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ABSTRACT

An investigation to compare systematic behavioral observations made live with those made on television was conducted. The study was designed to answer three questions: (1) Is there a difference in the agreement between observers (Os) when both view an event live and when both view the same event on television? (2) Is there a difference in agreement between Os in the same viewing condition (either live or television) and between different viewing conditions (live and television)? and (3) What part of the variance can be attributed to (a) individual differences in the children, (b) individual differences among Os, and (c) viewing conditions (live or television)? The Ss were 12 boys and 12 girls between the ages of 39 and 57 months. All testing was conducted on same-sex dyads. Two situations were presented. In the Block-Stacking situation, Ss were given two piles of 10-cm. cardboard cubes and asked to build a pile taller than themselves. For the Draw-a-House situation, a 60 X 90 cm. piece of paper on which outlines of the two ends of a house were drawn was fastened to the floor. The Ss were rated on the level of their cooperative behavior. The study lends support for the use of television or videotape as a methodology in behavioral ratings. Ratings of the social behavior of young children made on television are comparable to observations made by live Os. The results also indicate that caution should be exercised when employing television. When the amount of error in the observations was high, viewing condition influenced the result. (CK)

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LIVE VERSUS TELEVISED OBSERVATIONS OF SOCIAL BEHAVIOR IN PRESCHOOL CHILDREN

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The purpose of this investigation was to compare systematic behavioral observations made live with those made on television. Generally, observational methodologies require that the *O* be present at the location at which the observation is to be made and that he score his observation at that time. The *O* identifies a scorable event, categorizes it, and enters an identifying code on a record form. Once the event itself has passed, its only record is the code assigned it by the *O*.

An alternate procedure is to make a recording of the event permitting the judgments to be made at a later date. Recordings have several advantages. The raw data are preserved permitting later reanalysis, the information yield can be increased by rerating the data using new criteria, methodological refinements (e.g., counterbalancing, double-blind designs) can be applied, and difficult classification decisions can be reviewed. There are, however, potential disadvantages to using recordings. Probably the most important issue is the degree to which recording distorts the data. Cameras and microphones reduce the range of incoming information, on the one hand, while focusing attention on specific parts of the information, on the other. The present investigation was designed to explore this problem. Social interaction, a relatively complex form of behavior likely to be effected by the distortion and information loss resulting from recording, was therefore the focus of the present study.

The observational methodology that is a part of the Oregon Preschool Test of Interpersonal Cooperation (OPTIC system; McDonald & Paulson, 1971; Paulson, 1972) was employed. The OPTIC system is a situational test of cooperation in preschool children. The children, tested two at a time, are confronted with problems to solve in a standardized situation. The situations are designed to permit the children to cooperate while solving the problem. Trained *O*s score the degree to which their behavior approaches full cooperation.

The study was designed to answer three questions:

1. Is there a difference in the agreement between *O*s when both view an event Live and when both view the same event on Television?
2. Is there a difference in agreement between *O*s in the same viewing condition (either Live or Television) and between different viewing conditions (Live and Television)?
3. What part of the variance can be attributed to (a) individual differences in the children, (b) individual differences among *O*s, and (c) viewing conditions (Live or Television)?

METHOD

The *S*s were 12 boys and 12 girls between the ages of 39 and 57 mo. All testing was conducted on same-sex dyads. Two situations were presented. In the Block-Stacking situation, *S*s were given two piles of 10-cm. cardboard cubes and asked to build a pile taller than themselves. Completion of the task required that *S*s combine the blocks

and help stabilize the stack during construction. The *S*s were observed for 5 min. For the Draw-a-House situation, a 60 X 90 cm. piece of paper on which outlines of the two ends of a house were drawn was fastened to the floor. The *S*s were asked to complete the picture by drawing connecting lines. The degree to which they coordinated their activities was used as an index of cooperation. The *S*s were observed for 2 min. The *S*s were rated on their level of cooperative behavior using the categories outlined in Table 1.

Four trained *O*s were used, two watching the *S*s Live and two (in an adjoining room) watching on Television. Pacing of the *O*s was provided by a 6-sec. tape-recorded signal supplied through an earphone. The *O*s scored the first behavioral event that occurred after the signal. Scores consisted of 10 - 50 digits recorded 6 sec. apart that ranged in value from 0 - 4. Scores used in the analysis were means of these values for each *O* position. The *O*s were randomly assigned to the observing condition (i.e., Live or Television) for each test. The results therefore are generalizable to observing condition rather than individual *O*s. All *O*s scored

TABLE 1

Summary of Oregon Preschool Test of Interpersonal Cooperation Scoring

Level of interaction	Score	Category	Examples
IV	4	Cooperation	Combining skills and resources, exchanging distributing behavior for the joint gain of the participants, or for the partial or complete acquisition of the individual goals of the participants.
III	3	Pre-cooperation	Sharing ideas, direction giving and taking, and other attempts to cooperate; may include intimidation and other conflict resolutions if the potential for cooperation is high.
II	2	Active interaction	Verbal interaction, copying or listening, working actively side-by-side but focusing on a different or separate product; no joint product results.
I	1	Minimal	Withdrawal, watching, with little movement and no verbal behavior; it is never apparent that one child is responding to another child even though some side-by-side activity is occurring.
0	0	Obstructive interaction	Verbal criticism, taunting, or other physical prevention of attainment of joint product.

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the same *S* during the testing, yielding a single score for each dyad.

RESULTS AND DISCUSSION

Correlations among *O* conditions were computed. For Block Stacking, there was high agreement when both *O*s were viewing Live ($r = .87$) or both on Television ($r = .84$). Correlations when one *O* viewed Live and the other on Television, although slightly lower, were also high (r s = .68, .76, .78, and .78). Although the correlations among observing conditions in the Draw-a-House situation were lower than in the Block-Stacking situation, the results were similar. The *O*s' agreement when viewing Live ($r = .35$) or viewing on Television ($r = .41$) were of similar magnitude. Correlations between Live and Television viewer conditions were more variable. Two fell above (r s = .51 and .72) and two fell below (r s = .21 and .31) the coefficients for the same viewing condition. These results from both situations indicate that *O*s watching Live agreed with each other as well as *O*s watching on Television; both when agreement was high (Block Stacking) or low (Draw-a-House).

Analysis of generalizability was used to determine if systematic variation in the scores could be attributed to viewing condition. This technique uses ANOVA to estimate variance attributable to sources specified in an experimental design (Cronbach, Gleser, Nanda, & Rajaratnam, in press). Variance estimates for *S*s (random variable) and observing conditions (fixed variable) were computed separately for each situation. The results on Block Stacking showed no effect for viewing condition (estimated variance: *S*s = .221, viewing condition = .000, error = .371). The results for Draw-a-House, however, revealed a viewing condition effect (estimated variance: *S*s = .082, viewing condition = .196, error = .332). This result suggests the following interpretation: when inter-*O* agreement is high (Block Stacking), the difference between viewing Live and/or on Television is negligible, and when agreement is low (Draw-a-House), a systematic bias may appear. An examination of Draw-a-House data revealed that Live *O*s tended to score *S*s as more

cooperative than Television *O*s, although the results failed to reach statistical significance ($F = 2.18, df = 1/10$).

When the videotapes of the Draw-a-House test sessions were reviewed, it was noted that the *S*s often placed their backs to the *O*s and the cameras. The lower inter-*O* agreement may have resulted from this poor viewing condition. Moreover, the tendency for the Live *O*s' rate higher on cooperation may have been due to the fact that, although they were seated in a fixed location, they were able to change their viewing angle slightly if the *S*s blocked their view. The Live *O*s may have noted precooperative or cooperative cues in an interaction that appeared parallel to the fixed camera eye of the Television *O*s.

The study lends support for the use of television or videotape as a methodology in behavioral ratings. Ratings of the social behavior of young children made on television are comparable to observations made by live *O*s.

The results also indicate that caution should be exercised when employing television. When the amount of error in the observations was high, viewing condition influenced the result. Efforts to increase the reliability of the observations should avoid a strategy that would increase the number of *O*s or the number of observations of the televised image. Rather, effort should be spent in arranging the setting for optimum viewing. In more recent work with Draw-a-House, a small barrier was placed at each side of the drawing paper making it inconvenient for *S*s to place their backs to the camera; the result was higher inter-*O* agreement.

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