. On most computers the CD-ROM will automatically start and a welcome menu will appear. (Note: If the CD-ROM does not automatically start after it is inserted, click [Start] from the Windows desktop, click [Run], type D:\SETUP and click [OK]. If your CD-ROM drive is not the D drive, replace the letter D with the proper drive letter.)
- Select the first option from the Welcome menu: "Run Student MicroCase from the CD-ROM." Within a few seconds Student MicroCase will appear on your screen.

STARTING STUDENT MICROCASE FROM A HARD DRIVE INSTALLATION

If Student MicroCase is installed to the hard drive of your computer (see earlier section "Installing Student MicroCase"), it is not necessary to insert either the CD-ROM or floppy diskette. Instead, locate the Student MicroCase "shortcut" icon on the Windows desktop, which looks something like this:



To start Student MicroCase, position your mouse pointer over the shortcut icon and double-click (that is, click it twice in rapid succession). If you did not permit the shortcut icon to be placed on the desktop during the install process (or if the icon was accidentally deleted), you can alternatively follow these directions to start the soft ware:

Click [Start] from the Windows desktop.

Click [Programs].

Click [MicroCase].

Click [Student MicroCase].

After a few seconds, Student MicroCase should appear on your screen.

Student MicroCase Menus

Student MicroCase is extremely easy to use. All you do is point and click your way through the program. That is, use your mouse arrow to point at the selection you want, and then click the left button on the mouse.

Two menus provide the beginning points for everything you will do in Student MicroCase. When you start Student MicroCase, the FILE & DATA MENU appears first. To do statistical analysis, you must switch to the STATISTICS MENU. You can toggle back and forth between those two menus by clicking the menu names shown on the left side of the screen.

Not all options on a menu are always available. You cannot, for example, do a statistical analysis until you have a data file open. You can tell which options are available at any given time by looking at the colors of the options. The options that are unavailable are dimmed. For example, when you first start Student MicroCase, only the Open File and New File options are immediately available. As you can see, the colors of those options are brighter than the colors of the other options shown on the screen. Further, when you move your mouse pointer over available options, they will become highlighted.

Software Guides

Throughout this workbook, "Software Guides" provide the basic information needed to carry out each task. Here is an example:

➤ Data File: STATES

➤ Task: Mapping

➤ Variable 1: 86) MURDER

➤ View: Map

Each line of the software guide is actually an instruction. Let's follow the simple steps to carry out this task.

STEP 1: SELECT A DATA FILE

Before you can do anything in Student MicroCase, you need to open a data file so that you will have data to analyze. To open a data file, click the OPEN FILE task on the FILE & DATA MENU. A list of data files will appear in a window (e.g., GSS, GLOBAL, STATES, etc.). If you click on a file name once, a description of the highlighted file is shown in the window next to this list. In the MicroCase Guide shown above, the ➤ symbol to the left of the Data File step indicates that you should open the STATES data file. To open the file STATES, click STATES and then click the [Open] button (or just double-click STATES). The next window that appears (labeled File Settings) provides additional information about the data file, including a file description, the number of cases in the file, and the number of variables, among other things. To continue, click the [OK] button. You are now returned to the main menu of Student MicroCase. (You won't need to repeat this step until you want to open a different data file.) Notice that by looking at the file name shown on the top line of the screen, you can always see which data file is currently open.

STEP 2: SELECT A TASK

Once you open a data file, the next step is to select a program task. Eight analysis tasks are offered in this version of Student MicroCase. Not all tasks are available for each data file because some tasks are appropriate only for certain kinds of data. Mapping, for example, is a task that applies only to ecological data, and thus cannot be used with survey data files.

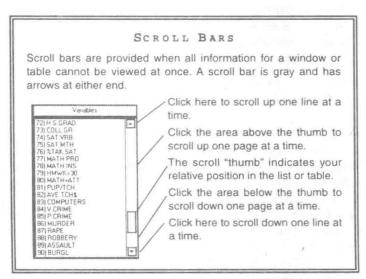
In the software guide we're following, the > symbol on the second line indicates that the MAPPING task should be selected, so switch to the STATISTICS MENU and then click the Mapping option with your left mouse button.

STEP 3: SELECT A VARIABLE

After a task is selected, you will be shown a list of the variables in the open data file. Notice that the first variable is highlighted and a description of that variable is shown in the Variable Description window at the lower right. You can move this highlight through the list of variables by using the up and down cursor keys (as well as the <Page Up> and <Page Down> keys). You can also click once on a variable name to

move the highlight and update the variable description. Go ahead—move the highlight to a few other variables and read their descriptions.

If the variable you want to select is not showing in the variable window, click on the scroll bars located on the right side of the variable list window to move through the list. Here is how to use the scroll bar:



By the way, Appendix B at the back of this workbook contains a list of the variable names for data files provided with this book.

Each task requires the selection of one or more variables, and the software guides indicate which variables should be selected. The software guide example here indicates that you should select 86) MURDER as Variable 1. On the screen, there is a box labeled Variable 1. Inside this box, a vertical cursor indicates that this box is currently an active option. When you select a variable, it will be placed in this box. Before selecting a variable, be sure that the cursor is in the appropriate box. If it is not, place the cursor inside the appropriate box by clicking the box with your mouse. This is important because in some tasks the software guide will require more than one variable to be selected, and you want to be sure that you put each selected variable in the right place.

To select a variable, use any one of the methods shown below. (If the name of a previously selected variable is in the box, use the <Delete> or <Backspace> key to remove it—or click the [Clear All] button.)

- Type the number of the variable and press <Enter>.
- Type the name of the variable and press <Enter>. Or you can type just enough of the name to distinguish it from other variables in the data—MUR would be sufficient for this example.

- Double-click on the desired variable in the variable list window. This selection
 will then appear in the variable selection box. (If the name of a previously
 selected variable is in the box, the newly selected variable will replace it.)
- Highlight the desired variable in the variable list, and then click the arrow that appears to the left of the variable selection box. The variable you selected will now appear in the box. (If the name of a previously selected variable is in the box, the newly selected variable will replace it.)

Once you have selected your variable (or variables), click the [OK] button to continue to the final results screen.

Variable Search Feature

You will often want to find a variable dealing with a particular research issue. In this situation, you may find it useful to search the variable list for certain words, phrases, or partial words that might appear in the variable name or description of the variable. Maybe, for example, you want to find a variable about crime. No problem. Just click the [Search] button below the variable list. Then type the word crime, and then either click the [OK] button or press <Enter>. The variable list window now contains only those variables that have *crime* in either the variable name or the variable description. You can select a variable directly from this search list in any of the ways described above. To return to the full list of variables, click the [Full List] button that appears below the variable list window.

STEP 4: SELECT A VIEW

The next screen that appears shows the final results of your analysis. In most cases, the screen that first appears matches the "view" indicated in the software guide. In this example, you are instructed to look at the Map view—that's what is currently showing on the screen. In some instances, however, you may need to make an additional selection to produce the desired screen.

