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A PROBATION MEASUREMENT INFORMATION SYSTEM

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BACKGROUND

The information system which is the subject of this paper is being developed by the Los Angeles County Probation Department as part of the Probation Performance Measures Project.

The project's goal is to develop and validate measures of recidivism and the casework process by which to evaluate the quality of probation supervision. Instruments for measuring recidivism during and after supervision, client characteristics, and the probation officers' casework, will be defined and tested for reliability and validity. The system is being designed to support the validation phase of the project, during which recidivism and casework measurement data will be collected and statistically analyzed.

This paper is concerned with the application of systems design principles to the unique problems of validating instruments measuring the casework process. This is a working paper, in the sense that some details of the project's research design, on which completion of the system's design depends, have not yet been decided.

DEVELOPMENT OF CASEWORK PROCESS MEASURES

Before proceeding with the description of the system's data base and data collection and analysis components, some comments on development of casework process measures will clarify the system's functions.

The first phase of the casework process is investigation and diagnosis, including collection of information on an offender, assessment of his probability of success on probation, and making a recommendation to the court. During this phase, information on an offender's characteristics facilitating or hindering probation casework will be collected for the project. The data fall roughly into three categories, indices of social functioning, internal controls, and personal effectiveness. Some of the data included under each category are

- social functioning:
- quality of and satisfaction from relations with family and friends

- stability in family relations and school and work histories
- internal controls:
- definition of offense situations
 - relations with victims
 - sense of being under effective surveillance
- personal effectiveness:
- self-esteem
 - sense of responsibility for acts

Data on probation officers' casework effort will be collected for an offender placed on probation. The data to be collected include contacts with social workers, school principals, employers, and other agents influencing a probationer's environment, measures of effective counseling relations, and the scheduling of surveillance contacts with a probationer.

The effect of casework on a probationer will be measured by changes in social functioning, internal control, and personal effectiveness indices. Some data will be collected at each contact with the probationer, but certain items will be collected only monthly or when special incidents, such as violation or termination, occur.

Some of the data on probationers' characteristics or probation officers' effort may be collected for already validated instruments. The psychopathy scale of the Minnesota Multiphasic Inventory¹ and the counseling effectiveness scale of Truax and Carkhuff² appear applicable to casework elements. However, most of the data will be items in scales to be developed during the first twelve to eighteen months of the project. The scales will be summated item type, such as Likert's summated ratings.

THE DATA BASE

Specific elements for the data base will not be known until at least some casework measures have been defined. However, certain kinds of data are anticipated by the project's design and, from these, the data base's structure can be projected.

The unit record will be at the level of the probation case. The variable length record will include a subrecord for probationer identifiers, such as name, probation case number, or state criminal identification number, and descriptors, such as date of birth, ethnicity, and sex.

Other subrecords will represent data schedules completed on the probationer and will include item scores used in scales. These records will be keyed on date of completion and schedule type and have varying formats. Certain data in item

subrecords, such as probation officer's number and time sequence indicators, will be used as record selection criteria for data analysis. Time sequence indicators, which include months on probation and probationer's age, in months, will be used to specify individual scorings of a probationer on an item, for scale construction.

DATA COLLECTION

Human factors are usually not an important consideration in data collection for criminal justice information systems. This system is different, because the data collection setting can introduce errors into the casework effort and affect data to be collected for the project.

The major portion of the data is to be collected by a probation officer during casework sessions, such as probationers' reporting or home calls. A public opinion poll interviewer collects behavioral and attitudinal data in similar face-to-face interactions with respondents. The similarity suggests that studies of the sources of data errors in opinion polls will help to identify potential sources of error in the project's data.

Herbert H. Hyman, in *Interviewing in Social Research*³, has reviewed many studies of opinion poll error and developed a model of the error processes, which suggests additional similarities between data collection in opinion poll and casework settings. The model has been adopted, on the basis of its plausibility,⁴ to indicate possible solutions to human factors problems for data collection in the casework setting. I will briefly outline the model, applied to that setting, before discussing the solutions which have been developed.

In the outline, references to "error" should be understood to mean both random and biasing error, although for the project more concern is being given to reduction of biasing errors.

INTERVIEWER-CAUSED ERROR

According to Hyman's model, an interviewer introduces errors by failure to recognize and follow up on incomplete answers to questions or by editing responses in a way that distorts their meaning.

A good interviewer adopts an orientation to the task of probing answers and recording them accurately and a degree of social distance which limit errors. A poor interviewer, on the other hand, is too socially interactive with a respondent and introduces errors through his attitude structure,

role, and probability expectations about a respondent's answers.

As Hyman uses the term, attitude structure expectations refer to the perception by an interviewer of a consistent pattern of attitudes in a respondent's answers. Experimental results show that an interviewer can introduce error into data when he relies on his attitude structure expectations in deciding whether to probe and how to record answers. He is more credulous of incomplete answers which agree with anticipated responses, and in recording he edits answers to be consistent with his perceptions of a respondent's attitudes and beliefs.

Role expectations, which lead an interviewer to anticipate certain answers because of a respondent's social position as housewife, Negro, or blue-collar worker, operate like attitude structure expectations to produce errors. Probability expectations due to an interviewer's anticipation of a certain distribution of responses over all respondents creates errors in distributions of survey results.

Because it is important to casework, a good probation officer maintains the detachment necessary for data collection in the casework setting. However, the error model suggests some situations in which an officer's expectations can affect data.

Interviews for which procedures are not completely given and which use free-answer questions are subject to errors resulting from lack of structure, which increases the number of decisions an interviewer must make about the completeness and interpretation of responses and, therefore, the opportunities for expectation effects to occur. The possibility of the counseling sessions in which probation officers will be collecting data are undirected and open-ended.

Collecting data in the casework setting is difficult for a probation officer, because time spent recording data is a distraction from the counseling process. His mechanical problems with recording can be serious enough that he loses interest in accuracy and uses his expectations about responses to help him decide when to probe or how to record answers.

The construction of an opinion questionnaire or respondent selection procedures can increase opportunities for expectation effects. Role expectations are likely to occur in the presence of physical or verbal cues which type a respondent, with questions which concern role-related attitudes or behavior. Attitude structure expectations are fostered by interlocking attitude questions and certain

question sequences. If interviewers have knowledge of distributions of answers in previous surveys, probability expectations are encouraged.

Because a probation officer works closely with a case for several months and has information on a probationer's personal relations, feelings, and beliefs, opportunities for role and attitude structure expectations are more frequent in the casework setting than in an opinion poll interview. In addition, a probation officer is prone to probability expectations based on experience with all his clients.

It is suggested that expectations affect data when psychological stress in the interview situation makes it difficult to decide how to record answers. Casework presents many problems for a probation officer, such as whether to reprimand a probationer or return him to court for modification of probation, and, in these situations, a probation officer uses expectations he has developed over the period of supervision about a probationer's attitude toward probation and the law and about his role in his family and community to aid him in making casework decisions. In these circumstances, data collected in the casework setting will be affected by an officer's expectations.

RESPONDENT-CAUSED ERROR

Like interviewers' expectation effects, effects of the interview situation on a respondent can cause errors.

Under normal circumstances, an opinion poll respondent has a task orientation and social distance similar to an interviewer which controls error. A probationer in the casework setting will also have the necessary task orientation, to the degree that he sees a connection between accurate information given to the probation officer and early release from probation, lack of arrests, and future financial security. It is to be expected, however, that in most counseling sessions a probationer will either regard probation as irrelevant to his life or attempt to manipulate the probation officer through concealment of information, distortion of facts, and censorship of attitudes and belief seen as disapproved by the officer.

The situational factor contributing to a probationer's deliberate and unconscious errors in the casework setting is a difference in group membership, which increases the likelihood of an interview affecting a respondent. The difference between probation officer and probationer is significant for a probationer, because questions about his attitudes and beliefs are seen by him as being related

to the uses the officer will make of his authority. Therefore, the probationer is influenced to edit his answers in order to manipulate the officer.

CONTROL OF ERROR

The solutions which have been developed for the project to control errors are standardizing elements of probation casework sessions, simplifying data collection, collecting redundant data and performing analyses to identify problems, training probation officers for data collection, providing useful data to probation officers, and creation of a special team of interviewers.

Presently probation officers use many kinds of forms for recording casework information, with a range of specificity in the data to be entered from partially formatted adult and juvenile investigation worksheets to unformatted chrono cards. To avoid the previously discussed problems of unstructured interviews, the schedules developed to collect data on casework sessions for the project will replace all forms, such as chrono cards, which are used to record notes on office or home visits. The revised forms will be constructed to avoid questions which facilitate attitude structure expectations or which will encourage a probationer to distort answers. Criteria for complete answers and standard definitions of pre-coded response categories will be developed. The interview procedures to be followed and the use of schedules within a counseling session will be specified.

Pre-coding of response categories on the data schedules will also simplify the mechanical problems of recording data for a probation officer. Another technique which may be used to simplify data recording is tape recording casework sessions. Tape recording would make the least demands on the officer of any data recording technique and, by eliminating the need to write during a session, allow the officer to intrude less into the probationer's awareness. Taping would also permit checking completed data schedules for errors against a transcription of the session. The problems are that the method is expensive and difficult to use out of the office.

The collection of data which are redundant, in the sense that several items are selected to represent one casework variable, makes it feasible to identify possible sources of errors statistically. If one item in a scale is particularly subject to error it may be possible to identify the item by its lack of correlation with other items, with which past experience suggests it should correlate.⁵ Another procedure, requiring random assignment of a sam-

ple of cases to probation officers, would permit comparisons of casework data among probation officers or data collection situations. Significant differences in average scores or variability of data indicate possible errors attributable to particular officers or collection situations.

Training of probation officers as data collectors will be primarily directed toward following standardized procedures for completing the project's data schedules. Part of the instruction will cover awareness of behavior which can influence probationers' answers and of the officers' own attitude or role expectations.

Instruction will be reinforced by feed-back to a probation officer of his mistakes. To detect the mistakes, casework sessions will be observed and data schedules checked for accuracy against a tape recording if one is available.

Data collected for the project will be provided to probation officers to help them monitor their own performance and their cases' progress. The data are expected to motivate immediate benefits from the data, tools which support them in carrying out their professional functions.

Creation of a special team of interviewers without case supervision responsibility would reduce errors by taking data collection out of the casework setting. A data collection specialist would have relatively limited contact with any one probationer and would be less likely to develop attitude structure expectations. He would also have no responsibility for casework decisions, which encourage use of attitude structure and role expectations. To the extent that a probationer saw a specialist as non-authoritative, he would probably adopt a somewhat better orientation to the task of answering a specialist's questions in order to improve his situation on probation.

Another advantage of creating a team of interviewers is that persons with better potential data collection ability could be selected. Specialists would be selected for probing and recording skills and an introverted personality, which indicates ability to remain detached and resist expectation effects during an interview.

Creation of a special data collection staff is problematical, however. It would involve hiring special personnel and require either additional staff or reorganization of supervision units and reassignment of probation officers to larger caseloads.

DATA ANALYSIS⁶

The function of the system's data analysis component is to perform computations of esti-

mates of reliability for summated scores and their validity with respect to recidivism criteria, with little programming effort required of a research analyst to extract data from the case record file, construct scales, and carry out analyses.

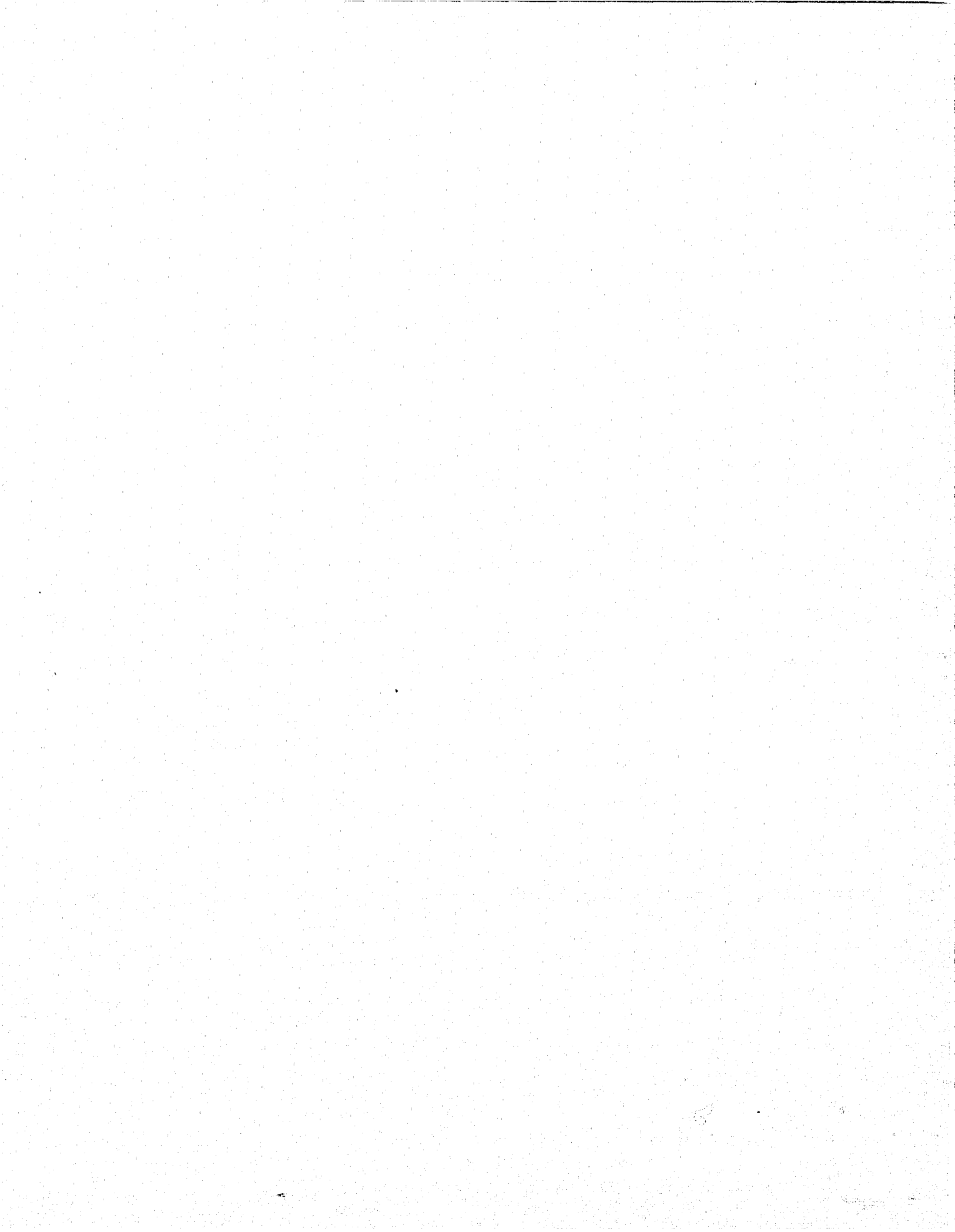
To perform the basic analytical operation of scale definitions and scoring, the analyst will list names of items to be included and time sequence selection criteria and weights for each item. The subrecord type and field location of an item will be pre-defined in the data analysis system, and, with the above data entered, a matrix of item scores by probationer, item score averages and variances, and a Kuder-Richardson reliability coefficient will be generated. The analyst will have available item intercorrelation estimates of parallel forms or retest reliability for related scales, constructed by selection of equivalent items or identical items at different points in time.

For item analysis, the system will generate the point-biserial correlation of each item with total scale score. If item analysis suggests it, the analyst may also request computation of the matrix of tetrachoric correlations between pairs of items and a factor analysis according to criteria specified by him.

Once used, scale definitions will be included in the system's data description. The analyst will be able to recall the definitions and scores for scales proved reliable. The scales can then be analyzed for validity by multiple regression against or factor analysis with recidivism measures selected as criterion variables.

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3. (Chicago: The University of Chicago Press, 1954).
4. Compare the interviewer's behavior with the probation officer's as described in David Dressler, *Practice and Theory of Probation and Parole* (New York: Columbia University Press, 1969) and Barbara A. Kay and Clyde B. Vedder, eds., *Probation and Parole* (Springfield, Ill.: Charles C. Thomas, 1963).
5. Herbert H. Hyman discusses this point in *Survey Design and Analysis* (Glencoe, Ill.: The Free Press, 1955).
6. References for the statistical techniques in this section are Edwin E. Ghiselli, *Theory of Psychological Measurement* (New York: McGraw-Hill, 1964); J. P. Guilford, *Psychometric Methods* (New York: McGraw-Hill Book Co., 1954); Dean K. Whitla, *Handbook of Measurement and Assessment in Behavioral Sciences* (Reading, Mass.: Addison-Wesley Publishing Co., 1968).



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