Software Announcements

New Software

Journal Reference Assistance for APA Style Documents: A Terminate and Stay Resident Program

Programs written to assist students and researchers in making reference lists usually are part of a system with an integrated word processor—for example, Manuscript Manager (1988) or Journal Reference Assistance (Wolach, 1992). This program is a terminate and stay resident (TSR) or pop-up program that uses the portion of Journal Reference Assistance that assists in reference entry.

The TSR program provides access to a series of menus that allow the user to select an example of a reference that has the same form as the reference that the user is entering. For example, the user can select modifications from a menu so that a journal reference does or does not have an issue number. Each screen in the TSR program shows the key to press to return to the word processor.

The user enters the TSR program from the word processor by pressing the <Alt>-F10 key combination. If the user returns to the word processor and forgets the reference format that was selected from the Journal Reference Assistance (TSR) program, pressing <Alt>-F10 returns the user to the Main Menu of the Journal Reference Assistance program. The previously selected reference is displayed at the top of the Main Menu screen and will remain in that position until a new reference format is selected. The user can either return to the word processor or select a new reference category from this screen.

Journal Reference Assistance must be loaded before the word processor is started. It is also possible to place the name of the file containing Journal Reference Assistance into the AUTOEXEC.BAT file so that Journal Reference Assistance will be automatically loaded whenever the computer is turned on.

The TSR program can be used with virtually any DOS-based word processor. The program is not intended to work with Windows-based word processors. However, if the Journal Reference Assistance program is run before Windows is started, an MS-DOS-based word processor that is run from within the Windows environment can use Journal Reference Assistance.

The program works with file allocation and memory allocation software, such as Stacker Disk Device Driver. The program has been tested with MicroStar, WordPerfect (5.1), and WordStar (3.2, 4.0, 5.0). The TSR portion of the program was developed with Stay-Res Plus. Stay-Res Plus was designed to work with MS-DOS 3.2 and above. Journal Reference Assistance should work on most microcomputers using MS-DOS 2.0 through 3.1.

The Journal Reference Assistance program has been tested with MS-DOS 3.2 and MS-DOS 5.0.

Availability. A copy of the software (5.25-in. disk for IBM-compatible systems) and manual are available for \$2 (\$3 for a 3.5-in. disk). Requests for the software and manual should be sent to A. H. Wolach, Department of Psychology, Illinois Institute of Technology, Chicago, IL 60616.

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The Trilinear Program: A Program to Analyze Longitudinal Change on the Macintosh

The analysis of change is a topic central to many areas of psychological and physiological research. Change is often modeled according to the linear model, in which the variable of interest is assumed to change at a constant rate over a measured time period. In many instances, however, the linear model is not an accurate description of change. In particular, it may be the case that a period of change is preceded or followed by (or both) a period in which there is no detectable change (i.e., a period of stability). If a linear model is applied to data that include periods of stability, the rate of change is generally underestimated. The periods of stability may arise for a number of reasons (e.g., a true lack of change, or measurement or test insensitivity).

The trilinear model is a more general case of the linear model in which measurements are allowed to follow a pattern of stability-change-stability. This ensures that periods of stability do not affect the estimation of the rate of change. The trilinear model was recently described by Brooks, Kraemer, Tanke, and Yesave (1993) as it applies to Alzheimer's disease, but it is equally applicable to other conditions in which longitudinal measurements are taken. A diagram that depicts the trilinear model is shown in Figure 1. Note that the period of decline could also be a period of increase.

Figure 1. Illustration of the trilinear model. The period of decline could also be a period of increase.

The specifics of the model and how it is applied to data, as well as demonstrations of its advantages over the linear model, are discussed in detail by Brooks et al. (1993). Briefly, the trilinear model is more general than the linear model because it allows for periods of stability both before and after a period of change. Thus, the trilinear model will always fit data *at least* as well as the linear model, because if periods of stability are present in a given subject's data, the estimates of change provided by the linear and trilinear models are equivalent. Another important advantage of the trilinear model is that it provides estimates of additional parameters that the linear model cannot. Specifically, the trilinear model will, when applicable, provide estimates of the levels of stability (top and bottom), the points at which change begins and ends (T_0 and T_1 , respectively), as well as the average rate of change.

The program that applies the trilinear model to data implements the Macintosh interface and is accompanied by an instruction booklet. It will read data from a text file and can create output files according to several different criteria. A full explanation of the logic underlying the program is provided by Brooks et al. (1993).

Equipment. A Macintosh Plus with at least 4MB of RAM is required. A hard disk is highly recommended. The program is compatible with System 7, 32-bit addressing, and color modes.

Availability. The program and instruction booklet are available at no charge by writing to J. O. Brooks III, Dept. of Psychiatry and Behavioral Sciences (C301), Stanford University School of Medicine, Stanford, CA 94305-5548 (e-mail: job@icon.palo-alto.med.va.gov). The program may be freely copied and must be cited appropriately when used. The software is also available by anonymous ftp from macpsych@stolaf.edu in the directory pub/macpsych, as trilinear.sea.hqx. Further details concerning the archive are available in the archive "readme" file and in Huff and Sobloff (1993).

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Ex-Sample: A Comprehensive Approach to Sample Size and Power Analysis

Determining an appropriate sample size is a crucial aspect of research design. Too few cases can produce ambiguous findings. Too many cases can waste valuable resources and needlessly lengthen the study time. Ex-Sample is a comprehensive program for determining sample size. Ex-Sample computes the minimum sample size required for a wide range of analyses in a single run, adjusting for multiple comparisons and design effects. It then computes the maximum possible sample size given resources such as time and money, adjusting for execution factors such as response rates, attrition, and contamination.

Experienced researchers can use Ex-Sample to quickly call up the appropriate formulas, compute sample size, conduct "what-if" analyses, and report the results. For less experienced researchers, Ex-Sample offers advice and detailed procedures for estimating necessary values, an extensive on-line tutorial, and hundreds of hypertext definitions. At each point in the process, users select the level of help desired, moving quickly over familiar ground, receiving more help when in new territory.

Ex-Sample uses windows, pull-down menus, mouse support, and extensive hypertext help. Users can easily back up, skip around in the program, and have multiple windows open at the same time. Procedures are described on-screen, including formulas, references, and numerical examples. Users can scroll up or down to view information. An on-screen tutorial is coordinated with the program to provide context-sensitive help. The user can view formulas on screen and change parameter values using input lines to see how those changes affect sample-size estimates. Ex-Sample uses artificial intelligence strategies to provide a critique of all aspects of the sampling plan, identifying reasonable strategies for reducing the required sample size or increasing the possible sample size.

Ex-Sample contains over 60 formulas for determining sample size, including survival analysis, logistic regression, stepwise regression, path analysis, covariance structure analyses, acceptance, sampling, analysis of variance and covariance with and without interactions for factorial and other complex designs, tests of significance for a variety of measures of association, chi-square and contingency tables, scaling and classification analyses, measures of agreement and reliability, a wide range of nonparametric tests of significance, and, of course, many tests comparing means or proportions for one-and two-sample tests, when proportions are known or unknown, when group sizes differ or one group is fixed.