

NEWSLETTER FOR THE INTERNATIONAL STUDY GROUP ON  
LEARNING PROBABILITY AND STATISTICS CONCEPTS

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Joan Garfield, Secretary and Editor  
106 Nicholson Hall  
216 Pillsbury Drive S.E.  
Minneapolis, MN 55455  
USA

Notes and Comments

As the academic year comes to an end, it seems like a good time to produce another newsletter. I hope you are having a good year and have plans for an enjoyable summer. Next summer many of us will be preparing to travel to ICOTS III in New Zealand. I look forward to seeing (and meeting) many of you then.

I received two replies concerning a new name for the study group. Manfred Borovcnik suggests "International Study Group for Education in Statistics and Probability," (ISG for ESP).

Meral Aksu liked my suggestion of: "International Study Group on Learning Stochastics" (ISGLS).

I'll hold off on a name change until our next issue - so you still have time to vote for one of these names or suggest something else.

New Members

I'd like to welcome four new members to the study group. We now have 48 members from 17 different countries.

Our new members are:

Dr. Ole Bjorkqvist  
Faculty of Education  
Abo Akademi  
PB 311  
65101 VASA  
Finland

Research interests are: Teaching methods in probability problem solving, especially combinatorics, probability and games.

(New members continued on Page Two)

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New Members, continued:

Elana Joram  
Centre for Applied Cognitive Science  
Ontario Institute for Studies in Education  
252 Bloor Street West  
Toronto, Ontario M5S1V6  
Canada

Research interests are: Misconceptions and instructional interventions in random sampling.

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Dr. Wong Khoon Yoong  
Head/Department of Mathematics Education  
Institute of Education  
469 Bukit Timah Rd  
Singapore 1025

Research interests are: Mathematics learning and teaching, training of mathematic teachers.

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Judith Zawojewski  
22 Stonegate Dr. W.  
Prospect Heights, IL 60070

Research interests are: Issues of development and implementation of interdisciplinary statistics education at middle school and secondary levels. People's understanding of mean, median and mode.

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More papers from ISI and ICME:

I received three more papers from members who presented at these conferences last summer.

Mary Rouncefield sent two papers. The ISI paper is titled "Preparing the Statistics Coordinator." This paper presents the need for a statistics coordinator for secondary schools, the current situation in Britain and details of a project designed to train statistics coordinators.

The second paper, "Practical Statistics in other school subjects" will also be published in Modelling Applications and Problem Solving: Teaching Mathematics in a Real Context (E. Howood, Publisher). This paper discusses what mathematics teachers can do to prepare students for practical statistics work in their other courses (e.g., geography and sociology).

A third paper was presented at the ISI round table by Andee Rubin and Ann Rosebery. Their paper, "Teachers' Misunderstandings in Statistical Reasoning: Evidence from a Field Test of Innovative Materials," discusses difficulties in training teachers to teach statistical reasoning. Andee and Ann have developed software and curriculum for teaching statistical reasoning to high school student. They kept records of classroom observations and communications with teachers during the field testing of these materials. These records enabled them to determine which concepts were most difficult for teachers to understand.

I'm sure any of these authors will be happy to send you copies of their papers.

Information from CHANCE magazine

The latest issue of CHANCE magazine has several interesting articles and notes. By the way, if anyone is interested in subscribing, the address is:

CHANCE  
Springer-Verlag New York Inc.  
P.O. Box 2485  
Secaucus, NJ 07096-2491

The individual subscription costs \$26.95 for one year (4 issues).

Amos Tversky and Thomas Gilovich have an article titled "The Cold Facts about the 'Hot Hand' in Basketball." They tackle the issue of whether basketball players tend to shoot in streaks, by showing that the chances of hitting a shot are as good after a miss or after a hit.

Another article by Albert Shanker deals with the use of misleading graphs in presenting statistics. He uses as an example, a comparison of SAT score (Scholastic Aptitude Test, a US College Entrance Exam) from 1963 to 1986 and Elementary/Secondary Education spending for the same time period. The article is titled "What's Wrong With This Picture? Lies, Damned Lies, and Statistics."

There is also an interesting book review of a new book titled Misused Statistics: Straight Talk For Twisted Numbers (published by Marcel Dekker, Inc. NY). This is part of a series on popular statistics by various authors. The others are: How To Tell The Liars From The Statisticians, Educating Guessing: How To Cope In An Uncertain World, and The Statistical Exorcist: Dispelling Statistics Anxiety. I haven't seen any of these books but they sound interesting. Have any of you read them? If yes, please send your comments to me.

Another nice feature of CHANCE is a section of "CHANCE Musings". These are citations from the press, popular fiction, non-fiction, and statistical news. Each citation involves a use or misuse of a statistical topic, concept, or process.

## A New Look for Teaching Statistics

I received the latest issue of the journal Teaching Statistics as I assume many of you have. The new format is very attractive and has some excellent new features such as Project Parade, Curriculum Matters, Computing Corner and Data Bank. Some of our members have articles in this issue, and there is an interesting article on Teaching Statistics in the US - An Alien's-eye view.

If anyone does not currently subscribe to Teaching Statistics, and would like to, the address is:

Longman Group UK Limited  
Subscriptions Dept.  
Fourth Avenue, Harlow, Essex  
CM195AA  
UK

## Books of Interest

I received a flyer from Efraim Fischbein announcing his new book on Intuition in Science and Mathematics. This book draws on experimental data from different research contexts to present an analysis of scientific reasoning. Examples of aspects analyzed are subjective probabilities, intuitive models, and contradictory intuitions. Copies may be ordered from:

Kluwer Academic Publishers Group  
P.O. Box 322  
3300 AH Dordrecht  
The Netherlands

Two relatively new books which I recently acquired are:

- 1) Judgment, Decision and Choice: A Cognitive/Behavioral Synthesis by Howard Rachlin, (a Professor of Psychology at State University of New York).

Rachlin's book attempts to bridge the gap between behavioral and cognitive perspectives on choice. He shows how cognitive processes can be understood in behavioral terms, and acknowledges the existence and relevance of internal judgments and decisions in the external choices people make. One chapter is devoted exclusively to probability.

- 2) Handbook for Teaching Statistics and Research Methods, edited by Mark Ware and Charles Brewer.

I was excited to see that such a book existed, especially designed for college teachers. However, I was immediately disappointed after reading through this book. It consists of a collection of articles originally published in the APA Journal, Teaching of Psychology. These articles seem to me to consist of fairly naive and simplistic teaching tips, offered by psychologists who also happen to teach introductory statistics courses.

### Other Items of Interest

The April, 1989 issue of Mathematics Teacher has an article by John Mitchem on "Paradoxes in Averages." This article presents two major paradoxical examples of the average which are suggested as supplementary topics to use in stimulating students' thinking and interest.

A new examination in "Principles in Statistics" is being developed by the Educational Testing Service in Princeton, New Jersey. The exam is part of a program called DANTEs Subject Standardized Test which are used to help individuals obtain college credit for independent study. This test would allow students to "place out of" an introductory statistics course.

A new television course called "Against All odds: Inside Statistics" consists of 26 half-hour classes focused on the practice of statistics. The idea is to teach statistical ideas through exploration of their contemporary use. Questions raised and explored include: Can aspirin help prevent heart attacks? What do the polls really tell us? How can we best deal products of higher quality with lower costs? Courses were developed with funding by the Annenberg/CPB Project with additional funding from other organizations. The series is produced in cooperation with the American Statistical Association and will be aired in September, 1989. For more information, write to: Dr. Solomon Garfunkel, Executive Director, COMAP, 60 Lowell Street, Arlington, MA 02174.

### ICOTS III

Earlier in this newsletter I mentioned ICOTS III, the Third International Conference on Teaching Statistics. Efraim Fischbein has organized a series of papers on the theme of "Psychological factors affecting learning on probability and statistics." The following members of this study group will be presenting papers in this series:

Mike Shaughnessy, Ruma Falk, David Green, Joan Garfield, Marie-Paul Lecoutre, Cliff Konold, Rolf Biehler, Heinz Steinbring, Anne Hawkins, Manfred Borocnik, and Efraim Fischbein.

I believe there is still time to submit a contributed paper or poster session for presentation at ICOTS III. You may write to:

The Secretary  
ICOTS3 LO.C  
University of Otago  
P.O. Box 56  
Dunedin, New Zealand

I hope many of you are planning to attend ICOTS III and that we will have some opportunities to meet as a group there.

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That's all my news for now. Please send me information about your current projects and papers. I hope you all have an enjoyable summer. The next newsletter will come out in September.