method of orthogonal polynomials for fitting time series.

e. discarding information which may be redundant or irrelevant, as in using a sample instead of a census, or in using non-parametric tests, which are not as powerful as the usual tests. The method of sequential analysis, in which analysis does not continue beyond the point where a proof has been sufficiently established, may also be viewed as a shortcut for the survey statistician.

f. efficient utilization of experimental designs to acquire additional information at no increase in time or costs, as in the use of factorial experiments rather than a series of single factor tests.

g. final category characterized by Frankel as "the use of imagination in the utilization of standard techniques," as in determining the mean height of a group of school children. Knowing that height is generally distributed normally, and that in a normal distribution the mean is equal to the median, the statistician's shortcut procedure would be to line up the members of the group in order of height and measure the height of the middle (median) individual. Another example given was the Politz nights-at-home plan, which extends probability sampling by determining the probability that an individual will be at home when the interviewer calls. Another example is in using the simple relationship between range and standard deviation to get a quick approximation of a distribution's standard deviation.

In the general discussion the following points were developed:

1. The scaling procedure suggested by Marder has a high test-retest reliability, even over a 14-week lapse of time. It was mentioned that this system has been used successfully even with children as young as six years old. They are given the option of stating a numerical value or indicating a point on the thermometer scale of affect. The suggestion was made that the scale might be used as a basis of classifying individuals as to the "extremeness" of affect in their responses.

2. The iterative method of solving matrices was held to be more efficient for factor analysis than direct calculation by means of the Doolittle method.

3. The non-parametric approach was strongly recommended for the analysis of attitude data. It was agreed that the book Nonparametric Statistics for the Behavioral Sciences, by Sidney Siegel, offered an excellent introduction to this field of statistics.

4. There was agreement on a number of cautions to be observed when taking the various statistical shortcuts. The cautions follow:

   a. One-tail tests must not be used indiscriminately. They are useful only when the opposite hypothesis is meaningless.

   b. When a large number of tests of significance are calculated, the incidence of significant results must be seen in the perspective of the total number of tests conducted. It was held that the failure to do so was the most commonly committed statistical error of survey statisticians.

   c. When testing the significance of a difference between means or percentages, the analyst must make sure he does not use the formula for uncorrelated data if both means or percentages are based on the same population.

   d. When calculating correlations between two measures, one of which is contained in the other, the correlation to be expected on a chance basis alone is greater than zero. Therefore the expected chance correlation, and not a zero correlation, must be used to estimate the deviation of such a correlation from chance expectations.

RELATIONS BETWEEN METHODS OF POLITICAL ANALYSIS AND POLLING PROCEDURES

Chairman: W. Phillips Davison, The Rand Corporation

Reporter: Jackson Toby, Rutgers University

Mark Abrams (Research Services, Ltd.) argued that in Great Britain, if not in the United States, the political situation is in flux. Traditional voter loyalties are changing so rapidly that only public opinion polls can keep up with what is going on. He illustrated this thesis by analyzing the 21 by-elections that have occurred in Britain since the general election of 1955. The Conservative vote in the by-elections was 27% less than the Conservative vote in the same districts in the general election—a much greater reduction than could
be explained by turnout considerations. The press was not very helpful in accounting for what happened. Newspaper post-mortems were inconsistent and reflected their ownership or traditional allegiance. Political commentators arrived at approximate agreement that middle-class Conservative voters were alienated by the government's welfare-oriented economic policy and stayed away from the polls in protest; Abrams produced poll data which suggested that this hypothesis was quite erroneous. According to his data, working-class rather than middle-class Conservatives stayed away from the polls in the by-elections, and they wanted more welfare programs rather than less. "Today's working-class Tories have the needs of yesterday's socialists." In this world of changing political loyalties, where old political habits collide with present-day economic self-interest, Abrams felt that the pollster is in the best position to interpret political events.

Louis Harris (Louis Harris & Associates) criticized Abrams for seeming to patronize newspaper men and political analysts. Far from having a monopoly on insight, pollsters often fail to set their surveys into a meaningful political context and, as a result, come to erroneous or irrelevant conclusions. Harris ventured to predict that this parochialism of pollsters may prove their undoing and that the future of public opinion polling belongs to those who are able and willing to relate their surveys to the type of political analysis which has tended to be the province of newspaper columnists and political theorists. "A survey of political behavior cannot be conducted in the same way as a survey of soap."

As an illustration of a growing tendency for political analysis and polling to be mutually illuminating, Harris cited the work of Samuel Lubell. Lubell analyzes election data intelligently in order to find out what questions to ask and where to ask them. Then he takes to the field and interviews voters. He does not have a probability sample, but, as a result of his initial political analysis, he is able to squeeze a great deal of meaning from the answers to his questions. Of course, Harris hastened to add, Lubell is an unusual newspaper man. Most newspaper men don't know how to get rapport on the doorstep; as a result they tend to interview persons of political importance rather than average voters. And, while there is certainly a place for this in furthering political understanding, it is not a substitute for systematic polling.

Malcolm Moos (Johns Hopkins University) pointed out that each political party contains at least two elements: the professional workers and the mass following. Frequently, the professionals are of one mind and the rank-and-file are of another. When there is a difference of opinion between these segments, it is not a simple matter to say (a) which opinion will prevail or (b) which opinion ought to prevail in the interest of party or nation. Thus, Moos cited the victory of the professionals over the mass following in the 1952 Democratic nominating convention (Stevenson over Kefauver) and the victory of the mass following over the professionals in the 1952 Republican nominating convention (Eisenhower over Taft). Moos questioned the normative implications of public opinion polling. He believes that instances arise where the public is not in a good position to form an intelligent opinion. The notion that the legislature or the executive should follow every gust of public opinion leaves little room for leadership.

Louis Bean, Harold Gosnell, Sidney Goldish, Richard Scanlan, and others commented on the formal speeches. The consensus seemed to be that politics is so complex a subject that no one method can achieve full understanding. Public opinion polling and political analysis will have to hang together or perish separately.

**INTERPRETATIONS OF THE 1956 ELECTION**

**Chairman:** Herbert Hyman, Columbia University  
**Reporter:** Richard S. Halpern, Research Institute of America

Angus Campbell opened the session with a report of a study recently completed at the Survey Research Center on the motivations behind straight and split-ticket voting during the 1956 election. By drawing upon a three dimensional model of political motivation, Campbell found that a substantial part of the total causation of the vote for president could be accounted for by three factors: party identification, candidate partisanship, and issue partisanship. These variables can be described respectively as (1) the feeling of attachment the individual has toward his party and its symbols, (2) his reaction to the relative attractive-