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## Statistical Analysis of Change-Over or Reversal Tests

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5. These freshmen expected personal, kindly attention, and understanding counsel.

6. These freshmen expected a more commonplace practice of religion, with less emphasis upon the intensely devotional aspects, and perhaps a lessening of the pressure of going into Christian work as a vocation, would probably bring others into a recognized relationship with the Christian religion who now feel unrelated to the intensely religious emphasis of the campus.

7. Causative Factors: Low intelligence, high neurotic tendency, and low socio-economic status were functioning in the ratio of 7:6:3.

It was quite evident that other factors were functioning which the present study did not disclose.

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### SOME GENERAL AND SPECIFIC FACTORS IN TRANSFER OF TRAINING

CHARLES VAN RIPER AND ROBERT L. MILISEN

Two groups were used, one of which was trained in a right hand clockwise, and the other in a right hand counter-clockwise direction of motor skill. The transfer to the untrained hand in both groups was greatest in the direction opposite to training, although every case improved in both directions. The improvement due to the specific training was felt to account for the higher scores in the opposite direction, the remainder being due to general transfer.

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### STATISTICAL ANALYSIS OF CHANGE-OVER OR REVERSAL TESTS

A. E. BRANDT<sup>1</sup> AND A. STARBUCK<sup>2</sup>

The arithemetical procedure known as the analysis of variance is offered as a method determining the reliability of a test when two forms are given to subjects of known differences in ability

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or determining proficiency of students when given scaled questions. Results obtained by members of the English Department of Iowa State College in the process of designing a progress test are used as an example. The students were divided into high and low groups on the basis of scores received previously on the Iowa State College aptitude test, on a theme and on the Iowa State College English Department placement test. Three sources of variability are tested, namely: form, time and students. Complete details of the method are presented using the English Department data.

AMES, IOWA.

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### A MEASURE OF THE AMOUNT OF CHANCE IN TRUE - FALSE TESTS

E. O. FINKENBINDER

When students were informed of the number of errors they had made on a 30-point true-false test and given their answer sheets on which they crossed out and changed the answers they thought might be the ones in error, they could not significantly raise their scores (corrected for chance) when the number of true and false statements were approximately equal. If the number of true statements were greatly in excess of the false statements, say two true to one false, they lowered the score by their changes. On the other hand, if the false statements greatly outnumbered the true ones, then they raised their scores by their changes, no doubt due to the fact that they tended to equalize the number of true and false answers.

There is a strong tendency to think more statements are true than really are true. When the test contained an equal number of true and false statements, 60% of the answers were true, 40% false. This bias, producing  $\frac{1}{2}$  more answers "true" than "false," means that there will be more errors made in answers to false statements than to true ones.

A sample of the data is given below in which 18 statements are true and 12 false, answered by 28 students in psychology.

43 True statements wrongly answered not changed out of 88  
such wrong answers.

69 False statements wrongly answered not changed out of 119  
such wrong answers.

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112 Incorrect answers not changed.