Comments from JABA Readers

AUTOMATED DATA ACQUISITION THROUGH TIME-LAPSE VIDEOTAPE RECORDING

Since the earliest publications on applied behavior analysis, researchers have emphasized the paramount importance of accurate measurements of behavior (Baer, Wolf, & Risley, 1968). Some researchers have found videotape recording to be a valuable behavioral assessment procedure (Leake, Barnard, & Christophersen, 1978). The advantage of videotape recording is that it produces a permanent record of actual behavior as it occurs. Videotape records permit the measurement of the subject's behavior (dependent variable) as well as the accuracy of implementation of the independent variable (the treatment integrity). The major disadvantage of videotape has been its physical limitations: Behaviors that occur in natural settings (e.g., home and school) can require a large number of videotapes at significant expense, because each tape holds only 2 to 6 hr of observations. Scoring from regular videotapes requires that the tape be viewed in real time. Further, the presence of an observer in the natural setting can be intrusive as well as inefficient, particularly when the observer is attempting to record very low-rate behavior.

Anders, Halpern, and Hua (1992) recently reported on the use of time-lapse videotape recordings (TLVCR) as a means of acquiring data over long periods of time. They reported on the normal sleep behavior of a sample of infants who were taped using a TLVCR. With the TLVCR, an entire night's sleep from 1 child was captured on one 2-hr videotape. In a recent study of children's behavior during the day and their behavior at bedtime (sleep onset), Edwards, Bushell, Ross, and Christophersen (1993) utilized a TLVCR (Toshiba Model KV-

5124A) for data acquisition. In this research, both children and their parents quickly adapted to the unobtrusive camera in the family room or the child's bedroom (the camera size is 1.5 in. by 1.5 in. by 4 in.). For night recordings, a low-wattage night light provided sufficient illumination for taping. All of the parents who participated in the research reported feeling very comfortable with the TLVCR.

How TLVCRs work. Depending on the model, TLVCRs can record from 2 to 400 hr of information on one regular 2-hr videotape. The recording tape runs continuously while the recording head uses different recording intervals (i.e., the tape travels at slower speeds for shorter intervals) for different time modes (e.g., when the TLVCR is set to record 12 hr on a 2-hr tape, the recording interval is 0.12 s out of each second). With this type of design, a sample of every second is recorded on the tape. Movements in the resulting videotape, when viewed at normal speed, are jerky and considerably faster than the original behavior. A built-in digital clock records the day, hour, minute, and second, determining precisely when each recorded behavior occurred. Further, the digital clock can be programmed to start and stop the TLVCR to eliminate times when no behavior is expected to occur. When 12 or 24 hr are recorded on one 2-hr videotape, each second can be seen on the tape when it is played at normal speed or on fast forward. The sound quality of the TLVCR is choppy, which may limit its use for detailed verbal recordings.

Cost. TLVCRs that can record in 2-, 12-, and 24-hr modes currently cost around \$880, with an additional cost of \$250 for the camera and \$160 for the monitor (for focusing the camera and adjusting the camera aperture). It is possible to use several cameras with an electronic splitter to capture behavior from more than one camera on the same tape at the same time. The cost of the electronic

splitter is approximately \$800. Standard splitters are available that will allow the recording of two scenes or four scenes on one tape. The TLVCR is quite easily adapted to a wide variety of environments, and can be set on a table, a tripod, or a shelf or mounted on a bracket on the wall.

The use of TLVCRs is an advance that allows researchers to record large samples of behavior on standard 2-hr videotapes. Like regular videotapes, the TLVCR tapes can be repeatedly analyzed and scored for different variables and different time intervals with different observers to establish reliability.

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KEVIN J. EDWARDS AND
EDWARD R. CHRISTOPHERSEN
CHILDREN'S MERCY HOSPITAL, KANSAS CITY

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